

**THE NATURE AND STRUCTURATION OF MANAGEMENT CONTROL IN  
KNOWLEDGE INTENSIVE WORK**

**A STUDY OF INFORMATION TECHNOLOGY SERVICES WORK IN INDIA**

**Thesis submitted for the degree of Doctor of Philosophy at the University of  
Leicester**

**Secki P. Jose  
School of Business,  
University of Leicester**

**2019**

## **Abstract**

The recent decades have been characterised by an increasing share of services work, not only in industrial and developed economies, but also in several developing economies. The growth of several forms of knowledge-intensive work have been integral to these transitions. The following study is an examination of the nature of labour processes and management controls within a type of knowledge-intensive work, specifically Information Technology Services or ITS work. The study is based in the city of Bengaluru, which is located in the State of Karnataka in the southern part of India, and is host to the largest centre of the IT industry in India. The study is qualitative in nature and relies principally on semi-structured interviews — with ITS workers, managers, trade union representatives and government officials — and combines it with a detailed examination of the extant labour institutions that regulate various aspects of work.

The study examines the nature and operationalisation of managerial controls in ITS work by utilising an analytical framework based on Edwards' (1979) conceptualisations of technical and bureaucratic managerial controls. The study analyses the labour process via management controls, but goes further by uncovering and building connections between the managerial controls and labour regulations. The study argues that the selection and nature of managerial control strategies are closely inter-linked and often determined by the scope and extent of local labour institutions. These linkages, between managerial controls and labour legislations, can be found in various aspects related to the management of grievances and separation (resignations and dismissals). Strong contestations also arise between managements and workers over these issues, and the contestations are explored through several examples from the field research data. Overall, the study makes a contribution to a deeper understanding of the basis and form of managerial strategies that seek to extend control over knowledge intensive work.

## **Acknowledgements**

First and foremost, I express gratitude to those who participated as interviewees in my study. I remain indebted to them for their generosity in taking time out of their busy work lives to participate in my research. The participants included workers, managers, executives, unionists and government officials in Bangalore. I owe particular thanks to the IT Employees Centre, an association of IT workers who were a particular source of inspiration during the course of the research. This thesis would not have been possible without their generous support.

I thank my supervisors, Glynne Williams and Nikolaus Hammer, for their continuous support over the years with a special thanks to Nik, who patiently went through my very abstruse drafts in painstaking detail. I thank Dimitris Papadoupoulos and Sara Robinson, faculty at the University of Leicester, as well as Phil Taylor and Trevor Colling, who examined this thesis, for their support and words of encouragement. I also thank Teresa Bowdrey, Michael Drummond and other administrative staff at the University whom I have bothered over the years for matters small and large.

This thesis could not have been completed without the help extended by friends whose warm hospitality got me out of knotty situations at various points in time: for this, I thank Rasim, Mukund and Robert. I would like to thank my other fellow PhD travellers Patricia, Ririen, Bowen, Orhie, Ruixian and other PhD students for their easy and warm companionship. I would like to thank my old friends who have put up with my long absences over these PhD years, but still remain close friends.

I would especially like to thank my parents who have always supported my work over all these years. Perhaps the biggest thanks goes to my partner, Deepa, who was part of each and every stage of this project and without whose continuous support, this project would not have become reality. A special thanks to her parents for their warm and understanding support to both of us over the years.

*It is the empty space that gives function to a vehicle.  
Clay is moulded into a vessel.  
It is the empty space that gives function to the vessel.  
Doors and windows are chiselled out to make a room.  
It is the empty space in the room that gives its function.  
Therefore, something substantial can be beneficial.  
When its emptiness is utilised.*

Lao Tzu, 'Dao de-Ching', Chapter 11, c.500 BCE

*Where is the wisdom we have lost in knowledge?  
Where is the knowledge we have lost in information?*

T.S. Eliot, 'Choruses from "The Rock"', 1934 CE

## Table of Contents

<b>Abstract</b>	<b>2</b>
<b>Acknowledgements</b>	<b>3</b>
<b>List of Tables</b>	<b>7</b>
<b>List of Figures</b>	<b>7</b>
<b>Abbreviations</b>	<b>8</b>
<b>Chapter One Introduction</b>	<b>10</b>
<b>Chapter Two The Nature of Work and Managerial Controls in IT Services Work</b>	<b>19</b>
2.1 The Internationalisation, Outsourcing and Offshoring of Services Work	20
2.2 The Role of Knowledge in Services Work	24
2.3 The Idea of Managerial Control	28
2.3.1 The Foundations of Managerial Control	30
2.3.2 The Many Sides of Managerial Control	32
2.4 The Control of Work within the IT industry	35
2.4.1 The Control of Work in Call Centres	36
2.4.2 The Control of Software and IT Services Work	38
2.5 The Labour Process, Managerial controls and Production Politics	41
2.5.1 Contestations over Control and the Nature of Labour Regulation	45
2.5.2 The Indian IT Industry and Labour Regulation	50
2.6 Conceptual Framework and Research Questions	53
<b>Chapter Three Methodology of the Study</b>	<b>56</b>
3.1 The Philosophical and Ontological Approach	56
3.2 The Nature of studies on the Labour Process	59
3.3 The Method of the Study	61
3.3.1 Data Collection Strategy	65
3.4 Operationalising the research: Research site selection and access	66
3.5 Selection of Interviewees	70
3.5.1 Interviewee category One: ITS workers	73
3.5.2 Interviewee category Two: IT managers	75
3.5.3 Interviewee category Three: Workers' representatives	78
3.5.4 Interviewee category Four: Government officials	79
3.6 The Analysis of the Data	80
3.7 Ethical Considerations and Reflexivity	81
<b>Chapter Four The Indian IT Industry and IT Services Work</b>	<b>87</b>
4.1 The Indian IT Industry in the Indian Economy	89
4.2 IT Services and the Internal Structure of the IT industry	94
4.3 Labour Regulation in the Indian IT Industry	99
<b>Chapter Five The Deployment of Technical Controls in ITS work and Contestations over Knowledge</b>	<b>105</b>
5.1 The Fragmentation and Allocation of ITS Work	106
5.1.1 The Ticket-based System: Discrete Fragments of Work	107
5.1.2 The Fragmentation of Project-based Work and Other Combinations	111

5.2	The Gradual Increase in Work Targets and its Legitimation	115
5.3	The Extensification of Work: The Hours of Work, Breaks and Leaves	120
5.4	Monitoring and Surveillance of ITS Work	125
5.5	The Two faces of Automation	129
5.5.1	‘Automation from above’	131
5.5.2	‘Automation from below’	134
5.6	The Contestations over Knowledge and its Control	136
5.7	Discussion and Analysis	141
5.8	Conclusion	144
<b>Chapter Six</b>	<b>The Operationalisation and Structuration of Bureaucratic Controls</b>	<b>146</b>
6.1	Employment Contracts in the ITS sector	149
6.2	Evaluation Systems: Promotions, Rewards and Discipline	154
6.3	At the Margins of the Firm: Conflicts around Attrition and Dismissals	160
6.3.1	Attrition and Stemming its Consequences	161
6.3.2	The Reduced Mobility of ITS Workers and its Discontents	170
6.3.3	Dismissals and Layoffs: Fundamental Conflicts and the Emergence of Resistance	174
6.4	The Other Boundary of Labour Processes: Connections between Managerial Controls and Labour Laws and Regulations	181
6.4.1	Institutional Avoidance and The Shaping of Labour Regulatory Frameworks	186
6.4.2	Bureaucratic Controls and their Relationship to Regulation	192
6.5	Discussion and Analysis	198
6.6	Conclusion	202
<b>Chapter Seven</b>	<b>Conclusion</b>	<b>204</b>
7.1	Synthesis and Discussion of Research Findings	205
7.2	Some Theoretical and Conceptual Contributions	214
7.3	Limitations of the Study and Avenues for Further Research	218
<b>Appendices</b>		
Appendix A – Sample Information Sheet		222
Appendix B – Table of Labour Legislations: IT Industry in Karnataka, India (2017) State (Karnataka)		223
Appendix C – Interview Schedules		225
Appendix C1 - Employee Questionnaire		225
Appendix C2 - Manager Questionnaire		228
Appendix C3 – HR Manager Questionnaire		231
Appendix D – List and Details of Interviewees (ITS Workers)		234
Appendix E – List and Details of Interviewees (Managers)		235
<b>References</b>		<b>236</b>

## **List of Tables**

Table 3.1 – Total number of different types of interviewees

Table 3.2 – Range of characteristics of interviewed ITS workers

Table 3.3 – Different types of managers who were interviewed

Table 4.1 – Total employment and export revenues of the Indian IT industry (2000 – 2015)

Table 6.1 — Attrition Rates in Top 4 Indian IT firms (by size of employment) 2000-2015

## **List of Figures**

Figure 3.1 - The contribution of individual States to Indian IT exports

Figure 4.1 – Trends in employment and export revenues in the Indian IT industry (2000 – 2015)

Figure 4.2 – Structure of the Indian IT industry

Figure 5.1 – A common ticket-based organisation of ITS work

Figure 6.1 – Annual growth in employment in the Indian IT industry (2000 – 2015)

## Abbreviations

AI – Artificial Intelligence  
BPO – Business Process Outsourcing  
BPM – Business Process Management  
CCNA – Cisco Certified Network Associate  
CR – Critical Realist/m  
CMM – Capability Maturity Model  
CTO – Chief Technology Officer  
CTUO – Central Trade Union (Organisation)  
FITE – Forum for IT Employees  
FSMK – Free Software Movement (Karnataka)  
GCC – Global Commodity Chain  
GPN – Global Production Network  
GRC – Grievance Redressal Committee  
GVC – Global Value Chain  
HCL – Hindustan Computers Limited  
HLL – High Level Language  
HP – Hewlett Packard  
HR – Human Resources  
IBM – International Business Machines  
ICT – Information and Communication Technologies  
INR – Indian Rupee  
ISO – International Standards Organisation  
IT – Information Technology  
ITEC – IT Employees Centre  
ITIL – IT Infrastructure Library  
ITS – IT Services or IT-enabled Services  
IVA – Involuntary Attrition  
IVR – Interactive Voice Recognition  
KB – Knowledge Base  
KIF – Knowledge Intensive Firm  
KITU – Karnataka IT Employee Union  
KM – Knowledge Management  
KPI – Key Performance Indicator  
KRA – Key Result Area  
(K)SCE – (Karnataka) Shops and Commercial Establishments (Act)  
LPA – Labour Process Analysis  
LPT – Labour Process Theory  
MBA – Masters in Business Administration  
MCA – Masters in Computer Applications  
MNC – Multi-National Corporation  
NASSCOM – National Association of Software and Services Companies  
NK-ITPF – North Karnataka-IT Professionals Forum  
NSR – National Skills Registry  
OS – Operating System  
PBC – Personal Business Commitment  
PF – Provident Fund  
PIP – Performance Improvement Plan  
RPA – Robotic Process Automation



SCE – Shops and Commercial Establishments (Act)  
SEZ – Special Economic Zone  
SLA – Service Level Agreement  
SM – Scientific Management  
STEM – Science, Technology, Engineering, Mathematics  
STPI – Software Technology Parks of India  
TCS – Tata Consultancy Services  
TSM – Taylorist Scientific Management  
UNITES-PRO – Union of IT-ITeS Employees-Professional  
VA – Voluntary Attrition  
WFH – Work From Home

# Chapter One

## Introduction

In the second half of the twentieth century, several economies faced changing employment structures, where employment and output in the economy shifted from manufacturing towards services. This macroeconomic shift towards services was characterised as ‘post-industrialism’ or ‘post-Fordism’ (Bell 1973; Hirschorn 1984; Touraine 1971). The shifts were generally viewed favourably, as a harbinger of new and better forms of work, and purportedly shifting away from the monotony of industrial work (Bell 1973; Drucker 1993). Broadly speaking, working in the services sectors was seen to be beneficial because knowledge-based services work presented a potential to free workers from what was widely understood as arduous, alienating, de-skilled Fordist production (Blauner 1964). Services work, heralded by notions of post-industrialism and post-Fordism, was set to replace industrial capitalism and its various maladies.

There were multiple and complex socio-economic facets to the shift towards services (Sternberg 1993). Though a variety of interpretations attempted to characterise these changes, a common theme that emerged among them was that much of the emerging forms of services work were centered around information and knowledge, especially theoretical knowledge, of the ‘scientific and technical variety’ (Bell 1973: 20; Drucker 1968). As a result, focus shifted to the growth and expansion of a new class of scientific and technology workers, who possessed such knowledge, and were highly educated in scientific and mathematical fields (popularly referred to as the Science, Technology, Engineering and Mathematical or STEM fields). Based on the burgeoning growth of these workers, it was then argued that capitalist societies were no longer characterised by two antagonistic classes — the bourgeoisie (capitalist) and the proletariat (the wage workers), as conceptualised by Marx (2010 [1887]) and others — who were divided along the lines of ownership of production. Instead, there was now a new technical and professional class that had emerged between the two (Castells 1996). This new class of services workers was seen to derive their influence by possessing scientific knowledge, leading to the argument that ‘information’ and ‘knowledge’ should now be seen as the key organising principle of such societies (Bell 1973; Castells 2000; Miles and Gershuny 1987). The new classes of

workers were often highly educated and knowledgeable, sometimes even more so than their managers. There was little doubt that the transition to services work would lead to vastly different work processes and working conditions.

Despite its potential, these wholly positive notions of post-Fordism and post-industrialism were shown to be deficient when evaluated critically and empirically. At the conceptual level, it was shown that these categorisations — i.e. post-industrialism and post-Fordism — were too broad and lacked explanatory power about the nature of the emerging forms of services work and about how they differed from industrial work (Jessop 1990a; Thompson 2003). An empirically grounded counter to the narrative of the beneficial nature of such work emerged through detailed examinations of the labour processes of such work; largely reinvigorated by the observations of Braverman (1974). Detailed examinations of the changes being wrought to various forms of work placed and (re)elevated the labour process as central to understanding changes and the mechanics of valorisation within the broader capitalist dynamics of wealth accumulation (Knights and Wilmott 1990: 7). Much of the critical analyses since then have questioned the generalised and optimistic notions of post-industrial services work based on the ground realities of how services work was actually being carried out (Thompson and Smith 2010).

Studies of work in newly emerging services industries found that the characterisations of all services work as ‘knowledge work’ was overly simplistic (Frenkel et al. 1999; Thompson and Smith 2010). Different types of services work are characterised by widely varying levels of knowledge requirements, working conditions, benefits and autonomy (Frenkel et al. 1995). In fact, many of the management practices focused on labour processes in industrial and manufacturing sectors were now also being recast and replicated in services occupations. Such analyses have, over time, played a crucial role in both questioning the ‘emancipatory’ potential of services work and also in challenging the premature optimism of earlier narratives, which failed to adequately analyse the nature and the dynamics of capitalism with its constant requirement to generate surpluses and facilitate capital accumulation.

For the most part, discussions about post-industrialism or post-Fordism were limited to developed and industrialised countries. However, capitalist firms in the global north started reorganising the production of goods and services by moving portions or sometimes entirely transplanting production to relatively less-developed nations (Gereffi and Korzeniewicz 1994; Held et al. 1999). Several developing economies involved in this process saw significant changes in their economic structures. Among these countries was India, which, owing to a slew of relatively unique domestic factors, emerged as a favoured location for the relocation of services work, especially call center and IT work (Arora et al. 2001; Boes and Kampf 2007; Oshri et al. 2009). The services work transported to India was, in many ways, incongruent with the wider under-developed nature of the Indian economy, which, is still primarily agrarian<sup>1</sup>. However, despite being a low to middle-income developing economy with a predominantly agrarian workforce, India's economy has come to be dominated by services: which employs around 30 per cent of the total workforce, but the sectoral contribution of which was over 50 percent of the country's economic GDP (UNCTAD 2017). However, in many ways, the Indian economy is considered to be an example of 'premature deindustrialisation' (Rodrik 2016) given that it never went through a large-scale manufacturing and industrial phase in its economic development trajectory (Kochhar et al. 2006). As a result, despite India's services-heavy economic structure, several ideas of post-industrialism or post-Fordism are approached with a higher degree of caution. This notwithstanding, the Indian economy exhibits several similarities — in terms of the dynamics, issues and concerns around services work and employment — when compared to developed services-led economies due to the similar dominance of services in its economy.

Along with such shifts to the structure of employment, the decades since the 1970s was also witness to distinct changes in the way states approached markets. Broadly speaking, it was argued that the best approach towards the economy is to have as little regulation as possible while being broadly supportive of its requirements; this and its associated set of ideas were characterised as a neoclassical/neoliberal approach to markets (Harvey 2007). Economic changes in India too were marked by a distinctly neoliberal-oriented turn in the state's role and approach vis-à-vis labour, product and financial markets since the 1990s

---

<sup>1</sup> Around 55 percent of India's total workforce is primarily engaged in farming and agricultural work (Population Census 2011).

(Ahluwalia 2002; Corbridge and Harriss 2002; Kohli 2007). These changes/trends are important for they form the wider context for the changes in labour and product markets and how firms adapt their managerial strategies to these changes (Hyman 1975; Kelly 1985).

There would be little doubt about the significance of studying changes to work and labour processes given that it has important effects on the distribution of national incomes between capital and labour (Granovetter and Tilly 1988). Nominal or real declines in workers' wages and incomes can result in macroeconomic declines in the relative share of labour in total income and this is widely understood to be a key driver of economic inequality (Little 1990; Piketty 2014; Stiglitz 2012). A slew of work and production-related factors can drive such changes. These range from technological change (Brynjolfsson and McAfee 2011; Frey and Osborne 2013) to the increased mobility of capital driving outsourcing and offshoring (Autor 2003; Harvey 2007; Rodrik 1997). All of these can contribute to precarious and informalised employment (Standing 2011) leading to further declines in the bargaining power of workers and therefore their wages and incomes. In other words, the effects and changes to work and employment also have important macroeconomic consequences for societies. And it is with this understanding that the importance of studying work-related aspects becomes all the more critical, analytically, to understanding wider socio-economic phenomena. This importance of the consequences of the changing dynamics of work is a key reason that motivates this study.

## **The Study**

The following study broadly follows in the tradition of critical examinations of changes to work and employment. More specifically, it examines the nature of work and employment within knowledge-intensive services work. It attempts to understand the strategies deployed by employers and managers that try to exert and extend 'control' during the production and provision of such services. In order to do this, the study examines labour processes in Information Technology Services (ITS) work for empirical examination. ITS work is a sub-segment of the IT industry involving "...systems integration, IT outsourcing/managed services/hosting services, training and support/maintenance". (NASSCOM 2014: 76). Such work usually involves the installation, configuration and the

maintenance of an organisation's networks, computers and other supporting digital infrastructure (such as printers, servers, routers, mainframes and so on). It should be noted that this work is unlike either programming/coding or call-center work, both of which have been extensively studied. Traditionally, such ITS work had remained within the remit of local IT departments. But it was with the reorganisation of such work and the rise of specialised IT service provider firms that such work could be contracted out, giving rise to a more centralised, organised and capitalist form. It is this type and organisation of ITS work that is examined in detail in the present study.

The labour process is prioritised, in some part, due to the practical limitations of the study, for, the research is fully cognizant that there are other stages of capital and consumption that contribute to the creation of surpluses and profits (*cf.* Kelly 1985). The importance of the labour process in valorisation and in the extraction of surpluses is an idea that traces much of its basis to the writings of Marx [2010 (1887)]; but the more modern examinations of labour processes were largely inspired through the ideas of Braverman (1974) among others. The understanding that has developed over time through detailed examinations of the labour process, is generally called Labour Process Analysis (LPA) or Labour Process Theory (LPT), and the present study largely addresses and advances discussions within these literatures. Within the LPA or LPT literature, it is understood that there exists an 'indeterminacy' (or an incomplete contract) in how much work is to be done by a worker. Capitalist firms and employers purchase 'labour power' (or the potential to do work) by hiring workers from the labour market. But the potential to do work is embodied within the worker and needs to be then transformed into actual labour or work. Capitalists and managements have a 'control imperative' due to this need to continuously extract labour from the labour power of workers (Thompson 1990; Thompson and Newsome 2004). The following study will focus its examination on this imperative for control in order to understand the dynamics of the labour process. In order to execute the analysis, the study utilises and builds upon the conceptualisations of 'managerial controls' by Edwards (1979). Relying on a historical evolutionary understanding of the manner in which 'managerial controls' have evolved over time, Edwards identified its two broad manifestations in 'technical' and 'bureaucratic' controls. Using this, work organisation and labour processes in ITS work are examined and management controls are analysed. The selection of the point of production for analysis immediately reduces the scope of the

study to the dynamics of valorisation to this stage only, and this forms a significant limitation of the study. On the other hand, the study advances the examinations of work by incorporating an analysis of broader labour institutions within which the labour process is enmeshed. This is done by examining labour regulations and how they potentially affect managerial ‘controls’, and subsequently the labour processes. A detailed understanding of such aspects forms a major area for advancement in the understanding of labour processes (refer Burawoy 1985; Smith and Meiskins 1995; Steinberg 2003; Thompson and Smith 2000; Vidal and Hauptmeier 2014).

## **Practical Approach**

The following thesis attempts to critically evaluate work in a knowledge-intensive occupation through an analysis of its labour processes and related managerial control strategies. The primary research question that guides this thesis is:

**“How is managerial control extended over knowledge intensive IT Services work?”**

The study examines ITS work; which is an important sub-type of IT work. ITS work is considered to require a relatively higher degree of knowledge among the various forms of work within the IT industry (Flecker and Meil 2010; Frenkel et al. 1995). The IT industry and ITS work in particular largely evolved out of the proliferation of new digital computing technologies that came into being in the second half of the 20<sup>th</sup> century; in that sense, the industry is relatively new. To study the labour processes within ITS work, and the form and nature of managerial controls within it, the city of Bengaluru (formerly known as Bangalore) in south India was chosen; for the city is known as a globally prominent hub for ITS work. However, by virtue of both the industry’s nature and its geographic location, an analysis of work is rendered a complex endeavor. This owes to the fact that ITS work represents a form of knowledge work that is operating largely in globalised offshored and outsourced arrangements. ITS work in India thus carries the imprint of both of these phenomena. Further, the broader IT industry is also seen to be located within a very specific institutional context with regard to labour; and the study carries out an in-depth examination of the extant labour regulations in order to connect the analysis of labour processes with the regulatory institutions of such work. The thesis thus contributes to an advancement of the current understanding of labour processes in

knowledge intensive services work in two ways. First, it provides a comprehensive picture of how work is organised in such forms of offshored knowledge work and the various unique dynamics that arise in the managerial control of such work. Second, it provides some theoretical avenues for the addressing the problem of understanding how labour processes can be “affected and structured” by labour institutions (Vidal and Hauptmeier 2014: 18).

## **Thesis Outline**

The thesis is organised in the following manner. Following this introductory chapter, the basic concepts and theories that are utilised within this thesis, such as those related to labour processes and managerial control, are introduced and discussed in chapter 2. This chapter attempts to understand how ‘managerial controls’ are deployed within services work and, more specifically, within the IT industry and ITS work. The chapter also discusses some of the inter-connections between labour processes, managerial controls and regulatory institutions. Following this survey of the extant literature, and the known and unknown aspects of work, the main research questions that guide the subsequent research are formulated.

Moving ahead with the operationalisation of the research questions, Chapter 3 discusses the broad philosophical approach that was utilised in the study. The research strategy is outlined and the reasons for its selection are elaborated; this includes detailed discussions of the study’s research method. The chapter describes the sample of interviewees and addresses the rationale of the method selected for gathering data as well as how the data was actually collected. This also involves a discussion of some of the hurdles faced by the researcher in the field and how these were overcome, reflecting on how planned approaches were sometimes disrupted by the realities of the field. The data was analysed using an iterative thematic analysis and the process by which this was carried out is discussed. The chapter then addresses some of the concerns around research ethics such as privacy and confidentiality of the interviewees, and how these were maintained. In the final segments, the chapter delves into the researcher’s own subjectivities in relation to the study and how the researcher’s own position resulted in specific considerations when approaching the interviewees.



Chapter 4 builds an understanding of the background and context of ITS work with a detailed description of what constitutes ITS work, showing how its definitions and understanding may vary across countries. IT work is contextualised within the broader Indian economy so as to enable an understanding of its location within the national and wider socio-political institutions. A detailed discussion follows on the structure of labour regulation of IT work in India and then, more specifically, in the federal State of Karnataka, where the study is located. This chapter, in conjunction with the review of literature, thus aims to provide a background for segments involving the analysis of labour processes and managerial controls, and the related discussions in the subsequent chapters.

Chapter 5 is the first analysis chapter and it focuses on aspects related to the organisation and execution of the actual work. This chapter largely draws on Edwards' understanding of 'technical controls', regarding control over the 'pace and direction of work'. The chapter is divided into several key sections that involve an examination of the allocation and pacing of work, how output is controlled, issues of monitoring, automation as well as aspects related to knowledge. This chapter discusses in detail, based on the evidence collected from field research, the findings on the manner of fragmentations, intensification as well as the extensification of ITS work. Issues related to the control of knowledge highlight some of the contradictions created by the additional layers of management that arise from the offshoring and outsourcing of work. Aspects related to the standardisation, modularisation and automation of work, and the impact of these on the workers are also discussed with relevant examples.

Chapter 6 is the second of the empirical and analysis chapters. This chapter focuses on the nature of the employment relationship between the IT firms and workers. The findings and discussions in this chapter roughly correspond with Edwards' notions of 'bureaucratic controls', and so this involves aspects around promotions, rewards and punishments among others. Here, there are two broad segments in the analysis. The first focuses on the interconnections and overlaps between technical and bureaucratic controls and how these are used in combination by managements. And, the second segment draws out some

connections between labour processes, managerial controls and the institutional (regulatory) factors that structure work. The clearest of these connections were found in issues relating to separation and dismissals with significant contestations around the mobility power of workers. These conclusions were arrived through a combination of empirical insights and a detailed study of the extant labour laws and regulations.

The concluding chapter, Chapter 7, presents a summary of the key findings from Chapters 5 and 6, by revisiting the research questions that had been formulated earlier. It then goes on to discuss the implications of these findings for understanding work and employment relations in the IT industry. The key theoretical and empirical contributions of the research are highlighted and discussed. The chapter then revisits some of the limitations of the study and explores some of the possible avenues for future research.

## Chapter Two

### The Nature of Work and Managerial Controls in IT Services Work

This chapter seeks to understand the organisation of knowledge-intensive services work, and the different types of managerial strategies that are utilised to manage these types of work and its workers. Here, our focus is on IT Services (ITS) work carried out within the IT industry. The chapter provides an in-depth discussion of the literature that tries to understand the various management ‘control’ strategies that are deployed in the labour processes of such work. The chapter begins with a discussion about the international division of labour in services and the phase of technology-enabled globalisation that gave rise to it. Section 2.1 discusses these phenomena that arose out of a renewed and increased technology-driven mobility of capital. It was this internationalisation and globalisation that resulted in the post-industrial transitions of developed, industrial societies affecting other countries as well. As a result, countries at varied levels of development — most notably, developing countries such as India, Philippines among others — also witnessed occupational shifts towards services. Much of the Indian IT industry grew by leveraging such phenomena and the relative advantages of the Indian workforce. And so this becomes crucial in understanding the organisation of the work and subsequent discussions around it.

The focus of Section 2.2 is on the nature of ‘knowledge’ in ITS work. The debates around what constitutes ‘knowledge work’ and whether ITS work does indeed constitute such a form of knowledge work are discussed. The different types of knowledge work and the intensity of knowledge in ITS work are explored. For Braverman (1974), the acquisition of knowledge of the work was integral to Taylorisation and deskilling. Though various strategies are deployed in the international reorganisation of work, managements (both at the ‘source’ and ‘destination’) still need to be able to maintain ‘control’ over the production of goods and services. Here, ‘managerial control’ is a key concept that is utilised in this study. How this concept is understood and approached is elaborated in detail in Section 2.3. The section also describes and justifies the thesis’ specific approach to control. Section 2.4 then builds on the understanding that has been developed and examines the manner in

which managerial control is manifested in the IT industry and in IT work. The thesis views manifestations of managerial controls within the workplace as being enmeshed within and connected to wider employment relations that govern work. Section 2.5 explores how labour processes and managerial controls may be linked to aspects of labour regulation. This deals with specific questions of whether and how labour processes, managerial controls and labour-specific regulatory institutions are inter-connected — and also how it might be possible to uncover inter-connections between them. Finally, drawing on the review of the extant literature and concepts that have been discussed in the preceding sections, section 2.6 lays out the research questions which guide the subsequent operationalisation of the research.

## 2.1

### **The Internationalisation, Outsourcing and Offshoring of Services Work**

In order to develop an understanding of the nature of managerial controls within the Indian IT industry, it is necessary to have some understanding of the manner of its growth and organisation. Several factors contributed to the internationalisation of IT work and its spread to India. It is generally agreed that the primary factor driving work to locations such as India was a search to reduce labour expenditures by different types of organisations (Arora et al. 2001; Dossani and Kenney 2003; Noronha and D’Cruz 2009: 43; Taylor and Bain 2004). Combined with low labour costs, there was also linguistic compatibility — largely arising from historical linkages — due to which a large supply of English speaking workers were available (Taylor and Bain, 2004). This meant that English speaking countries, primarily the United States (US) and the United Kingdom (UK), were the main source of clients and revenue for the Indian IT industry (ibid)<sup>2</sup>.

The multiple labour-related benefits of the Indian workforce still needed to be physically accessed and this was facilitated by an increased mobility of capital in the second half of the 20<sup>th</sup> century, which saw the internationalisation of firms and production processes

---

<sup>2</sup> These two countries have contributed to around 80 percent of the Indian IT industry’s total revenues through much of the industry’s history (NASSCOM, 2014).

(Castells 1996; Howcroft and Richardson 2012). In its early years, the Indian IT industry capitalised on domestic outsourcing which arose out of the peripheralisation and subcontracting of IT work in the US and UK. This involved physically relocating Indian workers to these locations, a practice that was termed “body-shopping” at the time (Balakrishnan 2006; Kapur 2002; Xiang 2007). But with the subsequent growth in the power of Information and Communication Technologies (ICTs), much of this type of work began to be digitised and transported to various parts of the world, and it was no longer necessary to relocate workers to do this work. These processes led to the growth of IT employment within India in the 1990s with many firms growing almost exponentially in the 2000s (Aspray et al. 2006; Heeks 1996; Heeks et al. 2001). South Asia, dominated by India, emerged as a favoured destination for the outsourcing, relocation and offshoring of such forms of services work from the 1990s onwards (Boes and Kampf 2007; Budhwar et al., 2006: 341; Oshri et al., 2009). The Indian IT industry was thus right at the heart of this phenomenon of globalisation and the offshoring of services work (Arora et al. 2001; Athreye 2005). While the range and scope of the early services provided by the Indian IT industry were relatively modest, over time, the industry diversified and matured by moving into increasingly complex, horizontally integrated IT services (Budhwar 2006; Dossani and Kenney 2007; Flecker and Meil 2010). By 2015, the Indian IT industry was generating annual export revenues of over USD 55 billion and employed an estimated 3.5 million workers directly (NASSCOM 2016).

The IT industry thus grew in India due to the spread of IT-related business operations across national boundaries, extracting the benefits of a range of local factors often related to labour, and this was integral to the attendant globalisation of the production of goods and services (Held et al. 1999; Taylor and Bain 2004). Production processes, whether in goods or services, were vertically disintegrated and globalised through geographical relocation, often to developing low to middle income countries (Gereffi et al. 2001; Cattaneo et al. 2010). This (re)organisation of production has been conceptualised variously as Global Commodity Chains (GCCs), Global Value Chains (GVCs) or the Global Production Networks (GPNs) (Castree et al. 2004; Coe et al. 2008; Gereffi and Korzeniewicz 1994; Rainnie et al. 2011). GVCs and GPNs are built by disaggregating and disintegrating production and extends over both organisational and national boundaries (Marchington et al. 2005). Though this new round of capitalist geographic mobility transcended national boundaries, production is still very much embedded within the local

socio-economic factors, especially in its labour related aspects (Bair 2008; Harvey 2001; Jonas 1996; Selwyn 2012). However, it must be noted that the production and the workers then function under extended managerial chains and hierarchies (Rubery et al. 2005). It could be said that this is highly relevant for services work such as IT work, because it almost exclusively relies on labour with few other production inputs or products.

This international movement of production processes (of goods or services) from one country, a ‘source’ country, to another ‘destination’ country crossing national borders is referred to as ‘offshoring’ (Ghosheh and Messenger 2013). This often involves the use of varied organisational arrangements and so the manner offshored work is organised can often be fairly heterogeneous (Flecker and Meil 2010; Gereffi et al. 2001; Taylor and Bain 2006). Early IT-related offshoring arrangements usually included firms creating subsidiaries or creating exclusive tie-ups with local vendors. These were largely ‘captive’ operations where work was largely retained in-house by the firm or through a highly-dependent subsidiary (Noronha and D’Cruz 2009; Oshri et al. 2008). Though such arrangements dominated the early years of the Indian IT industry (NASSCOM 2005), Indian IT firms grew in complexity and scope over time and the industry is now dominated by specialist IT firms — Indian IT firms such as Hindustan Computers Limited Technologies (HCL), Infosys, Tata Consultancy Services (TCS), Wipro or international IT MNCs such as Accenture, HP, IBM, among others — that cater to a variety of clients and organisations offering a very broad range of IT-related services.

The services provided by the Indian IT industry are broadly categorised into three core segments: Software services, IT-enabled Services (ITS or ITeS) and Call centre/BPO services (NASSCOM 2014). Among these, ITS work (which is the subject of this study) is considered to be relatively high in terms of its knowledge and skill requirements, and owing to its variegated nature was thought to be less susceptible to standardisation and modularisation (Feuerstein 2013; Flecker and Meil 2010). Despite this, IT firms do manage to achieve a degree of standardisation of ITS work (Flecker and Meil 2010; Flecker et al. 2013: 12). Moreover, it is known that *before* any move to offshore and outsource operations can occur, a degree of standardisation, modularisation and codification is already completed (Batt et al. 2009; Flecker and Meil 2010; Thompson and Smith 2009). It is only

subsequent to this that specific tasks are fragmented and then offshored (Ramioul and DeBruyn 2008; Huws and Dahlmann 2009).

Usually, various types of organisations offshore their IT work via medium-term contracts that are renewed every 5-10 years (Noronha and D'Cruz 2009: 39; Oshri et al. 2008: 44-5). When these contracts are drawn up with specialist IT firms, then the work is often characterised by both offshoring and outsourcing. While earlier arrangements clearly dealt with specific business operations, the increasing integration of IT and computing into organisations have led to the relationships between the client organisations and the IT firms growing in complexity over time, with many services no longer being clearly differentiated from an organisation's core operations but rather becoming increasingly horizontally integrated across a range of functions (Dossani and Kenney 2007; Flecker and Meil 2010; Taylor and Bain 2006).

The relocation of IT services work notwithstanding, managements still need to retain control over the outsourced/offshored production. Control by the lead firm is generally exercised through the enforcement of Service Level Agreements (SLAs) which usually contain a whole gamut of quantitative and qualitative parameters defining what the output of the work ought to be (Bain et al. 2002; Noronha and D'Cruz 2009: 73; Taylor 2010; Taylor and Bain 2007). Offshored arrangements thus give rise to extended hierarchies of managers when compared to production processes under direct employers; and this has significant effects on the structure and implementation of managerial control strategies (Feuerstein 2013; Flecker et al. 2013; Grimshaw et al. 2005). The offshoring relationship therefore affects the structure of the labour process because control over the labour process is wielded not just by the worker's immediate employer, but also by the employer's client (Marchington et al. 2005; Rubery et al. 2005).

Analysing international supply chains and production networks (through GVC or GPN approaches) contributes to our understanding of how modern production is organised. This provides ways to go beyond a single site of production and make connections that transcend local and national boundaries. At the same time, production is very much influenced by local factors, especially in aspects related to labour (Hammer and Riisgard

2015; Jonas 1996; Smith et al. 2002: 47; Thompson 2010). While varied organisations can genuinely benefit from the reduced labour costs achieved through offshoring and retain some degree of control over the work through SLAs, this still leaves local managements in offshored firms, who carry out the actual production, to figure out ways to bridge the indeterminacies of labour while also extracting profits out of such arrangements. This is complicated by the offshored IT firm's need to adjust to the varied demands of lead clients, heterogeneity in the types of offshored work, the varying degrees of complexity and uncertainty around securing or renewing contracts; and these create a slew of challenges for offshored firms and their managerial strategies (Feuerstein 2013; Kinnie and Parsons 2004). In call-centre work, which is integral to the IT industry, these challenges are met by offshored IT firms by transforming the work into highly Taylorised forms (Bain and Taylor 2000; Batt and Moynihan 2002). However, the services being provided still retain an element of customisation, making them different from a purely Taylorised mass-production industrial form (Batt and Moynihan 2002; Frenkel et al. 1999; Russell and Thite 2008; Taylor 2010).

This section sought to highlight how offshoring and outsourcing are integral to much of the work carried out in the Indian IT industry. As far as labour processes are concerned, offshoring and outsourcing results in extended lines of management. Offshoring is only initiated after some degree of standardisation and modularisation have been achieved so as to create clear deliverables in the SLAs. Our analysis of ITS work has an added dimension because it is a form of 'mental' and 'knowledge' work — unlike manufacturing and industrial production work, which can be directly observed and documented. A consideration of this necessitates a closer look at the role of knowledge in work as well as in the offshoring relationship and this is done in the next section.

## 2.2

### **The Role of Knowledge in Services Work**

The processes of internationalisation and globalisation discussed in the previous section were one aspect of the transition towards services-based economies and the newly emerging services economy. These services jobs were also thought to be centered on



'knowledge' and 'information' (Bell 1973; Castells 2000). And so, management theorists argued that the management of knowledge, information, data and knowledge workers was possibly the defining managerial challenge of the 21<sup>st</sup> century (see Drucker 1999). As a result, the role of knowledge became the starting point to understand the difference between newer forms of services work and earlier industrial work. 'Knowledge' thus was elevated to a central position and it was argued, quite influentially, that the principal aim of all firms should be to generate new knowledge, acquire it, protect it and evolve strategies to extract profits from it (Nonaka 1994; Nonaka and Takeuchi 1995).

Here, before proceeding, it is admitted that there are some difficult problems in defining and understanding what exactly constitutes 'knowledge' (Alvesson 2004: 45; Hislop 2013; Warhurst and Thompson 2012). Though many of the deeper philosophical questions about the nature of knowledge are perhaps yet to be answered, this has not stopped the categorisation of knowledge based on its different forms/types or it being conceptualised in a variety of ways. Within organisations, knowledge can be of several types i.e. either tacit/explicit; codified/personal; individual-based/organisation-based or procedural/substantive (*cf.* Alvesson 2004; Blackler 1995; Nonaka 1994). Such categorisations give us a better picture of the various forms of knowledge but shed little light on the extent or scope of its contribution in services work and particularly knowledge work. All work requires some element of knowledge (including manufacturing and industrial production) and so the generalisations of new forms of services work as 'knowledge work' is hardly indicative of anything distinctive about services work (Alvesson 2004; Alvesson and Karreman 2001). In fact, it would be difficult to identify types of work where absolutely no constitutive background knowledge was required; which is why placing knowledge as the defining component of services work and related occupations is hardly useful in differentiating it from other forms of work and therefore requires a more nuanced approach.

The neo-managerial focus on knowledge however echoes of the early emphasis laid on knowledge in Taylorist (1914) Scientific Management (TSM). Recognising this centrality of control over knowledge, Braverman (1974) critiques managerial strategies that try to appropriate workers' knowledge. Braverman argues that the acquisition of the worker's knowledge forms a major starting point for the implementation of TSM by virtue of its

attempt to separate the conceptualisation and execution of the work. In fact, Braverman argues that the acquisition of knowledge formed the first stage of the process of deskilling of work and the technical division of labour (Braverman 1999: 77). Now, once again, nearly a century later, in a manner that is highly reminiscent to that of Taylor's, managerial attention was being refocused on knowledge. Management theorists now argue that it is very important for managements and firms to focus on the codification, acquisition and control of knowledge (refer Drucker 1999: 81). Professional, managerial and technical workers are identified as the workers that possess newer forms of knowledge, and therefore, the ones on whom firms and managements should focus their energies (Drucker 1999). These groups of workers are seen to be different from other workers because they operate on the foundations of "specialised knowledge of the highest order" (Drucker 1989: 209). The wide influence of such managerial ideas around the control of knowledge has meant that the possession, organisation, maintenance and development of an organisation's knowledge is clearly recognised by managements today. Subsequently, firms and organisations have been investing and expanding their Knowledge Management (KM) systems, as knowledge is seen as a distinct object that needs to be formally captured, codified, stored and utilised (Davenport and Pruzak 1998; Hislop 2002; Hsiao et al. 2006; Cortada and Woods 2000).

The main thrust of the arguments that support control over knowledge is that knowledge itself is a key by-product of firms and therefore managements must look for ways for its acquisition, storage, production and application (Nonaka 1994; Nonaka and Takeuchi 1995). Extending such a logic, a worker's knowledge is also part of an organisation's; for it is argued that a worker's knowledge is not created in isolation but is an organic by-product of being located within the firm's organisational and social environment (Nonaka 1994: 15). As a result, the capture of an employed worker's knowledge through different strategies is legitimate (ibid: 19). As pointed out earlier, such ideas are not entirely new. But, perhaps what is new in these arguments is the legitimisation of its acquisition and capture by managements and firms. Though Braverman's arguments had largely relied on observations of industrial work, the importance and centrality of the role of knowledge in TSM and the role it plays in the ability of managements to control the labour process is clearly recognised for all types of occupations. Highlighting the centrality of knowledge to all stages of TSM and its practices, Braverman (1999: 82) pointed out that:

[I]f the first principle [of TSM] is the gathering and development of knowledge of labor processes, and the second is the concentration of this knowledge as the exclusive province of management--together with its essential converse, the absence of such knowledge among the workers - then the third is the use of this monopoly over knowledge to control each step of the labor process and its mode of execution.

Once managements build a comprehensive knowledge of the labour process then with every passing year the knowledge of the work is further standardised and modularised, resulting not only in its concentration in the hands of management but also in a progressive decline in the need for any imaginative contribution by the workers (ibid).

There is now little doubt therefore that knowledge plays a central role in work and labour processes. The acquisition and control of knowledge is emphasised as a key area of contestation in forms of knowledge work, the extent of which is somewhat a new indeterminacy for managements to deal with (Sewell 2005). This is perhaps truer in the case of IT work, which requires relatively advanced knowledge and technical skills. This is one way to differentiate 'knowledge work' from other forms of work; for they are usually highly analytical, involving the identification and solving of complex problems, often requiring higher mathematical and technical skills, and all this makes it difficult to standardise such work (Reich 1991: 233). In order to demarcate knowledge work from other forms of services work, Winslow and Bramer (1994:14) identify knowledge work as those that require the interpretation and application of existing information in order to create and provide new solutions that add value to the organisation and its products. It is also possible to differentiate ITS work based on the degree of knowledge it requires: this differentiation stems out of the recognition that such work requires an *intensive* use of knowledge and can be involved in the generation of new knowledge in a majority of its work processes (Kochen 1984: 150).

Different types of knowledge work require different levels of knowledge in order to carry out the work, and so it is possible to classify various forms of work on the basis of the extent to which theoretical knowledge, creativity and analytical skills are required while

carrying it out (Frenkel et al. 1995: 778). For example, call centre work could be classified as a form of knowledge work because the call centre workers need to work on specialised software and applications, while also simultaneously utilising/exhibiting social and communication skills when dealing with customers. However, within the spectrum of knowledge work, it requires relatively lower levels of creativity, theoretical and ‘intellectual’ skills; with occupations such as architects, registered nurses and technicians at the higher end of the spectrum (ibid: 782). This understanding, drawing on the varying levels of knowledge is utilised in defining ‘knowledge intensive’ work (Alvesson 2004); this allows for clarity in distinguishing ITS work from other forms of knowledge work because it requires an intensive utilisation of knowledge. This is because knowledge plays a central role in ITS work (Flecker and Meil 2010; Flecker et al. 2013: 10). By extension, the IT firms that carry out such forms of work can be seen as Knowledge Intensive Firms (KIFs) (Alvesson 2004). Knowledge intensive work thus involves forms of work that require considerable education, training and experience in order to carry out the analytical tasks entailed by the work (ibid: 11). The specificity that the term ‘knowledge-intensive work’ contributes to differentiating and understanding the role played by knowledge in ITS work motivates this thesis’ choice of this typology instead of the relatively loose and broad ‘knowledge work’. Overall, this section has contributed to understanding the role of knowledge within services work. More importantly, this discussion serves to emphasise that various forms of services work have disparate knowledge requirements in their work. The role of knowledge was central to Braverman’s notions of deskilling and the renewed managerial strategies for their acquisition in knowledge intensive work once again raises its importance for understanding the structure and control of ITS work.

## **2.3**

### **The Idea of Managerial Control**

Managements resort to a variety of strategies to maintain and extend their ‘control’ over production in various types of services. However, before exploring different managerial ‘control’ strategies in this study, an elaboration of what is meant by the term ‘control’ is required. This section therefore explores different aspects of managerial control and its related concepts, and also elaborates on how various management control strategies can result in a slew of contestations between managements and workers. These are seen to be

the result of the managerial attempts to transform the indeterminate embodied labour that they acquire into actual labour. After examining the general concept of ‘control’, the section later proceeds to examine the specific ways by which managements exert control over different forms of IT work and shows how these are influenced by offshoring, as well as some of the specificities of knowledge intensive work.

The forces that motivate the re-organisation of the production of goods and services are driven by the wider processes of surplus creation and capital accumulation (Kelly 1985; Littler and Salaman 1982; Edwards 1990). Capitalists and firms who are involved in the organisation and re-organisation of production need to ensure that they continue to exercise control over the production process and over the workers so that they can extract surpluses (or profits) from the production (Thompson 1989; Thompson and Newsome 2004). In order to produce goods and services, firms and managements purchase labour power (or the potential to do work) from the labour market. But this labour is ‘indeterminate’ in nature as managements need to then translate this labour power into actual labour or actual work (Braverman 1999: 39; Thompson 1989: 41). In order to translate this labour power into work, managements resort to a variety of ‘control’ strategies in order to maximise the work that they can extract from the worker (Edwards 1979; Storey 1985a; Thompson and Smith 2010). These ‘controls’ are viewed as being key to understand how the extraction of surpluses and profits actually takes place during the production of goods and services. Much of the approach to this study is built upon concepts related to these managerial controls in the labour processes; therefore, this constitutes one of the core theoretical foundations of this study. The section begins with a discussion of why a labour process-centric examination of work is a useful approach to understand changes to work; it then moves on to demonstrate how such changes can be understood by utilising related concepts such as deskilling and ‘managerial control’. Following that, we proceed to examine how these concepts are practically deployed in work in the broader services sector, and later, more specifically in the IT industry.

### 2.3.1

#### **The Foundations of Managerial Control**

Braverman's (1974) argument — that over the course of the 20<sup>th</sup> century there had been a profound “degradation” in the content of work — ushered in a renewed focus on studying the ways in which capitalist organisations extracted surpluses by modifying the labour process (Greenbaum 1999). The degradation was attributed by Braverman largely to the ubiquitous deployment of management practices inspired from Taylorist Scientific Management (TSM). Such management strategies sought to increase the technical division of labour, leading to the “deskilling” (or a reduction in the skills required to carry out the work) of work. Though the empirical observations for this theory were largely based on insights from manufacturing industries, Braverman also showed its possible applications in services work too (refer Braverman 1999: 121, 256). Regardless of the type of work, for Braverman it was obvious that such strategies were largely derived from the principles formalised in Taylor's (1914) conceptualisation of ‘Scientific Management’; and much of Braverman's treatment and approach were informed by a Marxist analysis of Taylorist and Fordist production practices. Arguing that TSM is the foundation from which modern managerial control emanates, Braverman then identifies its three main constituent principles. First is the attempt by capitalists and managements to dissociate the labour process from the workers' skills or the attempts to minimise a worker's contribution to the work as far as possible. The second principle relates to the separation of conception and execution of the work. This referred to how the gulf between the planning and the execution of the work is created and increased over time. And finally, the third principle related to the management's use of their monopoly over knowledge to control the labour process (Braverman 1999: 78).

While Braverman and others such as Gorz (1967) and Mallet (1975) were key early figures in the revival of the focus on the labour process, it must be pointed out that they were not the first to understand the deleterious effects of TSM on work and the workers. Much earlier, Hoxie (1916) and Gramsci (1971[1934]) too had specifically critiqued TSM and its effects. In a highly prescient observation, Hoxie (1916) stated that the negative effects of TSM were not going to be limited to manufacturing workers as it had been designed to do.

This time and motion study analysis will extend, it is thus claimed, to every feature and all organic relationships of the mechanical process of production. But it will not stop there. It will be extended to cover the managerial functions and office work. (Hoxie 1916: 841)

Hoxie foresaw the wide-ranging possibilities of TSM and expected its principles to be extended to other forms of work, such as white collar work and possibly even to managers themselves. Similarly, Gramsci (1934: 304) critiques the nature of TSM and observes that the principles laid out in TSM –

...[develop] in the worker to the highest degree automatic and mechanical attitudes, breaking up the old psycho-physical nexus of qualified professional work, which demands a certain active participation of intelligence, fantasy and initiative on the part of the worker, and reducing productive operations exclusively to the mechanical, physical aspect.

In a classic illustration on the separation of conception and execution of mental work, Braverman argued that Charles Babbage's (1832) conceptualisation of the theoretical difference engine — that reduced mathematical calculations to the simple pulling of levers — could also be viewed in a different light, as an example of an attempt to reduce the skill required to carry out 'mental work' (Braverman 1999: 219). Babbage's analytical engine then is not only one of the landmark inventions of modern computing but can also be viewed as one of the formative attempts to simplify 'mental work'. Two divergent ways of looking at this simplification of mental work have emerged over time. One, as imagined by Babbage in the early 19<sup>th</sup> century, was that it is an exercise to free up the time of those involved in doing 'mental work', so that they could re-allocate their time to indulge in more meaningful work. And a second, a critical way of looking at it was that this idea, of simplifying mental labour, was being utilised not to free up time of the highly skilled, but to target workers and strip their work of skill or knowledge thus contributing to their alienation from the work. This dichotomy in the two ways of interpreting deskilling, and subsequently automation, has ostensibly still not disappeared with the former strand still believing, somewhat like Keynes (1930, that there would come a time in the future where

humans would be able to work minimally, and spend most of their time in personal pursuits.

Braverman's idea of deskilling was influential in providing a springboard to develop an understanding that there were underlying changes occurring to different types of work and that the actual execution of work needed to be scrutinised closely. Admittedly, these ideas were not without its flaws, and criticisms of these ideas pointed out that capitalist and managerial 'control' practices were manifested in more ways than just TSM or a simple breaking down of labour processes. These criticisms have led to further insights and advancements, and Thompson and Newsome (2004) broadly classify the evolution of these ideas as a series of four 'waves', reflecting the changes to this understanding over time. Here, it is useful to briefly sketch a stylised evolution of these ideas in order to understand some of the directions taken in the subsequent discussions.

The initial ideas of Braverman (1974) viewed control over work being extended by employers mainly through the implementation of TSM-based strategies. However, these ideas fail to explain the entire range of managerial strategies and do not account for the workers' role (Knights and Wilmott 1990). As a result, the understanding of managerial control has expanded to show how managerial practices are not just limited to a Taylorist deskilling. It is now well understood that capitalist and management control over production comprises of a range of different strategies to control work and the workers (Burawoy 1979; Edwards 1979; Friedman 1977; Littler and Salaman 1982). This can also extend to aspects relating to the control over the workers' subjectivity, agency and identity within the labour process (Alvesson and Willmott 2002; Knights and Morgan 1991). Here, by placing the focus on managerial strategies, it has been possible to isolate and understand the notion of management's need for control over the capitalist production process and therefore, it's 'control imperative' (Smith 2016: 207; Thompson and Newsome 2004, Thompson and Smith 2010).

### **2.3.2**

#### **The Many Sides of Managerial Control**



The discussions in the previous sections have indicated a generalised notion of the need for managements to maintain control over the production and labour process. Capitalist pressures require managements to continually seek out ways to extend their control over the conflict that naturally arises due to their need to utilise labour power, embodied in physical people, in the production process (Thompson 1989). Workers and labour, by their very presence in the production process, are an input that is not under management control in the same way that other commodity inputs are. Systems of structural control are put in place by employers and managers in order to consolidate control over the labour process while simultaneously trying to ameliorate the conflicts that arise (Edwards 1979).

Over time, the concept of managerial control has been interpreted in several ways (Burawoy 1985; Storey 1985a). The wide range of interpretations that have arisen of the term *control*, has meant that the idea of management control has often obscured more than it has revealed (Burawoy 1985: 26). This study utilises Edwards' (1979) conceptualisations of managerial controls in order to build its analytical framework. At the basic level, Edwards defines control as the "ability of managers/capitalists to obtain the desired work behaviour from workers" (1979: 17). Edwards saw the managerial need to achieve greater control over the labour process resulting in a "contestation" between the employers and the workers. Relying on a historical evolutionary analysis of managerial strategies, Edwards viewed strategies such as TSM as being one part of the many ways by which managements attempt to increase their control over the production processes and the workers. Where Braverman (1974) viewed the disintegration of the labour process using TSM as the cornerstone of managerial control, Edwards extended these ideas and pointed out that managerial control strategies have evolved over time, growing in range and complexity.

Within such an understanding, managerial control systems are comprised of three basic constituent elements: the 'pace and direction of work', how the 'evaluation of work' is carried out, and lastly, how systems of 'disciplining through reward and punishment' are set up within the organisation (Edwards 1979: 100). These different elements coalesce into control systems that are embedded within the structure of the firm, thus transforming them into structural forms of control (ibid: 20). In actual practice, these control systems are manifested in two major ways. The first largely revolves around the rules embodied in the technical details of the production process itself. These include elements such as the

pace with which the work should be carried out, the direction in which production takes place, its quality, the quantity of output etcetera. These rules are usually embedded within the technological structure of the firm and are collectively called 'Technical Controls'. The second type of structural control is viewed to be embedded within the social relations of the workplace. This includes rules regarding employment, promotions, rewards, punishments and so on. These aspects lie within the social organisation of the firm and are called as systems of 'Bureaucratic Controls' (ibid: 110). While these controls may appear to manifest in the form of neutral, objective rules that are applicable to everyone in a workplace, the formation of these rules is very much in the realm of the 'social' (ibid: 112, Hoxie 1916: 844). By rendering their formation invisible or incomprehensible, such structural controls obfuscate the true source and nature of managerial controls, thus moving beyond the forms of direct and simple controls that used to exist historically (Edwards 1979: 145). While this framework proves to be a highly useful for analysing managerial controls, it is seen to be overly deterministic and suffering from a 'panacea fallacy' (Littler and Salaman 1982; Thompson 1989: 145). Managements pursue a whole range of control strategies, and these can often be a combination of technical and bureaucratic controls (Callaghan and Thompson 2001; Littler and Salaman 1982; Thompson 1989: 149). While such criticisms might be overly harsh for what is a framework that essentially develops out of the observation of the continuous and evolving nature of conflict between employers and workers, the study remains cognisant of its known drawbacks.

Moving away entirely from a control-resistance framework, managements can also be viewed to actively seek to move away from conflict and coercion towards a system that is based on the inculcation of co-operation and consent (Burawoy 1979) or the provision of some degree of autonomy for the workers (Friedman 1977). Managerial controls can manifest in work in several other ways as well. Studies have shown normative forms of managerial control where workers' behavioural aspects (and therefore their approach towards work) are sought to be controlled (Fournier 1999; and for Indian call centres see Noronha and D'Cruz 2009). Such strategies often rely on socio-psychological elements, where production discipline is often enforced using Foucauldian strategies that are reminiscent of ideas of Bentham's 'panopticon' and notions about the exercise of power (refer Foucault 1977 cited in Burrell 1988). However, the fundamental antagonism embedded within the production relations does not disappear and while conflicts may arise

occasionally, they are largely characterised by a structured antagonism (Edwards 1990). However, the different types of managerial controls are seen to operate in conjunction with various technical and bureaucratic controls and seldom supersede these basic forms of control (Taylor and Bain 2007). Critiques of Edwards' conceptualisations notwithstanding, the analytical categories of technical and bureaucratic controls provide a robust and broad framework to examine a very wide range of managerial control strategies (Callaghan and Thompson 2001). The many different types of management control strategies are often built around these two forms of managerial controls (Taylor and Bain 2007). Moreover, the relatively loose over-arching framework of technical and bureaucratic controls allows for some degree of flexibility in incorporating varied management controls. All of these make it a solid and relevant framework to analyse managerial controls in ITS work.

## **2.4**

### **The Control of Work within the IT industry**

As discussed earlier in section 2.1, the economic transition to services and the accompanying shifts were not just experienced in developed industrial nations alone but also spread to countries at varying levels of development due to the internationalisation of such work. Early conceptions about services work as being 'better' than industrial work were belied as successive studies over time showed the presence of the same Fordist and Taylorist practices that had been characteristic of industrial manufacturing work (Thompson et al. 2001, Warhurst et al. 2008). In several types of services work too, workers are only required to contribute minimally with little inventiveness to carry out their work. The clearest examples of this were observed in examinations of work in services industries such as fast food where work processes had become fragmented and standardised to such an extent that there was very little or almost no autonomy for the services workers (Leidner 1993; Ritzer 1998); the work itself had been largely stripped of skill, thus running counter to the idea that services work could possibly offer workers with greater autonomy and flexibility. Similarly, the use of Taylorist and industrial engineering ideas also influenced the IT services industry in several important ways. The Indian IT industry is broadly divided into three core segments: Call centre/BPO services, IT-enabled Services (ITS or ITeS) and Software services. While the exact definitions and constituents

of ITS work are described in detail in Chapter 4, the following sub-sections will examine how managerial controls are understood to operate in these three segments of the IT industry.

#### **2.4.1**

##### **The Control of Work in Call Centres**

The call centre industry presented an example of a relatively newer form of services that arose from the reorganisation of customer support services and was considered to be an industry that was characteristic of the economic transition to services (Taylor and Bain 1999; Callaghan and Thompson 2001). With its subsequent outsourcing and offshoring, it was also characterised by a high degree of internationalisation and globalisation (Batt et al. 2009; Holman et al. 2007). Once such work is offshored, the work output is usually governed by tight conditional contracts and Service Level Agreements (SLAs) that are signed between the managements of ‘source’ organisation and the ‘destination’ IT firms (Noronha and D'Cruz 2006; Remesh 2004).

Studies that foregrounded the analysis of the labour process in call centres found that the dynamics of control observed in the assembly lines in manufacturing industries were largely replicated in this type of services work, albeit in a ‘mental’ form (Holman et al. 2007; Taylor and Bain 1999). Far from presenting the worker with any liberation from the tedium of industrial manufacturing, the nature and extent of standardisation and routinisation in this type of service work made it resemble more like “assembly lines in the head” (Taylor and Bain 1999). A continuous manufacturing assembly line was somewhat replicated within call centres through Automatic Call Distribution (ACD) or predictive and automated dialling systems; and the monitoring of workers carried out through a slew of different types of technologies (Bain et al. 2002; Frenkel et al. 1995; Noronha and D'Cruz 2009). Other measures that reduced worker autonomy and flexibilities in the call centre included a high degree of standardisation in the phrases to be used by the call centre workers, the continuous monitoring and surveillance of the work and the use of stringent performance related metrics (Taylor and Bain 2005; Howcroft and Richardson 2012).

Studies have documented the extensive use of surveillance technology and monitoring (Ferne and Metcalfe 1998) though the extent and scope of their influence is debated (see Taylor and Bain 1999: 103). The conception in this scholarship that that Foucauldian power is exercised through monitoring and surveillance of work appear to present some parallels with Edwards's conceptualisation of managerial controls. For example, several work-related elements of Foucauldian controls regarding punishment and rewards are closely related to similar systems within bureaucratic controls even though they were developed along their own lines of logic. In their critical review of empirical work on call centres, Taylor and Bain (2007) point out the difficulties in applying Foucauldian concepts to understanding control in such forms of work, mainly due to the centrality placed on such ideas (such as the panopticon) as the primary source of control.

Call centres can exert control over their workers through several means including, but not restricted to, time and motion control, incentives, rewards and promotions, socialisation etcetera, which necessitates an incorporation of these aspects of control as well. Studies that uncover these varied forms of control in modern workplaces tend to largely agree that such methods of control are used in conjunction with elements of technical and bureaucratic controls (Callaghan and Thompson 2001). Several studies build upon existing ideas of technical and bureaucratic controls by adding their own additional elements to the ways by which managements exert control over the production of such services (for examples, see Frenkel et al. 1995, Sewell 1998 and Noronha and D'Cruz 2009). Newer forms of control (such as info-normative control, shown by Frenkel et al. 1995) have emerged with the digitalisation of technical and bureaucratic elements of control by utilising modern ICT technologies, giving managers real-time information on the workers' performance thus supplanting the need to directly watch and supervise them. Studies that have utilised Edwards' conceptualisations of structural controls show how its elements do not really exist in isolation but are often combined in different ways in order to generate more comprehensive forms of control (see for example, Callaghan and Thompson 2001).

As discussed earlier in section 2.2, there has been some debate on whether call centre work could indeed be classified as a form of 'knowledge work' and how similar it is to other types of 'knowledge work'. By comparison, the other segments of the IT industry — i.e. software and ITS work — are considered to be distinctly highly knowledge intensive in the

content of their work (Flecker and Meil 2010). And so, the question that naturally arises is whether the dynamics that are seen in the services industries and the IT industry's call centres are replicated across the other segments of the industry; ones that involve more knowledge intensive forms of work.

#### **2.4.2**

##### **The Control of Software and IT Services Work**

Having reviewed the control of work in the call centres, the discussion will now move on to work in other segments of the IT industry, such as IT Services (ITS) and Software sectors. The monolithic generalised characterisations of work in the IT industry often miss the widely varying forms of work that it is comprised of (Beirne et al. 1998). ITS and Software services, along with call centres, represent three major sectoral sub-divisions of IT work and they typified new knowledge-work jobs in the post-industrial knowledge economy (Feuerstein 2013: 25). If the call centre industry grew out of the reorganisation and consolidation of various support services, the growth of IT Services (ITS) and software services too grew by leveraging similar benefits of scale by consolidating the production of such services (Beirne et al. 1998; Friedman and Cornford 1989; Huws 2014). IT firms in India grew by latching onto the economies of scale that came about through the consolidation of individual IT departments in different locations. Within this, ITS work was central to the growth of the Indian IT industry and formed one of its largest sub-segments (NASSCOM 2014).

Software and ITS occupations constituted new forms of work where the workers were highly knowledgeable, often more educated and skilled than their managers, and so represented a more distinct shift from the traditional industrial worker (Cusumano 1991; Kraft 1979; Stinchcombe and Heimer 1998). Therefore, managing these types of workers was identified by management theorists as one of the defining challenges for managements in the emerging services sectors (Drucker 1999). Though the IT industry really expanded in prominence and size from the 1990s onwards, its evolution had been taking place over a longer period of time. The work done by computer engineers was not alien to Braverman who, even as early as the 1970s, documented an ongoing specialisation and division of labour within IT work. This was viewed as leading to a cleavage within the profession,

giving rise to a specialist programmer and a separate specialist ITS worker (whom he called ‘system analysts’).

[T]he upper level of the computer hierarchy is occupied by the systems analyst and the programmer. The systems analyst is the office equivalent of the industrial engineer, and it is his or her job to develop a comprehensive view of the processing of data in the office and to work out a machine system which will satisfy the processing requirements. The programmer converts this system into a set of instructions for the computer. In early computer installations, the programmer was generally a systems analyst as well, and combined the two functions of devising and writing the system. But with the encroachment of the division of labor, these functions were increasingly separated as it became clear that a great deal of the work of programming was routine and could be delegated to cheaper employees. (Braverman 1999 [1974]: 227)

These early observations give us some insight into the manner in which the profession was already changing. Despite the early optimistic prognostications of freedom and autonomy of knowledge work, a host of managerial control strategies revolving around the labour process have permeated into these forms of work as well (Kraft and Dubnoff 1986; Sewell 2005). Even within the still-evolving field of software development-related work, a profound deskilling was occurring, and this was happening through a combination of Tayloristic task fragmentation and routinisation (Greenbaum 1999; Huws 2003; Ilavarasan 2008; Kraft and Dubnoff 1986; Prasad 1998). The work was being standardised through fixed processes of software production and IT service provision, utilising methods such as the waterfall model, Agile or ITIL process workflows, all of which led the work to being increasingly codified, fragmented, modularised and standardised (Flecker et al. 2013; Hislop 2013; Upadhy 2009). The constant attempts to standardise the software production process led to observations that such work has been –

.... subject to a process of intellectual industrial engineering, a scientific management of mind work. In every important respect these techniques are identical to those applied in the production of cars and cornflakes. (Kraft and Dubnoff 1986: 194)

For example, one of the most visible attempts by Indian IT firms to standardise the processes by which such work was carried out was in their endeavour to seek and obtain ISO or CMM industrial standards for their software production processes (Balakrishnan 2006). Though this was motivated in large part to create a degree of credibility and give confidence to clients who were offshoring their IT operations to far-away locations such as India, there would be little doubt that such standardisations also led to significant reductions in the skills required to carry out the work and autonomy of the worker within the system (Beirne et al. 1998: 149).

When we examine ITS work specifically, which is the subject of this study, it is generally considered to be relatively high in terms of the knowledge and skill it requires and also characterised by a high degree of heterogeneity due to which it is considered to be less susceptible to Taylorisation and deskilling (Abbott 1988; Dossani and Kenney 2007; Flecker and Meil 2010). Here, it must be pointed out that though a large portion of ITS work is often carried out by specialist IT firms, around half of such workers are embedded within various organisations across a broad range of industries (Huws 2014: 16). However, in consolidated, capitalist IT firms, varied managerial strategies can be deployed in order to achieve the control over the work. At the outset, it is understood that even before any organisation outsources/offshores such work, there is a need to achieve a degree of codification and standardisation, so as to have clear measurable and service delivery requirements (Flecker and Meil 2010: 681; Huws and Dahlmann 2009). Therefore, not only does the initial drive to offshore ITS work then create a momentum to increase the standardisation of the way work is organised, but once the work is offshored then fresh pressures on the 'destination' IT firm lead to a further deepening of the formalisation, standardisation, integration and modularisation of the work (Flecker and Meil 2010: 694; Flecker et al. 2013). In an altogether different argument, albeit one that led to similar conclusions, the development of new technologies within programming itself could also be seen to impact its work. For instance, the continuous evolution of ever-simpler programming languages (also known as High Level Languages or HLLs) could itself be seen to contribute to a type of deskilling (Kraft 1979). The newer programming languages over-simplified programming guided by the motivation to make it more accessible, that is, even to those without specialist coding or technical computer knowledge.



Overall, such observations, about the standardisation and fragmentation of the IT production processes, have belied beliefs that forms of post-Fordist knowledge work are immune to deskilling or Taylorist management practices (as argued by Abbott 1988 and Aspray et al. 2006). Managements deploy a range of different strategies, including those that resemble TSM in parts, to control such work and workers. Additional and different pressures also originate from offshoring and outsourcing relationships where lead or ‘source’ organisations exert pressures on the offshored ‘destination’ IT firms resulting in local managements to search for newer means to increase control over the work and ensure the continued extraction of profits from it (Feuerstein 2013: 35). The methods used by managements to control the workers can also shaped by the type of IT projects within the same firm (Barrett 2004). In the case of India, several unique characteristics of the local labour market — such as high labour supply and the high turnover of skilled IT workers — both of which are fairly unique to the Indian IT industry, give rise to a localised control strategies by managements which are tailor-made for the local context (Feuerstein 2013: 30). It is useful to bear in mind then that managerial control strategies can be shaped by factors outside of the workplace such as outsourcing and offshoring relationships, local labour markets and requires a consideration of such factors when analysing the labour process (Jonas 1996; Hammer and Riisgaard 2015). Changes in regulation, organisational restructuring and capital dynamics also affect the labour processes of workplaces that are transnationally connected (Smith and Meiskins 1995; Taylor 2010: 252; Thompson 2013); this is particularly relevant to and true of the Indian IT industry as this thesis will also attest.

## 2.5

### **The Labour Process, Managerial controls and Production Politics**

An understanding of how the state or specific local institutions shape and affect the labour process (and therefore impact managerial controls) is discussed in this section.

Connections between managerial strategies and production politics, and how these influence the organisation of work and labour processes, are also discussed. In the previous sections, we explored the different types of managerial control strategies that are known to be deployed to control the labour processes in the IT services industry. What is

less clear within these discussions is whether and how various managerial controls and labour processes are linked to wider social and production relations (Smith and Thompson 1998; Thompson and Vincent 2010: 56).

Understanding such aspects have tended to gravitate towards generalisations of the organisation of international production, the movements of capital or a generalised role of the state in the economy. The state plays some role in facilitating capital accumulation and the organisation of production (Jessop 1990b). The state's role could be perceived in facilitating the supply and demand logic that underpinned Fordist production (Littler 1985: 14), in the organisation of various types of welfare regimes (Esping-Andersen 1990) or in the various combinations of regulatory regimes that states may adopt (Burawoy 1985). The French regulationist school provides significant direction to coherently understand the role of the state through their detailed characterisations of the forms of state co-ordination across the various 'circuits' of capital (refer Aglietta 1979; Lipietz 1988). Here, state regulation is especially seen to be central to the manner in which an entire range of socio-economic relations are modified giving rise to new economic and non-economic mechanisms that serve to facilitate capitalist production. Similar currents of over-arching logic runs across a wide spectrum of economic decisions taken by the state in the Varieties of Capitalism framework, where it can take distinctly 'liberal' or 'coordinated' approach to organising and production in the economy (Hall and Soskice 2001). Generally, such over-arching characterisations of the organisation of production in a country stems from the view that the state has an interest in stable macroeconomic conditions, primarily motivated by the attainment of low levels of unemployment, a low level of inflation and the facilitation of the production of goods and services. The state attempts to shape both the relations between capital and labour with the intention to create economic equilibria in the sphere of production while maintaining steady prices and inflation, and also trying to ensure some degree of economic expansion (Jessop 1990b: 158). In such frameworks, the intensification and modification of work, through changes to the labour process, constitutes an 'intensive regime' of accumulation, while the expansion and deepening of markets is part of an 'extensive regime' (Jessop 1990b).

Whatever be the form of capitalist production that is adopted, the question of the manner of local labour regulation remains an open one for states. The approach of states can vary

from devolving much of their responsibility in regulating markets, such as that seen in liberal market economies leading to the creation of *market despotic* regimes or, in its opposite form, being heavily involved in the formation and functioning of the labour market thus creating *hegemonic* regimes (Burawoy 1985). The choice of approaches leads to widely varying forms of regulation and interventions from the state, and this gives rise to and results in certain forms of politics, both at the point of production and wider class politics (ibid). Overall, there would be little doubt that the state plays some role in the organisation of economic activity and mediation of capital-labour relations even when it decides to intervene minimally (such as in liberal market economies). By extension then, the state potentially impacts and shapes how employment relationships are structured within the economy. Such connections may appear less evident in the analysis of the labour process per se, even though it is acknowledged in labour process literature that the state can have some impact on work organisation and production relations (Edwards 1979: 65; Thompson and Newsome 2004).

Generally, what all these varied framework highlight is that the state can play a significant role in production and labour-related relations; the fact that work relations are, to varying degrees and in manners direct or indirect, governed by the state implies that the labour process may/could indeed be shaped/effected by the nature and scope of this (Littler 1990: 67; Vidal and Hauptmeier 2014). However, an examination of the state or the role of the state in production is complicated by the large number of constituent parts that regulate various aspects of social life. Consequently, any analysis of the state can become complex due to the various facets of the state as well as its complex linkages to wider social relations (Jessop 1996).

Arguments in favour of a 'relative autonomy' of the labour process in its analysis (Edwards 1990) can then be applicable only in a limited sense, and largely for empirical purposes. But, this would mean divorcing the analyses of labour processes from the realities of labour regulation and, more broadly, from a wider politics around production (Thompson 1990). Conceding such a 'relative autonomy' would require taking a narrower, isolated and technical view of the labour process. And so this thesis tends towards or adopts an analytical approach to the labour process that visualises it as "...a complex economic,

political and intellectual division of labour in which the constitutive effects of the state [are] always present (Poulantzas cited in Jessop 2007: 119).

In more specific terms, national-institutional factors that regulate work and employment relations have the power to shape the manner in which work is organised and how managerial controls are exercised (Burawoy 1985; Littler 1990). The analysis of such institutions and their effect on labour processes is an area that offers significant scope for theoretical advancement (Thompson 1990: 113; Thompson 2003; Vidal and Hauptmeier 2014). In broader theoretical terms, there is a general lack of clarity about drawing connections between labour processes and the broader socio-economic phenomena within which they are enmeshed (Elger 2001; Jaros 2010; Thompson 2013). Much of any country's employment relationships — including, but not limited to, aspects of collective bargaining, job security, wage systems — are shaped and governed by its specific national institutions and these can lend to shape the manner in which work is organised (Burawoy 1985; Littler 1990; Vidal 2011). As a result, the state and individual national labour institutions are key mediators of much of the changes that affect work and workplaces (Elger and Smith 2005). The implementation of various types of labour regulations can have profound changes in the way that production is organised, affecting not just conditions of employment and work but also the nature of managerial controls (Burawoy 1983: 589-90; Storey 1980). This understanding informs this thesis' analytical thrust to examine of labour institutions and regulations with the objective to explore how they connect with managerial controls, especially Edwards' conceptualisations of bureaucratic managerial controls.

These linkages are seen to form only one of the many possible 'boundaries' and 'connections' that labour processes have with wider socio-economic phenomena. Where the specificities of such connections have sometimes been lost in trying to build a generalised understanding of the numerous boundaries and connections that are possible, such a complication is avoided or at least ameliorated in this study, by reducing the universe of relations that are to be examined, when referring to the state, to those that concern the immediate governance and regulation of the employment relationship. It is here — in the attempt to study the structures of the state that affect work — that the study takes a specific theoretical turn in order to analyse the production relations within which

labour processes are embedded. Work and labour, or the act of production itself, is viewed to be comprised of three overlapping dimensions: the economic, the political and the ideological (Burawoy 1985: 39). The focus of this study, then is on the political aspects of the rules that govern production. These aspects are borne out of the conflicts, antagonisms and contestations between the workers and employers, and are referred to as 'production politics', differentiating it from other social or ideological politics at the point of production (Burawoy 1985). It is these production politics that determine the shape and structure of the production relations within an organisation. These not only include the relations within workplaces but also broader work and employment relations that are determined politically. This study then attempts to examine the relationship of production politics that shape work itself, and if/whether and how these affect managerial controls in ITS work in India.

The examination attempts to build a foundational understanding of the effects of formal institutions such labour laws, labour related policies and regulations that constitute and shape production politics; and how they can affect managerial controls and labour processes. There are several other aspects to the state, as well as wider social relations (such as gender, race, caste, communities and family) and labour market segmentations that can affect production, but these are excluded in this analysis, even though they are not considered to be inconsequential. This is primarily done due to the practical considerations of this empirical study and to reduce the analytical complexity of the project. The analysis involves a detailed study of codified, known and formal rules and regulations that govern the employment relationship, and the formal and informal norms that are related to this. Once again, this is done in order to clearly analyse and understand the relationships between (labour) regulatory institutions and managerial controls. Other effects of broader social relations and aspects of the state are still considered to be influential factors in the organisation of work, and ones that can be pursued in the future (discussed in more detail in the concluding chapter), but are beyond the scope and remit of this current study and are therefore not examined in detail.

### **2.5.1**

#### **Contestations over Control and the Nature of Labour Regulation**

An early criticism of labour process-based analyses was its neglect of the role of the worker and therefore of the absence of a dialectic of conflict and contestation between the workers and employers and managements (Braverman 1999: 311). This omission made a TSM-based understanding of managerial control ostensibly overly deterministic, monist and unidirectional, where little or no role was attributed to the role of workers' resistance (Knights and Wilmott 1990; Littler and Salaman 1982; Thompson 1989). This aspect of criticism was addressed in later studies, especially by Edwards (1979) and Burawoy (1979) who pointed out that contrary to the perception of the workplace as a site dominated by managerial control, it was regularly beset with contestations between the management and workers; this pushed managements to constantly look for ever-newer forms of control and co-operation. A key difference, however, between the approaches was in their understanding of the connections with wider social relations: where Edwards saw labour processes as being affected by wider factors (for example, through labour market segmentations), Burawoy saw the workplace and attendant labour processes as being 'relatively autonomous' as discussed in the previous section. Burawoy's position, of the autonomy of the workplace (though this was addressed/corrected later in Burawoy (1985), was seen to be deficient in that it erroneously distanced the workplace from wider social connections (Thompson and Newsome 2004: 143).

These contestations between capital and workers at workplaces have historically had implications beyond the workplace. The scale and nature of worker resistance over time forced many types of accommodating changes to managerial controls within the broader organisation of industrial capitalism itself (Edwards 1979; Friedman 1977). Such changes, which profoundly impact the very form of capitalism, were achieved largely through collective organisations, trade-unions or through direct interventions from the state (Storey 1980, 1983). Workers organisations, trade-unions and collective bargaining practices are well known to have traditionally possessed the ability to impact aspects of wages, working hours and working conditions. Variations and differences in these practices or prevalence of such institutions in different locations within the same firm or within the same industry can result in entirely different forms of labour processes and work organisation (Kahn 1975, cited in Edwards 1979: 171-2). Labour institutions can indeed shape not just aspects of but also changes in the labour process: Vidal and Hauptmeier (2014: 19) argue that it is entirely possible that "deskilling might be a common management control strategy but in countries with a national training regime co-governed by labour unions, deskilling is much

less feasible”. This divergence is exemplified in a comparative study on call centres in various countries which finds different labour institutions leading to distinctly different labour processes and work organisation: the presence of stronger institutional collective bargaining in Germany playing a significant role in empowering workers to limit managerial control strategies related to monitoring and disciplining, while weaker institutional collective bargaining in the United States leading to unchecked expansions in these very same forms of control (Doellgast 2010). Cognisant of this, managements are found to experiment with different control strategies in order to ensure that the influence of worker’s organisations remains limited (Vidal and Hauptmeier 2014: 13). Resistance is seen to nominally emanate from the workers, trade unions and other allied sources, but their challenges to managements may also be channelled through the state, especially through labour laws and regulations (Storey 1980 and 1985b; Littler 1990). This is truer of countries where worker protections have traditionally been sought through legislative means. Indeed then, among other factors such as labour cost arbitrage, trends of internationalisations and globalisation of production were at least partly motivated by the fact that some geographies presented either weaker forms of worker collectivisation or pliable states, which together mitigate several of the challenges that managements typically face where either of these are stronger (Edwards 1979: 180; Feuerstein 2013; Noronha and D’Cruz 2009: 44; Noronha and D’Cruz 2016). It is not that local workers or governments in ‘destination’ countries cannot counter or pose challenges to managerial control/strategies either through collective action or through labour regulation; but in doing so, they would have to deal with dilemma of the very same mobility of capital that relocated it there in the first place (Doellgast and Greer, 2007; Harvey 2001).

In scholarship, both in the realm of the empirical and the theoretical, there is insufficient clarity on whether and how labour institutions such as labour laws and labour regulations actually affect labour processes. This is a significant shortcoming.

[L]abour process theory has not advanced a systematic understanding of how institutions structure and affect workplace dynamics and employment relations.  
(Vidal and Hauptmeier 2014: 18)

Indeed there is wide consensus that national labour institutions — especially those linked to collective bargaining, unionisation or works councils — have important consequences on or are capable of shaping the way work is carried out (Littler 1990, Thompson and Newsome 2004: 152). Studies that incorporate and combine an understanding of how labour regulation affects work processes and managerial controls have been few and far in between (Meardi et al. 2016; Thompson and Newsome 2004; Vidal and Hauptmeier 2014). Labour regulations have traditionally put “beneficial constraints” on employers (Streeck 1997) and force managements to adopt better employment practices. Legal scholars have approached labour laws and labour regulations as largely serving a “protective function” for the workers (Dukes 2014). This thesis is an attempt to address this analytical gap in research by examining some of the connections between labour regulation and the labour process.

Edwards (1979: 22) emphasises that worker driven labour regulations have “....steadily expanded the role of government and pushed it to impose increasingly costly limitations on business”. A possible way to practically analyse the influence of labour regulations on the labour process is to examine their relationships with managerial controls (Storey 1985b). Though structural controls — such as technical and bureaucratic control — significantly shifted the balance in favour of management and capitalists, it also shifted conflict with workers to the policy arena (ibid: 200). As a result of this, the working classes have “...looked instead to government to regulate, protect, and provide” (ibid: 161). It is in the exploring the limiting of managerial controls that the effects of the State become more obvious.

One could expand almost indefinitely the list of governmental regulation and restriction of workplace and production decisions. In all these ways, governmental regulations encroach upon or replace the bureaucratic rules that were initially imposed unilaterally by corporations. Many observers have noted the corporations' "appropriation of public power for private use," by which is meant the continuing and successful demands of the corporations for public policy to serve their interests; what is not so frequently recognized is that there is a parallel working-class appropriation of public power for private use, especially as a way of altering the rules under which bureaucratic control operates. (Edwards 1979: 162)



This seldom explored line of logic argues that managerial and capitalist controls, that determine the organisation of work, can often be influenced by institutions of labour regulations manifested through the state, and where this happens most clearly is in the context of bureaucratic managerial controls. Therefore, in a manner that mirrors workplace conflict, labour-regulatory institutions too are contested, thus showing the workers to be autonomous agents within the capitalist production system who can be capable of influencing not only the workplace, but also the state and its related policies (Jessop 1990a). Labour institutions, such as those related to workers' welfare, can then be seen to have been built through significant initiative and contributions from workers, and thus cannot be easily characterised as capitalist attempts to regulate workers (Esping-Andersen 1990; Jessop 2007). An elementary example of these would be labour laws such as those governing working hours. Even regulations that pertain to managing industrial disputes contain clear elements where the state looks to regulate the actions of both workers as well as the employers (Dukes 2014). Labour laws and regulations can thus be seen as a site of 'contestation' which offers ways for employers to control workers, but at the same time one which also offers the workers the ability to negotiate with or control employers as well. Workers cannot then be seen as passive agents within such systems, but are active in the building of regulatory institutions related to employment and have the capacity to change them in different ways (Streeck and Thelen 2005).

The implementation of state-level labour regulations, that govern employment relations in every workplace, have to be translated and integrated into the workplace and managerial controls in various ways. While firms may indeed design their own "rule of law - the firm's law" (Edwards 1979: 21), these same firm-level rules still have to remain within the bounds of the legal-institutional framework. In other words, managements cannot formulate techno-bureaucratic rules for their workplace as per their requirements or whims. Formal, registered firms and their managements still need to follow relevant regulations regarding various aspects of work or employment, and cannot trespass the boundaries that are set up as a part of regulatory institutions without the threat of punitive action (ibid: 162). All workplaces and work within the formal, regulated sectors are thus guided to some extent by the rules and regulations that have been constituted for them (Elger and Smith 2005). Though this most obviously covers regulations around working hours, overtime, leaves, holidays etcetera — it also includes rules related to bureaucratic elements such as

rewards/bonuses, punishments/dismissals, discrimination and so on. The over-arching legal regulations around labour are then translated down to the level of every workplace through the means of HR rules for workplace practices; this is done in a manner that laws and regulations are adhered to. It is these translated HR rules that are then made familiar to the workers as the 'rules of the workplace'. While firms and managements may indeed make their own rules for the workplace, manifested in the form of various structural controls, these workplace rules would not be of a nature that transgresses those of the existing regulatory institutions. In other words, the flexibilities of forming the management's own rules go only as far as the regulations allow. It is pertinent to note then that management practices are very much constrained by and cannot be separated from the regulatory practices that are prevalent. It can therefore be argued that workplace rules and regulations (or bureaucratic controls) that guide the work and employment relationships are all inextricably linked to and shaped by the nature of existing regulations (and importantly, their enforcement).

Proceeding with such a reasoning, this study attempts to combine the study of the labour processes in the Indian IT industry with an analysis of the relationship between labour regulations and managerial controls. This is seen to have the potential to provide some connections for a clearer understanding of the ways by which labour regulations guide structural managerial controls, especially bureaucratic controls, and subsequently labour processes. Even though regulatory processes may appear to operate outside the workplace, its effects should not be underestimated; its impacts are understood to impact in every individual management-worker relationship, while also being embedded into the structure of workplace controls. Each workplace can therefore be visualised as being located within a network of its own labour regulations. Details of how the analysis of such aspects have been deployed practically and how inter-connections have been made are discussed in further detail in Chapter 3, related to the methodology of the study.

### **2.5.2**

#### **The Indian IT Industry and Labour Regulation**

Studies of the Indian IT industry have shown the presence of a wide range of managerial controls being deployed to control such work and its workers (see for example Taylor and

Bain 1999; Noronha and D'Cruz 2009; Upadhyaya and Vasavi 2012). However, such studies have seldom examined the role of regulation in the functioning of the IT industry (Penfold 2009). This, to an extent, owes to some genuine confusions regarding the extent of labour regulation in the Indian IT industry (Noronha and D'Cruz 2009: 44-5). While these aspects would be addressed later in chapter 4, there is little doubt that the strategic importance of the Indian IT industry, the power devolved to local States and the promotion of competitive federalism under neoliberal policies have all meant that the state has arguably played a crucial role in facilitating the growth and functioning of the Indian IT industry (Balakrishnan 2006; D'Costa 2011; Noronha and D'Cruz 2016). Though much attention of state intervention has been focused on its incentives in non-labour aspects such as taxes, land and infrastructure, such incentivisation measures have usually included those related to labour as well. Economic zones — such as the Special Economic Zones (SEZs) and Software Technology Parks of India (STPI) — were created to explicitly provide semi-autonomous zones within the country where a whole host of incentives that were not available in rest of the country were provided, significant among them being a minimal level of labour regulation and enforcement (Murayama and Yokota 2009). Even outside these zones, the Indian IT industry at large has been accorded a privileged status and received several exemptions, not only from specific clauses within labour laws but also from the entire labour laws and regulations regimes (Noronha and D'Cruz 2016; Penfold 2009). As a result, the Indian state is widely perceived to follow a policy of “light-touch” regulation for the Indian IT industry (Parthasarathy 2004). While indeed many of these incentives — including both piece-meal measures and policies — were custom-made for the IT sector, it must be noted that the IT industry is not *entirely* unique in receiving such treatment; the dilution of labour regulations for the benefit of the Indian IT sector is seen to occur within the context of a broader decline in the institutional frameworks of labour laws and regulations (Deakin et al. 2014).

Production of goods and services within the Indian economy occurs within a dense network of varied social and production relations. This is because there are several forms of pre-capitalist social and production relations existing alongside capitalist ones (Pattenden 2016). At the outset, given the primary focus of the study is the Indian IT industry — which is largely formal in nature — its social organisation has fewer non-capitalist and informal relationships and so its work is largely governed by the relevant labour regulations (Noronha and D'Cruz 2016). A practical analysis of labour regulations is

complicated by the fact that legislation in India is federally devolved and concurrent, meaning that both the central and local State governments have powers to legislate and modify labour laws and regulations. The exact details of the labour regulations and labour laws applicable are discussed in greater detail later, in chapter 4, which discusses the context of the Indian IT industry. The effects of such regulatory mechanisms on managerial practices in the Indian IT industry remains an area that requires to be linked and understood; this forms one of the key areas tackled in this study.

Any analysis of the effects of labour regulations on managerial controls also requires a consideration of the manifold specificities of the Indian labour market. The high levels of oversupply of workers in the labour market as well as the wide prevalence of informal and non-standard employment practices contribute to a distinct environment of high pressure on the workers in the labour market. Additional pressures on the state also stem from India's status as a low to middle income developing country and therefore the country's need to register high economic growth. Further, it is well recognised that the institutional frameworks of labour regulation are not sufficient as there is a decline in enforcement of the existing regulations, and this has meant that the gap between the 'de jure' legal status and the 'de facto' reality of Indian labour regulations has only widened over time (Bhattacharjea 2006; Shyam Sundar 2015). Such complications and considerations only serve to elevate the difficulty of analysing the effects of labour institutions on managerial controls in India. Though large, established Indian (and even international) trade unions recognise the multiple problems in the working conditions of the Indian IT industry, they have found it difficult to organise the workers and form influential collective organisations (Noronha and D'Cruz 2006; Sandhu 2006). Several theories have been attributed to their difficulties and key among those were the absence of any history of organising in the sector and a related lack of organisational maturity (Noronha and D'Cruz 2013). Here too, it must be pointed out that such analyses have often not considered the wider regulatory context within which such struggles were organised and the related institutional support (or lack of therein) for the workers and workers' organisations, and this is something that is addressed in this study.

## 2.6

### Conceptual Framework and Research Questions

Within the services occupations, professional and knowledge-intensive occupations were perceived to be relatively immune to processes such as deskilling, division of labour and automation (Abbott 1988). However, these occupations too are now being increasingly seen as being affected by many of the very same managerial control strategies that were seen in industrial work. Much of the motivation for the following study comes from the need to empirically examine whether and how such processes take place in the IT industry, where work is considered to be knowledge-intensive, even amongst the various forms of 'knowledge work'. At the same time, the study saw the need to be cognisant of and incorporate various institutional forces that act upon this type of work in order to understand what was going on within it. To do so, approaching the study of this work through the lens of managerial control was shown to be the most appropriate. This gave rise the primary research question for the study:

**“What are the ways by which managerial control is extended over knowledge-intensive work in the Indian IT Services (ITS) industry?”**

In order to analyse the manifestations of managerial control in ITS work, an analytical framework is built from Edwards' (1979) conceptualisations of managerial controls (detailed earlier in this chapter). Edwards' saw control over the work being manifested in two main different ways. The first, in the form of 'Technical controls', which is in the form of rules that have been built into the actual production process, encompassing the rules related to the speed of work and production, the quality and quantity of output, time and motion control, and so on. Building on this, an analysis of the technical control of ITS work is carried out. This addresses questions such as how ITS work is controlled, the tools and processes that are deployed to control work, how time is managed in 'mental work', the control of knowledge and finally how workers respond to the various managerial controls.

The second category of controls, the 'Bureaucratic controls', are built into the rules of the workplace and employment relationships. These include the rules around the employment contracts, job roles, promotions and rewards, among others. Such rules are all built into

the social relations of the firm and are seen by workers as ‘objective’ rules of the workplace. But as it has been argued in section 2.5, these are also intricately linked to the state’s labour regulations for the industry or region. It is this aspect that is taken up for a more detailed examination in this study. Labour regulations and the politics it engenders are theoretically approached utilising Burawoy’s (1985) conceptualisation of ‘production politics’. This restricts the analysis of the state to those factors that are explicitly created and intended to directly mediate and regulate economic production. Here, the specific focus for analysis are the labour legislations and regulations that govern employment and work in the Indian IT industry. This approach seeks to address a significant deficiency of LPT based approaches:

Labour Process Theory does not sufficiently appreciate how institutions structure and shape work and employment relations. National institutions provide a basic source of variation in employment relations systems and workplace dynamics (Vidal and Hauptmeier 2014: 18)

The study thus examines bureaucratic controls by focusing on issues around the ‘connectivity’ or the ‘boundary’ between work and the local regulatory institutions. Overall, the specific focus is on labour regulations and how they may structure managerial controls, such as technical and bureaucratic controls. Building on the gaps identified in the literature (embodied in the quote above) and the idea of exploring the connections between labour regulations and labour processes, this study develops a conceptual framework of how the ‘Structuration of managerial controls’ can take place through regulation. This involves examining how labour-specific legislations and regulations can shape managerial controls and subsequently labour processes. Regulatory aspects are seen to be translated by managements down to each and every workplace and employment relationship.

In summary, I develop a conceptual framework of the ‘Structuration of Managerial Controls’ to analyse and build an understanding of the nature of controls in the ITS work. This is utilised to analyse Edwards’ (1979) conceptualisation of the two types of structural controls. This conceptualisation helps in providing some basic building blocks for giving the study a clearer and firmer direction. They also provide for a means to understand the different types of dynamics that permeate the newer types of work such as ITS work. This

framework provides a broad but useful structure to study a wide range of management techniques that may or may not utilise modern digital technologies to gain greater control over the work and its workers, as well as to understand how labour regulatory institutions may or may not affect them. Building on this framework and on the primary research question, the study proceeds to examine the methods by which control is exerted over work within the IT Services segment in the Information Technology (IT) industry in India.

The following research questions and sub-questions emerged from the review of literatures and the conceptual overview detailed in this chapter:

**“How is managerial control extended over knowledge intensive work in IT Services work in India?”**

- a) How are technical controls exerted over computer-based, knowledge-intensive, ‘mental work’ such as IT Services? What are the common managerial strategies involved and what is the role of computing technologies in this? To what extent do ITS workers retain autonomy within the work?
- b) How do structural managerial controls interact with labour legislations and regulations? How do managements interact with such regulatory institutions and to what extent do they influence work? How do workers view and interact with labour legislations and regulations?
- c) What are the different forms of resistance and contestations exhibited by knowledge-intensive workers when faced with various forms of managerial controls?

## **Chapter Three**

### **Methodology of the Study**

This chapter outlines the broad philosophical approach of the thesis and then, drawing upon the perspectives gained from a critical review of literatures in the previous chapter and the research questions that were developed, the chapter sets out the manner in which the research strategy and methodological design were operationalised in order to tackle the research problems. Section 3.1 provides a discussion of the philosophical and ontological framework that guides the broad approach and understanding of the study. The research utilises a labour process-focused understanding of work; and the section also locates this approach within the broader body of knowledge. Following from there, Section 3.2 discusses and justifies the choice of methodological strategy and research design that were used for data collection. Section 3.3 provides insights into the rationale and practicalities behind the selection of respondents — i.e. workers, managers and trade-unionists — and the practical hurdles encountered by the researcher in the process of collecting the data. Finally, Section 3.4 contemplates on the researcher's own position and reflexivity through an introspection of the researcher's own location when approaching the study and also in the manner of approaching the research subjects. The section also discusses some of the aspects related to privacy and ethics.

#### **3.1**

##### **The Philosophical and Ontological Approach**

The research questions that have been elaborated and discussed in the previous chapter pertain to the different ways by which various structural forms of managerial control are exerted over knowledge-intensive work. It is widely understood that managerial controls can be manifested in a wide variety of technical, bureaucratic and normative ways (Littler and Salaman 1982; Storey 1985a; Thompson 1989). This possibility, of a wide range of controls and their possible inter-connections, informs this study's critical realist ontology. A Critical Realist (CR) ontology is recommended as an appropriate approach to understand labour processes, work and employment, and the socio-economic relations within which they are enmeshed (Fleetwood 2004; Thompson and Vincent 2010). The



ability of the alternatives – such as social-constructivist and positivist/post-positivist ontological approaches – to comprehensively explain social structures is questioned largely due to the ‘relatively’ extreme ontological positions that they take, which may not allow for the incorporation of the varied practical realities observed in the phenomena related to employment (Ackroyd and Fleetwood 2000; Smith and Elger 2014). A CR ontology relies on an objectivist approach that views different elements within a social system as being *really* constituted and interacting with each other (Bhaskar 1986; Sayer 1994). Thus, social phenomena may exist and have an influence outside of the subject, even if they have not been perceived or identified (Sayer 2000; Thompson and Vincent 2010). Such an approach is preferred due to the ability of science to test its hypothesis by creating closed systems and the inability (or restricted ability) to do so in the social sciences due to its existence within open systems (Bhaskar 1978). However, this study adopts a CR-based approach only in a limited sense due to some of the known limitations of a CR-based ontological approach. This is because CR approaches utilise only a restricted understanding of a Kantian system of transcendental deduction which attempts to build knowledge of the world based on categories of human understanding and organise them into system of causally governed objects that can exist independently of our perception of them (Bhaskar and Callinicos 2003).

A crucial difference of a CR based approach from positivist or post-positivist approach is in the fact that it can acknowledge several social phenomena that may not be amenable to measurement (Ackroyd and Fleetwood 2000; Sayer 2004). But at the same time, it also differs from social constructivist approaches which view all structures and phenomena in the world as being socially constituted, and that this is sufficient to explain social reality (Fleetwood 2004). CR, therefore, does not adopt the relatively extreme claims of positivism nor social constructivism, but at the same time, desists from a complete rejection of both these approaches (ibid). Rather, CR offers the possibility to recognise the complexity of the inter-connections within capitalism and correspondingly provide the methodological flexibility to utilise a variety of resources for its enquiry (Smith and Elger 2014; Thompson and Vincent 2010).

A labour process-centric analysis of capitalist production systems mainly revolves around various aspects of the labour process at the point of production. The focus here is on how the process of the conversion of labour power (or the potential to do work) into actual labour (or the execution of work) takes place. As argued by Marx (2010 [1887]), humans significantly differ from animals by virtue of the fact that they possess powers of faculty which give them the capacity to carry out both the conception and the execution of work separately. Within a capitalist organisation of production, the employers need to translate this potential labour power into work constitutes an arena where the interests of workers and managers often enter into conflict (or a ‘structured antagonism’) due to opposing interests — such as the workers trying to increase their autonomy within the labour process and the employer/managerial tendency to increase control over the labour process so that they can extract surpluses and accumulate capital (P. Edwards 1983, 1990; Thompson 1990). To an extent, due to this, managements have a tendency to try and separate and widen the gap between the conception and execution of the work, and increase their control over production (Braverman 1999).

Integrating a CR-based approach into the study of such labour processes offers some ability to acknowledge that labour processes can be mediated and influenced by external mechanisms such as wider capitalist logics and processes, as well as institutional or social structures and their modes of regulation (Burawoy 1985; Smith and Meiskins 1995; Thompson 2013). Such mechanisms are viewed in this study as *causal factors*, which have the potential to affect the actual labour process and employment, and should be incorporated in such a manner that both their effects and their *tendencies* are included (*cf.* Fleetwood 2004). Thus, by acknowledging the possible role of external causal factors, a CR approach can also allow for attempts that incorporate wider processes into different levels of analysis.

Thompson and Vincent (2010) recommend a CR based ontological approach for understanding the various inter-connections between labour processes and its wider relations. Though labour processes appear to possess a ‘relative autonomy’ (Edwards 1990), there are many possible inter-connections between labour processes and wider socio-economic relations that can be explored (Smith 2008; Thompson 2003). As

discussed in the previous chapter, a key objective of this study is to understand how labour processes and managerial controls are affected and structured by labour-related regulatory institutions. Labour institutions create certain *mechanisms* that have the ability to shape the nature of managerial controls (Fleetwood 2004; Smith 2008). While there are a variety of regulatory institutions that could possibly affect labour processes in different ways, this study focuses on labour-specific regulatory institutions for in-depth analysis. Focus is placed on the formal and explicit rules that govern employment, such as labour legislations, laws and the related rules and regulations; though this primarily for empirical purposes and not to discount informal norms and institutions. The decision to conduct an analysis of the relationships of these types of labour institution is first motivated by the need to contribute to an understanding of these connections, as they are known to be not clearly understood, and secondly, by the study's practical limitations.

## 3.2

### **The Nature of studies on the Labour Process**

This study primarily seeks to examine the ways by which managers exert control over work and the workers in a specific type of knowledge-intensive work. Given the centrality of the labour process to this examination, the study falls within the ambit of a broader approach known as Labour Process Theory (LPT) or Labour Process Analysis (LPA). Though much of the logic for a focus on the labour processes stems from the theorisations by Marx, some consider such LPT-based approaches as 'post-Marxist' (Elger 2001; Jaros 2010; Thompson 2010). This is due to the fact that even though much of LPT's initial postulates are built on ideas that are rooted in Marx's theorisations — specifically, on how the extraction of surpluses from the production process takes place — LPT's inability to find/make connections between the workplace and wider social and class conflict renders it theoretically decoupled from core Marxist theory (Edwards 1990). Despite this, LPT retains a materialist basis for the understanding and interpretation of work and employment (Thompson 2010).

Within the broader body of knowledge, LPT can be characterised as a 'middle-range theory' (Bryman and Bell 2011; Jaros 2010); this refers to theories that are situated

somewhere between ‘grand’ society-wide theories and smaller, more individual ‘empirical studies’ that attempt to explain some unique aspect of social life (Bryman and Bell 2011: 8). Such theories are also deemed suitable for empirical enquiry as they give the researcher a clear and feasible path to study a very specific aspect of social life (ibid). It also follows, then, that middle-range theories such as LPT are also limited in scope as they do not attempt to tackle or answer larger, broader questions about social life (Jaros 2010). While the pursuit of the specific indeed has its benefits, the approach poses significant analytical hurdles for a researcher seeking to understand work and labour processes within/in the context of its wider political economy. This isolation and distance of LPT theories from wider social and economic processes is a significant drawback (Peck 1990; Ramsay 1985; Thompson and Vincent 2010; Vidal and Hauptmeier 2014). Scholars who have attempted to elucidate these connections between work and mechanisms of globalised capitalism, have repeatedly alluded to the complexities in a bringing together two different, and the disparate levels of analysis that are involved (Elger 2001; Knights and Wilmott 1990: 29; Thompson 2013). Elger (2001) points out that the ways in which work and the workplace relate to product markets, finance capital and the state are yet to be connected in a theoretically coherent manner. It is this pursuit that guides this thesis’ choice of the CR approach as it provides ontological and philosophical support to attempt an understanding or to draw the connections between the specific labour process and wider social processes and institutions.

As discussed in the previous chapter, the deployment of managerial control, which is a central aspect studied in this thesis, can be manifested in several different ways. Due to this, a variety of approaches can be utilised to understand the form and nature of managerial controls. Social constructivist approaches can be deployed, especially in order to understand the various types of normative controls that form some managerial strategies. Several studies have viewed managerial control as being primarily operationalised through attempts to modify workers’ behaviour, their subjectivities and identities (Knights and Willmott 1990). One of key ideas arising from this approach is the notion of professionalism and its development amongst workers over time (Evetts 2003; Fournier 1999). The pervasiveness of notions of ‘professionalism’ in Indian call-centre employees has been documented extensively; in order to elicit specific types of behaviours from the workers in these workplaces (Noronha and D'Cruz 2009). It is also popular, in

this approach, to study modern workplace elements — such as CCTVs and other worker monitoring tools — and interpret them through Foucauldian notions of control (refer to chapter 2 for a detailed discussion around these concepts). While acknowledging the versatility of the social constructivist approach in the study of managerial strategies, this thesis views and locates such elements of managerial control as being supplementary to those centered around the actual manner of execution of the labour process and the drive to extract surpluses. This is based on the understanding that the actual process of the extraction of surpluses during the production of goods or services — the technical division of labour for both efficiency and control, as well as the influence of TSM — have a far deeper and closer-knit connection to the actual labour process than can be explained by a subjectivity-identity normative approach alone (Taylor and Bain 2007; Thompson 2010). However, at the same time, there is little doubt that managements need to and would try to experiment with every possible option available to them to control workers, in order to maintain and increase their control over labour in the production process (Littler and Salaman 1982). It is then highly likely that there exist diverse forms of control in any given workplace; and here, the CR approach allows for the acknowledgement and incorporation of such elements, while not necessarily taking ontologically extreme positions (Fleetwood 2004).

### 3.3

#### **The Method of the Study**

The study was built from the primary and secondary research questions that were elaborated in section 2.6. The primary research question involved understanding the nature of managerial controls in knowledge intensive work in IT Services work in India. The secondary research questions were built on an analytical framework based from Edwards' (1979) notions of technical and bureaucratic controls, and this was described and discussed in detail in the previous chapter. An analytical framework built on Edwards' understanding of managerial controls can also be viewed as being broadly compatible with a CR ontology because it provides a large and, in its own way, a relatively loose over-arching umbrella that allows for the incorporation of various disparate managerial control strategies and for exploring the inter-connections therein. Thus, the secondary research questions involve the nature of technical controls in computer-based, digital, knowledge-intensive 'mental

work'. This involves building an understanding of the nature of the relationship between the labour process, managerial controls and labour legislations and regulations. In order to answer these research questions, data on the actual manner in which the work is organised and what are the different managerial control strategies that are deployed through this organisation of work is required. In its examinations of the bureaucratic controls, the study explores the general rules of employment within IT firms, but goes beyond that by exploring their connections with labour legislation and regulation (which are also examined in detail). This involves combining an analysis of both managerial controls and the actual labour laws that guide such workplaces.

The nature of the research questions and theoretical framework naturally guide the study towards a qualitative approach. A qualitative approach is viewed as being more suited to build a comprehensive understanding of the way work is carried out and the ways by which managements may exert control over the work and its workers. Quantitative approaches would perhaps find it more difficult to uncover and grasp underlying changes to labour processes and work organisation. It would be fair to assume that any modifications to the way any form of work is carried out is best known by its participants who are involved in the actual execution of the work and here, a qualitative approach can allow for direct and complex interactions with them. This study therefore gathers and relies on an analysis of primary, qualitative data gathered from those working within the industry. For an analysis of their relationship to regulation, the findings from the data are combined with a close reading of the actual laws themselves, their case-law interpretations and related policy decisions over time.

Qualitative research offers the possibility of providing empirically grounded, insightful, rich, contextual descriptions and explanations of the processes that underlie the phenomena being studied (Bryman and Bell 2011; Burgess 1982). This greatly allows for the preservation of the complexity of various social processes. A qualitative approach emphasises that human actions can be complex and nuanced, and therefore need to be analysed in a more comprehensive way than the quantitative methods offered by positivism or post-positivism (Bryman and Bell 2011). Thus, qualitative techniques offer a rich line of research for the study of any social phenomena. Though statistical and other secondary sources of information (such as company reports, newspaper articles and other

online sources) are also utilised to construct a comprehensive picture and enrich the study, the main analysis relies on empirical qualitative data gathered from those directly involved in the industry.

Within qualitative studies, there can be a wide variety of approaches that are possible.

Creswell (2007) identifies five broad strategies that can be used to operationalise a qualitative study: these are biographies (narratives), phenomenology, grounded theory, ethnography or case studies. Based on this classification, this thesis' examination of ITS work largely utilises a phenomenological approach for its qualitative research.

Phenomenology attempts to understand the essence of a given phenomenon (Moustakas 1994; van Manen 1990); it attempts to uncover the nature and meaning behind the common experiences of those who are involved in the actual phenomena being studied (Creswell 2007: 59-60), who, in this case, are the workers and managers. Further, the study takes an approach more akin to hermeneutical phenomenology as it seeks to combine the benefits of understanding the nature of experiences with the researcher's interpretations of these experiences (van Manen 1990). Here, the study looks to extract the benefits of phenomenology through its usage of 'interpretivism', where an understanding of the social world of the workers in question is derived from the interpretations offered by the workers themselves (Bryman and Bell 2011: 18).

The study of labour processes naturally lends itself to detailed qualitative analyses of how work is carried out within workplaces. A case study of a single workplace and its work process is frequently utilised in such research. Braverman's (1974) detailed observations of changes to the labour processes of lathe workers in a factory and Burawoy's (1979) study in a machine shop are some classic examples illustrating such an approach. Thus, the labour process has traditionally been researched by using qualitative, case study methods of a single workplace as they provide a rich, in-depth understanding of the dynamics of work. However, studies that are restricted to one single workplace also gather criticism, where questions are raised about the extent to which the findings of such studies are generalisable; and another criticism is that this mode of study fails to adequately incorporate into its analysis important and diverse processes that occur outside the boundaries of the organisation being studied (Jaros 2010: 78). These critiques

notwithstanding, Jaros (2010) views these intensive case studies as “core LPT”, distinguishing them from “what LPT can do”. Core LPT is viewed to involve an examination of the dynamics within workplaces and the actual labour processes involving direct interactions between workers and employers. This study is then closer to Jaros’ formulation of what ‘LPT can do’, which focuses on the potential of developing an understanding of the linkages between labour processes and various social spheres (ibid: 81). But the aforesaid distinction, particularly the exposition on ‘what LPT can do’, still faces hurdles in terms of what is known as the ‘boundary question’ or the ‘connectivity problem’ — which refers to the difficulty of making connection between external phenomena that can possibly have some effects on labour processes. On the question of how to approach or resolve the question of approaching various external factors within a labour process analysis, it is recommended that it is probably best to retain focus on the process by which the labour power (or capacity to work) is turned into concrete labour, and then find external connections through it (Edwards 2010; Thompson 2013). For this study, all of these provide considerable clarity as to the nature and type of LPT study that this is; and this thesis explores what LPT can do by making connections with certain labour-related institutions that are understood to potentially affect the labour process. The possibilities of this have been highlighted amply by Edwards (1979) and others, and discussed in detail earlier, in the previous chapter.

The elaboration of ‘what LPT can do’ has important implications when examining the labour process and its related phenomena. It has been argued that the labour process is relatively ‘autonomous’ from wider social factors (Edwards 1990; Edwards and Scullion 1982). However, attempts to test ‘what LPT can do’ and delineate connections with that which is external to the labour process also tests the boundaries between the workplace and wider institutions such as those related to society, state or the economy (Burawoy 1985; Thompson 1990). In the face of such challenges, a CR ontology can be deployed as it is able to visualise a ‘stratified’ understanding of phenomena and their inter-connections (Collier 1994; Sayer 2004). This helps in connecting and understanding, with more clarity, how different institutions can possibly have causal effects on managerial controls, thereby significantly impacting work processes (Fleetwood 2004). Thus, drawing on the discussions detailed above, this thesis incorporates an attempt to understand various aspects and tendencies within the labour process of ITS work and combines it with an expanded view



on Edwards' (1979) notions of managerial control that includes aspects of the state (specifically, the legal and regulatory framework of domestic/local labour laws). The following sections will elucidate the methodological implications and research strategies utilised in doing so.

### 3.3.1

#### **Data Collection Strategy**

The validity of research in the social sciences begins in the lived world; for it is dependent on understanding the daily language, witnesses, documents and arguments and all related social interactions (Kvale 2002: 302). In line with this postulation on valid social science research, this study identified participants who were all active in the IT industry, that is, they were all working in the industry and had first-hand experience of it at the time of the study. In-depth qualitative interviews were selected as the most appropriate method for conducting the study and are considered to be a fruitful research method, as they often provides a large amount of detailed information for analysis (Crouch and McKenzie 2006). Interviews not only give respondents a chance to explain in fair detail how they go about doing their daily work but also presents them with an opportunity to introspect and examine their own experiences of carrying it out while also allowing the researcher to structure the responses within a wider theoretical context (Smith and Elger 2014). Epistemologically, this stems from an interpretivist position where the attempt is to produce an analysis and concepts/theories related to the work and work processes from the data that emerges from the participants themselves through the research (Bryman 2012: 12; Seidman 2006: 9).

Similar studies on Indian call centers — which is an important segment of the IT industry and closely-related to ITS work — have commonly utilised either unstructured or semi-structured interviews for collecting interview data. As an example of the former, Noronha and D'Cruz (2006, 2009) focus on the underlying behavioural and social notions of 'professionalism' amongst call centre workers and, for this, unstructured interviews are utilised in order to explore a variety of behavioural notions the workers subscribe to. In an example of the latter case, Taylor and Bain's (1999, 2005) study utilises semi-structured

questionnaires which allows for a more guided and systematic exploration of a range of issues, allowing respondents the space to explore the details of work processes even as the researcher is able to maintain some degree of uniformity through the use of a pre-determined list of questions. In this present study, the task at hand is to explore the daily work, workflows and inductively identify patterns in the labour processes of workers in the ITS sector. In order to explore commonalities in the work organisation among a relatively heterogeneous set, comprising different types of workers in the ITS sector, a semi-structured interview structure is selected as the logical option. It is pertinent to note here that this study is not intended to be a case study of a single workplace, and is more of a generalised study of in the sector. This results in some heterogeneity in the workers, not only in their education, seniority, work experience but also in their areas of specialisation, as well as in the types of firms — in terms of firm size or type of technologies used, for instance — that comprise the sector. Given the diverse nature of the set then, the structured elements of the semi-structured interview allowed for the introduction of a level of standardisation of the questions set, and by implication, of the responses and the data collected (Rubin and Rubin 2005: 67); the overall approach remained semi-structured to allow for in-depth and wide-ranged probe (Denzin and Lincoln 1994; Minichiello et al. 1990). The semi-structured interview approach also left adequate room for follow-up questions, some of which were crucial in eliciting detailed and insightful responses.

### 3.4

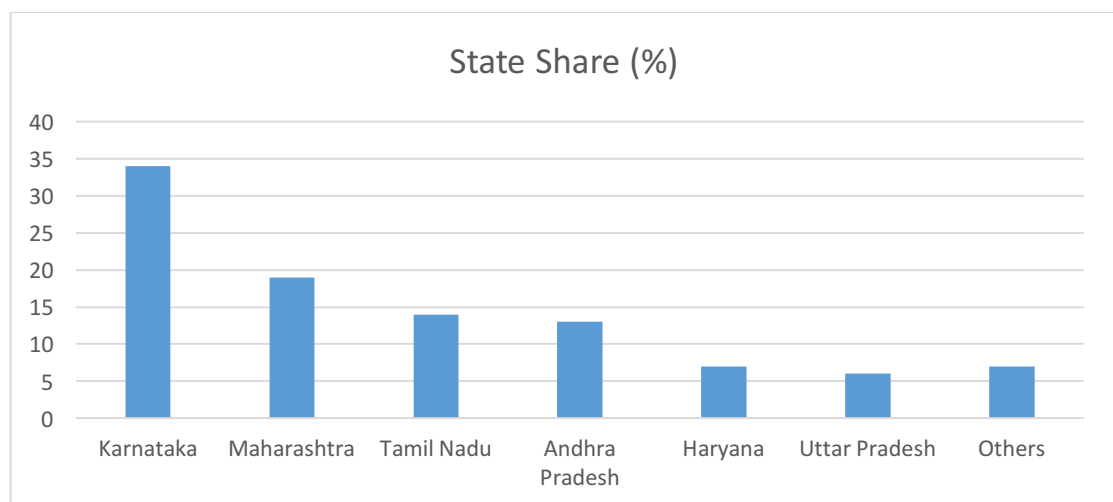
#### **Operationalising the research: Research site selection and access**

The previous section outlined the process of selection of the research strategy after having introduced the available strategies to execute this type of qualitative research. The study's objective of analysing the labour processes and managerial controls in 'knowledge-based' occupations is focused on the IT industry and ITS work within it. The IT industry in India has been a centre of such knowledge-based work since its emergence in the 1990s and over time, it has carved out a niche for itself as a major and top destination for offshoring IT work from around the world. By 2016, the Indian IT industry generated annual revenues of over \$100 billion and was directly employing around 3.5 million workers (NASSCOM 2017). The precise conditions that led to the development of a sizeable IT

industry in India have been discussed briefly in chapter 2 and some further aspects would be addressed in chapter 4.

The Indian IT industry is spread over several federal States of India (India has a total of 36 such states, including 7 Union Territories) among which the State of Karnataka is the single-largest center of the industry both in terms of revenue and employment (NASSCOM 2014). Karnataka alone contributes to around one third of the total revenues of the Indian IT industry (see figure 3.1) and a similar proportion of employment. Within Karnataka, the city of Bengaluru (formerly known as Bangalore) was the natural choice for the location of the study, for, it is not only the State's capital city but is also known worldwide as a key centre of the industry. For example, globalists such as Friedman's (2005) thesis of a 'flat world' draw heavily, in its India section, on Bengaluru and its evolution into an IT powerhouse. Though several other smaller cities in Karnataka also host portions of the IT industry, there would be little dispute that most of the industry is concentrated in Bengaluru making it the main hub of such work, hosting some of the largest Indian and multinational IT firms (Parthasarathy and Aoyama 2006). The IT ecosystem in Bengaluru, however, is not limited to large IT MNCs alone; for its software clusters or technology parks also host several small and mid-size firms. This provides the research with potentially a large yet diverse sample of IT firms and workers to choose from, making Bengaluru the primary choice to operationalise this study.

**Figure 3.1 - The contribution of individual States to Indian IT exports**



Source – Author, based on NASSCOM (2014: 30)

Securing access is a common challenge when studying any form of work. It is widely accepted that pre-existing networks and connections are often a pathway to securing access to locations that may be otherwise deemed to be out of bounds (Smith 2005). Going back to some of the studies on call center workers in the Indian IT sector, referred to in section 3.3.1, it is noted that access to workplaces in the Indian IT industry is known to be 'highly restricted'. Even when access has been secured to firms — through the official IT employers' bodies, as in the case of Taylor and Bain (2005) — further access has been found to be highly restricted by local managements. The above study had found the workers who were made available for interviews to be often specially selected by the managements, then forcing the researchers to resort to arranging interviews with workers outside such workplaces and offices. Not only are biases in the selection of interviewees possible when approached via managements, but it can also enter the interviews themselves. Similar issues, regarding access to such workplaces, are faced by other researchers too. Noronha and D'Cruz (2006) also highlight the difficulty to gaining access to Indian IT firms, and opt for recruiting participants through a combination of informal groups, trade unions and their own networks.

The study intended to provide a generalised account of IT labour processes and managerial controls. This involves interviewing workers in similar job or work profiles across different types of workplaces as this would serve to increase both the robustness and the generalisability of the study. In order to avoid any potential biases towards a specific firm or managements (and also learning from experiences of earlier studies), this study devised a two-pronged strategy to access interviewees. The entire sample of workers were planned to be accessed in two segments: half the workers would be approached by gaining access formally through and with the permission of the firms' managements, while the other half would be accessed independently through workers' organisations and their networks. To operationalise the former, IT services firms were identified and ranked in terms of their size according to the number of employees and the largest IT services firms were approached through official channels of access. This was done in a direct manner, where the purpose and academic nature of the research was conveyed clearly to managements or, in some instances, the heads of their research and communication wings. The fieldwork was conducted over a period of six months between November 2016 and

May 2017; but some groundwork included the initial contacts with IT firms and organisations were initiated earlier. Firms were selected and contacted starting with the largest IT firms, and then proceeding down the list in order of size. However, only two of the firms responded (that too in the negative) and the others did not respond at all to repeated emails. Though over the subsequent course of the study, some senior managers responded positively to being interviewed themselves, they were largely reluctant when access to their offices and workers was requested. When attempts to gain access to the workplaces and workers through formal and informal routes failed, the researcher had to modify the approach and shift entirely to the second access strategy that had been planned i.e. through workers' organisations. Five such workers' organisations/associations/trade unions were identified, which represented a wide range of political ideologies and affiliations: this included four workers' associations/unions that identified as representing workers' interests, and one collective of technology enthusiasts.

The organisations are (in alphabetical order):

- i) Forum for IT Employees (FITE)
- ii) Free Software Movement, Karnataka (FSMK)
- iii) North Karnataka – IT Professionals Forum (NK-ITPF)
- iv) IT Employees Centre (ITEC), now registered as a formal trade Union, Karnataka IT Employees Union (KITU)
- v) Union of IT and ITeS Employees – Professional (UNITES-PRO)

These organisations and their representatives were viewed as gatekeepers negotiating the researcher's access to the field (Lewis-Beck et al. 2004). In order to mitigate any gatekeeper effects or biases that could creep in through this approach to access workers, the researcher subsequently used snowball sampling: that is, the interviewee suggested by the workers' union or collective would be used as the first point of contact, following which they would be asked to suggest other workers who may be willing and interested to being interviewed; they were explicitly requested to refer to people who are part of their networks but outside of their respective collective organisations. This ensured that the opinions of workers who are part of such organisations did not get over-represented and the findings reflected all sorts of workers. The sampling was purposive in order to specifically locate ITS workers; for this, a description of what this study constituted and

what ITS work entailed was described to each interviewee so they had a clear picture of the type of workers or work processes being studied and this was repeated with each and every interviewee. This was necessary as there was a certain degree of confusion, among workers as well as unions, over what ITS work entailed, because of the myriad ways in which this term was interpreted. This confusion is to some extent understandable: firstly, there are few official definitions or classifications available for the different internal segments that constitute the still-evolving and relatively new IT industry. The general terms that are generally used to describe the work in the industry — namely IT, Software, ITS, ITeS, BPO or call centres — are often used interchangeably and in a generic manner, making the internal differences between them rather ambiguous. Secondly, there is a genuine complication within the IT industry itself because the boundaries of the different types of work tend to overlap, making the definitions of various types of IT work unclear (this is elaborated upon in Chapter 4).

### **3.5**

#### **Selection of Interviewees**

Previous sections in this chapter had elaborated some of the study's ontological and epistemological premises before going on to lay down the rationale behind the methodological choices and broad approach to the fieldwork. In this section, the discussion moves to the specifics and the practicalities of accessing the different types of interviewees who were a part of this study. This involves separate discussions on the four different categories of interviewees, how they were accessed, their characteristics and specific or unique issues, if any, when faced in identifying, meeting and interviewing them.

The study itself began with a preliminary pilot of four in-depth interviews that were conducted to test the questionnaires, gauge the relevance of the interview questions and explore any limitations to the analytical categories that have been utilised. These interviewees were accessed through the researcher's own networks and involved workers and managers in the IT sector. This was primarily done with the express intention of gaining some understanding of the current dynamics of the sector and therefore the relevance of the interview schedule. It also helped in narrowing down the kind of sample

of informants that the study would require, as well as refine the interview questions for relevance before commencing the actual study.

The four main categories of interviewees that were identified for interviewing as part of the study were:

- i) ITS workers
- ii) ITS managers
- iii) Representatives of workers' associations/unions
- iv) Government officials

In all, 52 individuals were interviewed, including the pilot interviews with some relatively senior members of the industry (though these pilots are not part of the analysis). Overall, 52 people were interviewed over the course of 48 interviews (one trade union, FITE, preferred to be interviewed with four representatives present together) with a total of 34 hours of interviews. The 48 interviews that form the main part of this thesis' analysis were divided across the various categories of interviewees, however, the bulk of them (32) were with ITS workers. The workers and managers came from a variety of different firms representing at least 24 different IT offices in Bengaluru. For the purposes of the study, and to highlight some of the possible differences in work organisation and managerial controls based on the size of firms, IT firms were classified in this study as small (<50 employees), medium (50–1000) and large (>1000).

The interviewees were divided in this manner: 32 ITS workers, ten managers, two government bureaucrats and eight representatives (in four organisations/interviews) of workers' associations or trade unions (see Table 3.1 below). As mentioned in the previous section, the use of snowball sampling (after initially using the workers' collectives to access workers) meant that the sample was not over-represented with union or workers-association members, with only six of the 40 IT workers were or had been members of trade unions or workers' associations. Of the 32 IT workers, 8 were female (or 25% of the total interviewees); and two union representatives were female though none of the managers were women. Given the sectoral composition of roughly 30 percent females

(NASSCOM 2017), the researcher aimed for a sample that was close to representative of the workforce; however, given that the number of women fall sharply in positions of seniority, finding female managers for the interviews was difficult. The study did not set out or adequately explore gender issues or other social segmentations (such as religion, caste, regional or linguistic) in the workforce or its effects, and it is important to mention this as a shortcoming of the study.

**Table 3.1 – Total number of different types of interviewees**

<b>Type of interviewee</b>	<b>Number of interviewees</b>
Workers	32
Managers	10
Workers' Collective Organisations (Representatives)	4 (8)
Government Officials	2
<b>Total</b>	<b>52</b>

Separate semi-structured interview schedules were prepared for each of the four categories of interviewees. However, though the questions varied, the broad topics and the interview guide were comparable across the interviewee categories, barring the government officials, because they were largely guided by the analytical categories. At the highest level, the questionnaires were divided into two segments based on Edwards' (1979) conceptual framework of technical and bureaucratic controls; this basic structure for organising the questions was retained across the interview schedules for various interviewees. Following such a schema allowed for the creation of a systematic and standardised set of topics that covered a broad range of aspects of work. The detailed interview schedules have been attached in Appendix C. The first set of topics were based on notions of technical controls and covered aspects such as workflows, the intensification and extensification of work, the pace of the work, the knowledge of the work; and the changes to them, if any. For aspects related to bureaucratic controls, the main topics included the conditions of employment, rules around rewards and punishments, grievance redressal mechanisms and the role of industrial relations mechanisms related to these aspects. Both segments relied significantly



on an inductive approach, attempting to explore the nature of the organisation of work and its attendant labour processes as the interview progressed.

The interviews were mostly conducted in quiet coffee-shops, restaurants or in the firms' in-house canteens. When workers or managers were unable to appear personally due to various constraints (such as time or distance) but were interested in being interviewed, interviews were conducted via video-conference or over the phone. Both the snowball sampling method and the informal interview locations allowed the interviewees to be more candid in their responses and discuss their workplace processes issues in greater detail. The majority of interviews lasted about 45 minutes, with a few interviews exceeding that time frame; typically, interviews with managers were the longest, with most around 90 minutes overall. All interviewees were informed in detail about the aim and the purely academic purpose of the study; as well as a guarantee of anonymity and confidentiality. While some workers expressed hesitation to participate in such a study, others said that they didn't mind 'their names being published anywhere'. However, for the most part, the academic and, more importantly, the anonymised nature of the study was emphasised and this served to re-assure most of them. The interviews have been subsequently anonymised and pseudonyms have been used throughout. All interviews were recorded after permission was sought from interviewees to do so. Data was stored and transported in a manner consistent with University research guidelines (secure and password protected with access limited to the researcher and/or the supervisors).

### **3.5.1**

#### **Interviewee category One: ITS workers**

ITS workers can be involved in a wide range of IT tasks related to the installation, deployment and maintenance of IT systems (see Beirne et al. 1998). Much scholarship on the IT industry has focused on workers in software development or in its call center/BPO segments, as these form some of the more visible and well known portions of the IT industry. However, ITS work, though less visible, does indeed constitute one of the "core segments" of the IT industry (Flecker and Meil 2010: 683). What makes ITS work distinct is also the heterogeneity in its work, where workers with similar types of skill sets or

working on similar projects can be further divided along technological lines or different industry verticals (ibid). An example of similar ITS workers divided along technological lines would be when workers' work profiles and levels of skill closely match but the same work is carried out with completely different technological platforms or softwares. For example, two workers could be designated as System Analyst but one works as 'System Analyst - *Microsoft Windows OS*' and the other 'System Analyst - *Apple Macintosh OS*'; the two work on completely different technologies and different skill-sets, and this can change the nature or process of work they do. Another example of division along technological lines is when the work involves different types of IT devices —some workers may work on desktop computers, others on servers, mainframes, databases or network devices among others. Some of the examples of similar job roles and their corresponding equivalents across different devices include System Administrators/Network Administrators or Database (DB) Support/Operating System (OS) Support or Desktop Support/Network Support. While snowballing and selecting IT workers for interviews for this study, care was taken to ensure that it was ITS workers who were interviewed and not software or call centre workers, though there were some overlaps. Table 3.2 provides some more details about the characteristics of the ITS workers who were interviewed. The detailed characteristics of these interviewees can be viewed in Appendix D.

**Table 3.2 – Range of characteristics of interviewed ITS workers**

	<b>Minimum</b>	<b>Maximum</b>
<b>Age</b>	24	44
<b>Education (years)</b>	Diploma (13 years)	MBA/MCA (17 years)
<b>Technical Certifications</b>	0	6
<b>Total Work Experience (years)</b>	2	18
<b>Years spent in current firm</b>	1 month	10 years

It was inevitable that some of the workers interviewed were those who worked on what can be seen as the border between ITS and software work or ITS and call center/BPO,

and it naturally follows that such workers are hard to classify. This included workers who provide specialised technical support through call centers (such as 3rd level technical support workers or support workers of complex IT systems) or those involved in interacting with software workers to develop functioning hardware solutions or software testing workers. Such overlaps are inevitable to the nature of ITS work, and it was decided that interviewing them should be of some value to the study. Another type of worker that was difficult to classify were those in senior technical positions — these workers were difficult to classify because they comprise of technical subject experts, who, whilst not being part of the management can have elite working conditions that are similar to, if not on par with management (Barley and Kunda 2004). However, these workers do not constitute a significant portion of the IT industry's workforce and there were only two such interviewees in this study.

### **3.5.2**

#### **Interviewee category Two: IT managers**

In order to gain deeper insights into managers themselves approached the organisation of work and their principal control strategies, several managers from the IT industry were interviewed and their descriptions incorporated into the analysis. Management was not seen to be a monolith with a single characteristic type of manager (Armstrong 1989), and after the pilot interviews, several different manager types were recognised and an attempt was made to incorporate their unique perspectives. The interviewed managers thus ranged from first-line managers of teams of ITS workers, to technical managers, HR managers and some senior executives. The purpose of these interviews was to shed light and, if possible, to supplement and build a more comprehensive understanding of labour control strategies. These interviews also sought to understand the nature and manner in which new technologies – such as cloud computing, artificial intelligence (AI), machine learning and automation – affected the work, its labour processes and their workers. The various types of managers that were interviewed are depicted in table 3.3.

**Table 3.3 – Different types of managers who were interviewed**

<b>Type of Manager</b>	<b>Number</b>
First-line manager	3
Technical manager	1
HR manager	3
Senior Executive	3
<b>TOTAL</b>	<b>10</b>

Another key purpose of interviews with managers was to understand whether and how their control strategies interacted with labour regulations. This was done in order to understand their logic behind the control strategies that they deployed in the labour processes of IT work. Such interviews were then combined with a study of the applicable labour regulations and how the managers and the workers interacted with them. In this regard, the study is narrowly focused on the relationship between managerial controls and labour legislation. This narrowing down of the scope of the State owes to practical considerations while executing the study; the rationale for which was discussed in detail in the previous chapter. Broadly speaking, the study draws upon the conceptual understandings of Edwards (1979) and Burawoy (1985) to analyse the interactions between labour regulations and managerial controls. And for this, interviews with managers are also used significantly to explore the associations between the two.

Interviewing managers on labour laws and regulations — in addition to questions that help understand work, control and the labour process as a whole — served twin purposes. One, it had the potential to shed further light on the real extent and reason for the perennial refrain by managements that state interference impacts them negatively (refer Storey 1980), though now approached through the lens of managerial control. And two, it could potentially reveal aspects of the work and workplace where managements feel that they are unable to extend control specifically due to the existence of labour laws and regulations. This was combined with a detailed reading of the applicable labour regulations. Both purposes were largely served in multiple manager interviews, with different types of managers, all of whom greatly aided much of the analysis in Chapter 6.

An interview schedule was designed for managers, but was customised for each type of manager while still following Edwards' broad analytical categories. The idea was to address the same broad themes as that which had been covered in the workers' interviews, though now it was from a managerial perspective. Chronologically, most of the manager interviews were done after the bulk of the worker interviews were completed. As a result, some of the interviews were able to incorporate some of the early common themes that emerged out of worker interviews. However, as the manager interviews progressed, the researcher realised that, like the IT sector that was being studied, managements too highly varied with a parallel stratified understanding that was often limited to the technical and bureaucratic aspects that they managed. Thus, the interview questionnaires for the different types of managers were tweaked in minor ways to be able to address, with some degree of relevance, their own understanding of managerial controls (these interview schedules are attached in Appendix C).

This part of the study was fruitful in providing insights into existing systems of labour laws, regulations and national policies related to the IT industry from the vantage point of the managers. The initial premise was based on the fact that managers would naturally attempt to control the labour process and workers, and here they might possibly find their attempts restricted due to the existence of labour regulations; these interviews aimed at identifying the spaces/juncture where such interactions took place. The formation, and more importantly the continuous modification/amendment of labour regulation, is viewed to be a part of structures embedded in the wider politics of the state (Burawoy 1985). While this is recognised to be a useful line of enquiry, the political aspects of the creation and/or modification of such regulations was beyond the scope of the study owing to both practical considerations as well as the high level of governmental (political and bureaucratic) and corporate access that understanding such aspects would require. The enquiry was thus restricted to studying the ways in which IT managements dealt with the existing systems labour laws and regulations as they encountered them.

In all, 10 IT managers were interviewed. Compared to worker interviews, which usually lasted around 45 minutes, these manager interviews were longer and each lasted at least 1.5

to 2 hours, and in some cases even longer. In the case of managers, access was mainly through the researchers own networks, and snowballed from there; while one manager was directly accessed through a workers' union. The profiles of the managers interviewed varied as did the types of firms. The sample included three senior executives in large (10,000+ employees) IT firms: this included one Chief Technology Officer (CTO), one Vice-President (HR) and one Chief Mentor. These senior executives were exceptions within the sample as they were not involved in the day-to-day managing of employees but gave useful insights into the larger directions of technology, as well as broad institutional and organisational dynamics. All the other managers were non-executive level managerial staff, though one technical manager in a small IT firm also doubled up as its CTO. Some were technical IT managers with extensive technical experience while others had non-technical backgrounds, such as people or HR managers. All of the managers were surprisingly keen to participate in the research and extensively discussed the broad directions of the industry and existing situation facing IT workers. These interactions not only served to provide illuminating insights into emerging technologies such as automation and artificial intelligence, but also into the inter-firm dynamics within offshoring relationships. The extended managerial hierarchies also result in extended control hierarchies and all these aspects are discussed in detail in the empirical and analysis chapters.

### **3.5.3**

#### **Interviewee category Three: Workers' representatives**

The five workers' associations/unions/organisations listed in section 3.4 comprise the next category of interviewees. This category was both a source for interviews themselves and also acted as gatekeepers to provide further access to the workers. In the case of one trade union, repeat interviews were conducted, before the start of the study in order to gain an overall picture of ITS work and later, in order to understand overall developments in the industry. Again, separate interview schedules were designed for these worker representatives following the broad outline of technical and bureaucratic controls, but with a looser direction for the interviews. Two of the heads of these worker's organisations were not active in the IT industry. One had been an activist but was now an entrepreneur while the other was a full-time lawyer. Thus, though they were heading IT workers'

organisations, they had moved to jobs in sectors other than IT. It is also noteworthy that all of these workers' associations and trade unions represent not just ITS workers, but rather the wider IT industry. At the time of the study, there were no active registered workers' trade unions in the sector (with the only registered union, UNITES, being inoperational at the time); however, four months after the study was completed, two of the workers' associations (FITE and KITU) officially registered themselves as trade unions (in October-November 2017), with one of them being affiliated to a major Central Trade Union (CTU).

In all, five interviews were conducted with trade-union officials, of which one was conducted simultaneously with a group of four representatives. These interviews were mostly conducted at the offices of the organisations or in a location of the interviewee's choosing. While one of these was accessed through the researcher's own network, the remaining were contacted and arranged by contacting them through the numbers listed on their official websites. The interviews with workers' associations and trade unions were longer than the managerial ones, usually running over two hours. A variety of topics based on their questionnaires were discussed, but the discussions often devolved into the most common issues that workers would approach them with and how they tackled them.

#### **3.5.4**

##### **Interviewee category Four: Government officials**

The previous chapter had discussed in fair detail the aspect of the research that pertains to the state, its connections with labour processes, managerial controls and issues around the regulation of labour. In order to supplement the insights gained from the workers, managers and workers' organisations on how regulation shapes the employment relationships in the IT industry, two interviews with government officials working with the federal state government were conducted. The Labour Commissioner's office, Bengaluru is directly responsible for overseeing the compliance and enforcement of the labour laws applicable to IT industry in Bengaluru. While the Labour Commissioner's office, Bengaluru is concerned with the enforcement of employment laws and the governance industrial relations in the state, it does not have a special officer to deal with the IT sector

per se and the usual officials deal with all registered industries within their jurisdiction. Two such government labour commissioner office-based officials were interviewed; and both of them were specifically familiar with the issues of the IT industry and the complaints from the workers therein.

A short, separate unstructured interview guide was designed for the government officials, focusing largely on the nature of regulation, enforcement and how the IT industry dealt with these aspects. There was much more reticence towards giving interviews given the sensitive nature of the information that government officials deal with, as they are also often directly intervening in order to arbitrate and resolve industrial disputes and conflicts. It was explained to them that the research was focused on understanding the employment and regulatory relationships rather than their or their department's performance, and so would not cause them or their departments any harm. The officials insisted that the interviews not be recorded. And once this was agreed, they were much more open in discussing the issues within the IT industry and giving specific details of the nature of regulation, the issues that frequently are brought to their notice and their opinions on the state of regulation in general. Their openness was also aided, without doubt, by the assurance of academic and confidential nature of the study.

### **3.6**

#### **The Analysis of the Data**

As discussed in section 3.4.1, the interview schedules were designed to follow a basic structure built from the analytical categories in order to keep the topics covered by the various interviews comparable across the different categories of interviewees. This essentially reflected the theoretical framework itself comprising of, one, technical controls and two, bureaucratic controls in ITS work and the corresponding conceptual frameworks of the structuration of managerial controls. The interview questions were organised along these two main interview segments across all the different types of interviewees. Stemming from this, the analysis too was split along these two major segments. At the same time, the analysis also continually sought to find inter-connections between these two forms of managerial controls and their corresponding contestations. This involved a detailed study



of the extant labour regulations and the peculiarities therein. This understanding was then combined with the analysis of the interviews.

The analysis of the interviews themselves utilised a thematic approach in order to identify the common themes that emerged through the responses. In doing this, the analysis largely followed the guidelines of Creswell (2007) and Silverman (2011). This involved building categories comprising of key common themes emerging from multiple interviews. Then, broader themes based on these initial sets of common themes were abstracted out. And then this process was repeated iteratively several times until a refined superset of themes were identified and arrived at, regarding the various aspects of technical and bureaucratic controls that were discussed over the course of the interviews.

Once these common themes were arrived at, they were further analysed in combination with the labour laws and regulations that governed the work. Labour regulations were parsed and examined for understanding the manner of regulation of those aspects of work corresponding to what had been raised in the interviews. Official data sources included the actual body of labour laws and its related rules, supplementary government documents on the relevant labour legislations such as notifications of amendments, notices of exemptions as well as government press releases. Such an analysis of the interviews and legislations was enriched by combining it with background and supplementary data collected from further secondary data sources. Such sources included news media reports, opinion articles, reports and information published by workers' associations or employer's organisations as well as other online sources. Further, the quarterly and annual reports of the publicly listed IT firms and other financial media were also examined. All of this information was publicly available and was used to enrich and provide more depth to the analysis. This combined analysis was further interrogated for the generalised *tendencies* that they exhibited and the various *causal configurations* (cf. Fleetwood 2004), that were seen to affect employment and managerial controls. These gave deeper insights into the nature and structure of the various managerial controls.

### 3.7

#### **Ethical Considerations and Reflexivity**

This section deals with some of the ethical considerations that shaped the approaches in this research and elucidates on the practical choices and challenges that the researcher personally negotiated while on the field. The nature of the research made informed consent and confidentiality one of the primary concerns. Before each interview, the aims and objectives of the study and its approach to both confidentiality and security of data were explained in detail to each interviewee. The interviewees would be made familiar with the purpose of the study, its broad approach and also a basic idea of how the analysis would be carried out with their data. Their consent for participation in the study was secured through a hard-copy consent form before any face-to-face interviews and through a verbal consent before any interviews via video conference or over the phone. The study followed regulations and procedures that were compliant with the University of Leicester's requirements for the ethics, rules and regulations for such research. Further, once the data was collected, it was anonymised so it is not identifiable to individuals or their organisations. The raw data that was collected as part of the study were stored safely with the researcher in password protected files and folders.

The field research was initially designed to access the ITS workers through two separate equally divided means: official access through the firm and the second through workers' associations or unions. The neutral approach via the IT firms' official channels was expected to offset any possibilities of gatekeepers affecting the interviewees. However, all the IT firms that were contacted declined access that had been requested through their formal channels. And this led to the research shifting entirely towards the snowball method for accessing interviewees. This was a more informal method of approaching the interviewees and reduced some of the considerations of power relations that would have been part of more formal and top-down approaches.

That said, there were several points for introspection for this researcher during the entire process of approaching and accessing the workers and managers. A researcher needs to consider their role as an insider or outsider, how they establish relationships with their participants, how they position themselves in each interaction and finally how their analysis should aim to attain a balance that reflects both the participants and the researcher (Weis and Fine 2000). There is always some degree of influence of the researcher, their methods,

values and the biases that they might carry along with them into the research process (Bryman and Bell 2011: 700). Because this researcher had worked previously in the IT industry, there was a natural concern about whether and how this would affect the approach to the study. Phenomenological research often requires the researcher to set aside their own experiences and try and focus solely on that of the participants (Creswell 2009: 13). In this case, the researcher attempted to consciously minimise such effects on the study in a variety of ways, while at the same time trying and leveraging the benefits of knowing the industry and its workings. The fact that the researcher had not been involved with the industry for over six to seven years meant that it was possible to look at the work and workflows with relatively fresh eyes and minimise the incorporation of the researcher's own experience to some extent. Then there was the decision of whether to disclose to the interviewees the fact that the researcher was familiar with the industry and had worked in it previously. It was decided that disclosing the fact that the researcher had a part of the industry primarily because it was a clearer and more honest approach with the interviewees. Thus, both the researchers' knowledge of the sector and his current distance from it, due to amount of time spent outside it, were explained to the interviewees before the commencement of the interviews. Overall, this was found to be beneficial as it usually put the interviewees at ease to know that the researcher as someone who is familiar with the industry, but at the same time, is fairly out of touch with it. This made it easier for the researcher to reduce the distance from the participants (Guba and Lincoln 1988: 94), and so the participants were much more open in their discussions and willing to talk about the various issues that they faced. It also put them at ease to know that they could freely use industry jargon without the need to think twice about them or explain them, for, the researcher was familiar with most of the terms related to the various forms of IT work. That the researcher could, in turn, converse with them using the same industry jargon also proved to be advantageous in carrying out such discussions.

However, this ease in engagement with interviewees owing to familiarity, does not preclude the possibility that the researcher could be oblivious to interpretations of events and behaviours that may be viewed as unusual to others or offering significant alternative insights. Thus, it became important that the researcher conduct the analysis by actively striving to dissociate it from their own personal experiences and relying exclusively on the empirical data that has been collected (Braverman 1999: 6). As a result, there is nothing of

the researcher's own experience of working in the industry in this study. This was further ensured by making sure that none of the interviewees were from job profiles or work similar to that of the researcher's. This acted as an additional limiting factor to ensure any inadvertent inclusion of the researcher's own experiences.

Professional organisations, trained professionals and other highly skilled or knowledge-intensive workers, such as those found in the IT industry, offer uniquely difficult terrains for any researcher of work and labour. At the outset, such workers are specially trained for many years and develop certain jargons and world-views amongst themselves which may not be immediately understood by outsiders, but need to be made familiar over time. While any labour research can quickly and legitimately examine employment conditions, wages and industrial relations, studying the labour process of professional work — especially ones that combine several years of education and training — can be potentially difficult for an outsider or someone who is not trained in it, as they may not be able to fully grasp the nature and complexity of the work processes that are involved. This difficulty is particularly exacerbated in the case of knowledge-intensive work particularly because it involves the deployment of highly trained 'mental labour', which for all practical purposes, is invisible to any outside observer unlike forms of manual and physical work which could be observed by anyone. As a result, changes in the labour processes of 'mental work' is therefore practically undiscernible to those who are not familiar with the details of the actual body of knowledge that the workflows are centered on; as without understanding this body of knowledge, it is difficult to understand why the work is organised in a certain manner or how it is being redesigned. The minor ways by which the contribution of the workers in the work and the labour process is diminished, the portions of the work that are being standardised within the occupation and the nature of these changes to the work in the profession, are all aspects that require considerable pre-existing insights into any such profession. While this knowledge is not impossible to acquire, it still presents any researcher of the labour process with the difficult task of acquiring an understanding of it. Therefore, the downside of approaching such professional and knowledge intensive work as an abject outsider is that the researcher would probably fail to observe or identify the nuances in the changes to the organisation and content of such work.

As far as the analysis of the research is concerned, Denzin and Lincoln (1994) opines that there cannot be a perfectly final, objective, accurate representation of what has been said or meant in an interview. What we then get as analysis is the possibility of different representations or different experiences being interpreted by the researcher carrying out the study, albeit through a theoretical lens and structured in a systematic social scientific way by following its methods (Smith and Elger 2014). Over the course of this study and its analysis too, complex questions arose about the researcher's positions and the role of the researcher's influences. The researcher felt, almost constantly, the necessity for additional caution due to the researcher's own position as a former practitioner; and so, during the analysis, the responses and interviews were revisited several times bearing these concerns in mind. It is believed that, on the balance, by following the social scientific methods rigorously, by providing some familiarity for the interviewees to discuss the work and industry, by avoiding work categories that were close to the author's previous work experiences and also by incorporating of a variety of ITS workers, the positives outweigh any potential negatives.

Broadly speaking, there were three ways by which the negative effects arising out of the researcher's familiarity and the potential for bias were, to a large extent, mitigated. Firstly, care was taken that the types of ITS work chosen for study were not the same as that the researcher had previously worked in (that of IT security); and so the researcher could not carry forward his own experiences in a direct manner while devising questions, setting the research agenda or while carrying out the analysis. Secondly, care was taken to ensure that none of the participants in the main study were previously known to the researcher. This is why the researcher did not choose to access the industry through the researcher's own personal networks, friends or other contacts, but instead sourced interviewees by going through workers' organisations as the starting point for obtaining interviewees. The researchers' own networks were only used to initially contact some managers as this can be difficult to arrange and the said workers' organisations did not have too many contacts with managerial staff. Even so, care was taken that the researcher's own contacts were only asked to suggest further potential managers who might be willing to participate. Thus, among the final set of managerial interviews, none of the interviewees were known or had interacted previously with the researcher. Though the interviewed managers were snowballed from known contacts, there were still some additional challenges to establish

trust with them, something that was not encountered with the workers. Several of them initially expressed doubts about violating various non-disclosure agreements or company codes; however, such doubts were resolved when the fully anonymous, confidential and academic nature of the study were explained to them; and the fact that no sensitive IP or technical details were required to be discussed during the interviews. The final manner by which the researcher's familiarity with the industry was neutralised to some extent was by being completely relying on empirical data of the field and its actors, and systematically analysing the collected data using an iterative thematic analysis and deriving its findings from them. All of these measures played some role in increasing the validity of the study and provided it with a more solid social scientific foundation by reducing the researcher's own personal knowledge in the findings and insights (as suggested in Braverman 1999: 6; Bryman and Bell 2011: 19). Any prior knowledge about the IT industry and the work within it were thus turned to some advantage because it allowed the research participants to be more comfortable while discussing their exact labour processes and workflows in detail, and allowed for a nuanced understanding despite the usage of otherwise opaque industry jargon in such discussions.

## Chapter Four

### The Indian IT Industry and IT Services Work

Before beginning an analysis of the nature of managerial controls in the Indian IT industry, it is important to understand the context within which such work is being carried out. A sensitivity to the context and the wider setting of the study is beneficial for any form of qualitative research (Creswell 2009: 17). More importantly, such a contextualisation is carried out because there can be several local factors that affect the employment relationship and organisation of work (Burawoy 1983, 1985; Jonas 1996). The presence of a relatively large IT industry in a developing, low to middle-income country like India is unusual, and so the manner in which both workers and firms approach the IT industry is often also unique (Barnes 2013; James and Vira 2010). Examining the industry's location within the domestic economy thus can help in developing a more nuanced understanding of the industry's relationship with the state and the logic behind some of the state's industry-specific labour policies. The purpose of this chapter then, is to provide a wider contextualisation in order to understand the industry's position within the broader political economy within which production is carried out.

This study pertains to labour processes of IT Services (ITS) work. Though ITS work comprises an important segment of the Indian IT industry, various types of IT work are often lumped together without clearly differentiating between the diverse types of work that are being carried out within the IT industry (see Beirne et al. 1998; Trusson and Woods 2017). This chapter addresses some of these issues around classifications and categorisations by providing a clearer delineation of the internal structure of the IT industry, the scope and nature of ITS work and what it constitutes. The site of the study is the city of Bengaluru (formerly known as Bangalore), which is the capital of the federal state of Karnataka, located in the southern part of India. While the reasons for the selection of this location were discussed in the previous chapter (chapter 3), this chapter focuses on examining the specifics of this location in terms of its economy and regulation. The chapter subsequently examines the size of the IT industry, some peculiarities of the external labour market such as the large supply of workers, where the presence of a large reserve army of labour (or a large surplus labour force) in India implies a different set of

options for managements and IT firms; playing some role in the way they approach their employees and also labour markets, whether internal or external.

This chapter also endeavors to provide a detailed picture of the labour laws and regulations that govern employment in the IT industry. The subsequent analysis of the interactions/interplay between managerial controls and labour regulation — a key analytical quest of this thesis that seeks to extend conceptualisations around ‘controls’, detailed and justified in the conceptual framework in section 2.6 — draws on this survey of regulations. An examination of the employment relationship and the wider political economy should be an integral part of any exercise that tries to examine labour processes in a comprehensive manner (Burawoy 1985; Thompson 1990). Central to such an analysis are the labour institutions that govern work such as labour laws, regulations and legislations (Burawoy 1983; Elger and Smith 2005). Since this study is restricted to the IT industry in the city of Bengaluru, the focus is on the varied aspects of regulation in this location only — i.e. the specific legislations that pertain to and are applicable to the federal State of Karnataka — and the impacts of those regulations.

The empirical and analysis chapters that follow (Chapters 5 and 6) will draw substantially on the discussions on contextualisation that this chapter provides. This context is essential to not just understand the decisions on control strategies made by managements but also contributes in understanding the choices that workers make and how they approach the employment relationship. The chapter begins by charting the growth of the Indian IT industry and the reasons for its elevated importance within the Indian economy. This is done in section 4.1. After that, section 4.2 examines the structure of the IT industry and the different types of work that are part of it. It is here that the various definitions of ITs work and their nature are discussed. This helps in providing a clearer picture of the kind of workers that are being studied and the specific kinds of work they are involved in. In the last section, the chapter discusses in detail the structure of labour laws and regulations that govern work and employment in the Indian IT industry. The federal and concurrent nature of Indian labour laws mandates a location sensitive approach to the labour laws; therefore, the details relate specifically to the location of Bengaluru, which is governed by the federal laws of the state of Karnataka.



## 4.1

### **The Indian IT Industry in the Indian Economy**

As per the population census of 2011, more than half of the entire workforce of India listed agriculture as their primary occupation (Census 2011). This agricultural workforce, like in most countries, is almost entirely in informal employment. However, despite this largely agrarian workforce, India's economy is dominated by services. The services sector in India contributes to around 60 percent of the economy (in terms of nominal GDP in 2016), even though it employs just around 30 percent of the workforce. This is in contrast to the agricultural sector, which employs close to 55 percent of the workforce but only contributes to around 14 percent of the GDP. Rounding up, the manufacturing sector contributes to around 26 percent of the economy and employs 20 percent of the workforce. But what is striking is that even the non-agricultural workforce largely worked in informal, non-standard employment arrangements (NCEUS 2009). As a result, the overall Indian economy is characterised by high levels of informal employment (Chen 2005). It is within such an agrarian and largely informal economy that a relatively large high-tech industry like the IT industry flourishes in India.

In this study, a description of the broader economy serves to illustrate the criticality and importance of the IT industry; for, its importance to the economy lies precisely in its incongruity with the broader economy (D'Costa 2011). The IT industry generates relatively well-paid employment for the large number of highly qualified workers who enter the Indian labour force every year. Along with this it is able to sell its services globally and earn much-needed foreign exchange, thus leading it to also becoming strategically important for the state (Barnes 2013). The industry also has some important multiplier effects, as it creates indirect employment in other affiliated industries too (NASSCOM 2015). Urban industries in sectors such as construction, banking, communication, and also a wide range of support services, such as cleaning/maintenance, security, transportation among others, all rely significantly on the functioning of the IT industry. All of these services industries also serve to provide avenues for formal employment for a large number of workers, whether highly qualified or not, joining the labour force; and this rises in importance in an era of neoliberal policies characterised by declining and informalised employment. Further,

India is a low to middle-income developing country with a growing population; this means that the state is under constant pressure to show high economic growth and the few sectors that can exhibit this growth are often extended support in several ways (explored in detail in this chapter).

Though the Indian IT industry came into prominence relatively recently, it was not entirely a new phenomenon and traces its origins back to the 1960s and 1970s (Arora et al. 2001; Heeks 1996). However, it was not until the 1980s that the industry began to be large enough to have a noticeable impact on employment and the economy. The Indian economy, which had been largely following an import-substitution and socialist model of development since gaining independence in 1947, shifted its stance by adopting more market friendly policies in the 1980s eventually culminating in its economic liberalisation in 1991 (Ahluwalia 2002). The initial growth of this newer phase of the Indian IT industry had started through the sub-contracting of IT work by organisations in developed countries in the 1980s (Mullin 1996). Indian IT firms initially provided international services by physically relocating Indian workers to other countries, a practice that was known as 'body-shopping' at the time (Heeks 1996; Kapur 2002; Xiang 2007). But, by the late 1990s and 2000s, the growth of communication and computing technologies meant that the work itself could be transported and sent to offshore locations — such as India, Philippines, Brazil, Mexico, part of Africa, Eastern Europe etcetera — and the work could be carried out there (Arora et al. 2001; Athreye 2005; Heeks et al. 2001). The growth of communication technologies spurred much of this growth through the 2000s that began from the time of the Y2K crisis around the year 2000. Table 4.1 and chart 4.1 show the growth of the industry over the period of 2000-2015, showing both the growth in the number of workers employed by the industry and its export revenues over time.

**Table 4.1 – Total employment and export revenues of the Indian IT industry (2000 – 2015)**

<b>Year</b>	<b>Employment (in '000s)</b>	<b>Export Revenues (in USD bn)</b>
2000	284	3.71
2001	430	6.54
2002	522	7.93
2003	670	9.86
2004	830	12.97
2005	1,058	18.05
2006	1,293	25.69
2007	1,621	33.22
2008	1,962	47.02
2009	2,196	50.41
2010	2,311	50.91
2011	2,584	57.98
2012	2,841	66.38
2013	3,042	74.75
2014	3,289	83.9
2015	3,520	99.64

**Sources:**

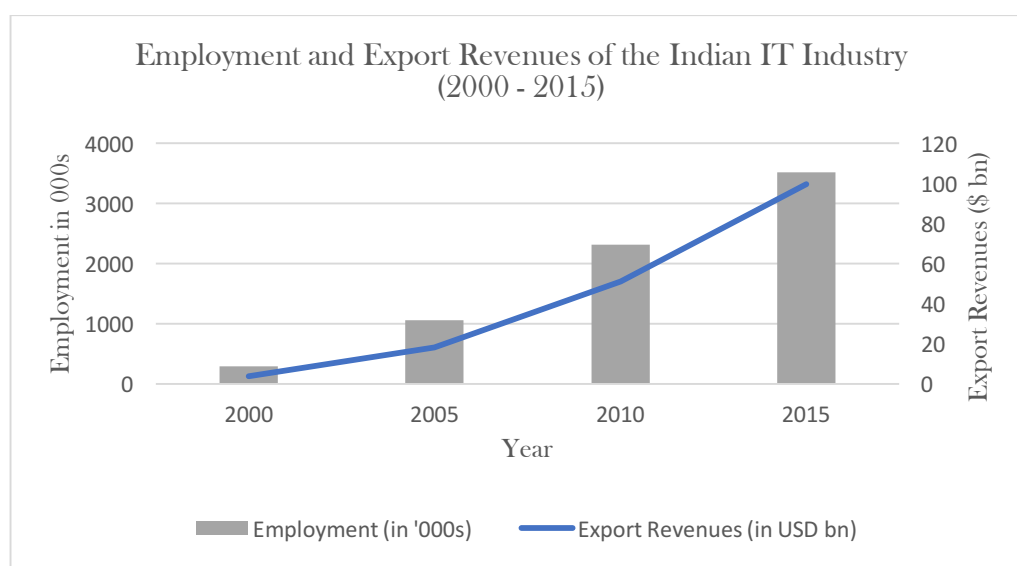
Employment – Author. Compiled from various NASSCOM reports

Exports – Heeks (2015). Indian IT/Software sector Statistics. Available at -

<https://ict4dblog.wordpress.com/2015/04/28/indian-itsoftware-sector-statistics-1980-2015-time-series-data/>

**Notes** – Employment in the IT industry includes all three: BPO, ITS and Software segments.

**Figure 4.1 – Trends in employment and export revenues in the Indian IT industry (2000 – 2015)**



**Source** - Table 4.1

Both table 4.1 and chart 4.1 show the rapid pace of growth of the Indian IT industry from 2000 onwards. By 2015, the Indian IT industry generated annual export revenues of around US\$ 100 billion and employed just around 3.1 million workers directly (NASSCOM 2015). The size and importance of the IT industry can be gauged by the fact that it alone was contributing to almost 10 percent of India's GDP and nearly 30 percent of its total exports in 2015 (MEITY 2017; NASSCOM 2016: 20). The disproportionate size of the industry's contribution is more evident when one considers the fact that the IT industry employed just over 3.1 million workers, which constituted less than 1% of the total Indian workforce (of over 480 million). As a result, even though the IT industry forms a very small fraction of the Indian workforce, its importance as a source of employment and revenue, and its international linkages, has granted it a disproportionate

influence within the economy.

The IT industry's prominence as a sector generating employment for highly educated, highly skilled workers also means that the state accords it special provisions, almost in a routine manner. This is reflected in the manner in which the Indian state approaches the industry. Both the central and federal-state governments provide extensive support to the industry through a slew of incentives. The state actively facilitates the industry's infrastructural needs such as acquiring land, making quick and on priority arrangements for amenities such as electricity or industry-specific requirements related to communication, and according preferential treatment by gearing transport and connectivity infrastructure towards IT clusters while also providing a host of tax and other fiscal incentives (Barnes 2013; D'Costa 2011). This is done both by the national and federal state, and by the urban local city-state that is keen to attract investments to the city, often resulting in competition between federal-states. Apart from direct incentivisation, the state can also play an active role in shaping the labour market — a role Braverman (1999: 302) draws attention to — by catering to the skill and education related requirements of the IT industry (Balakrishnan 2006, Noronha and D'Cruz 2016); for example, federal-states push universities to introduce short-term courses and initiatives for technological skill development and pushes for the expansion of private sector education with a thrust on technical education. These aspects, which address the shaping and formation of the labour market, are considered significant, but are not explored further as they are outside the scope of the analysis of labour processes and managerial controls. Further, there can be a large number of segmentations and 'fractions' (refer Edwards 1979) within labour markets, some of which are unique to India (such as those related to caste, region, language etcetera).

While state incentivisation may indeed have given an impetus to the growth of the IT industry in India, it is widely understood that the main factor for driving offshoring to India are the lower labour costs (Flecker 2007; Noronha and D'Cruz 2009: 43; Ramioul et al. 2005; Taylor and Bain 2007). Labour cost arbitrage apart, India also offered a degree of linguistic compatibility with English speaking countries, this being largely a legacy of its colonial history (Mirchandani 2004; Taylor and Bain 2004). While a range of such factors (discussed in chapter 2) made India an attractive location to offshore work, it must be noted that there were also some 'push' factors as well. Organisations in developed countries faced slowing economic growth rates, difficulties in retaining support workers

and cost reduction pressures during economic downturns; all of these motivated managerial attempts to reduce costs and maintain their margins (ibid).

Over time, the Indian IT industry has become a dominant player in the overall IT services offshoring market. It manages to capture around 55 percent of the total value of all applicable international offshoring contracts (NASSCOM 2016: 6). But at the same time, these offshoring relationships have also built dependencies, where Indian IT firms see their share of domestic revenues to be far less than that from international contracts. Almost 70 percent of the industry's revenues are derived from exports (ibid). The growth in such international services provided by the Indian IT industry since the late 1990s has made India a key location globally for the offshoring of a wide range of IT related services work. The industry has grown to incorporate more and more diverse types of IT and services work, and this has also contributed to an increasing heterogeneity in the types of IT work being carried out by the industry while integrating it horizontally into various organisations (refer Flecker and Meil 2010).

## 4.2

### **IT Services and the Internal Structure of the IT industry**

The different forms of IT work that the Indian IT industry has grown to be comprised of, including the segment of ITS work — which is the subject of this study — are explored in greater detail in this section. Though the IT industry has been well established in several countries for some time now, there have been few attempts at understanding its internal structures or the different segments of work that comprise the industry. Beirne et al. (1998: 144) point out that the work done within the IT industry is fairly heterogeneous and is characterised by large variations in the “...nature of the work, status, pay and job controls”. To an extent, some of the lack of clarity about the industry has been caused by its fluid and evolving nature; in some cases, blurring the boundaries between core work and organisations because of horizontal integration into various business functions and also due to the fact that almost all forms of work have now incorporated some degree of computing and IT into them. Computing and technology infrastructures, are now an integral part of almost every organisation, and therefore separating out the IT workers of such organisations from those who are not becomes a complicated exercise.

The IT services occupations are often embedded within the operations of other industries as computerisation and digitisation provide the basis for increasing efficiency in the core operations of other industries (Huws 2014). As a result, the employment-related effects of the IT industry can be often difficult to quantify. Such difficulties are compounded by the fact that many IT workers also work part-time, online/remotely or in other non-standard employment contracts, meaning that comprehensively identifying and statistically mapping these workers becomes a difficult exercise. This basic difficulty in identifying the employment-related effects of the IT industry and outsourcing have been pointed out in several official reports that try to map the extent of employment in IT work (see GAO 2004; ILO 2007; MIT 2006 and TUAC 2004).

It is also generally acknowledged that several difficult definitional issues plague the IT industry and its sub-sectors (World Bank 2011: 2). Different countries use different classification systems to try and define what constitutes IT work. As a result, there can often be large inter-country variations over the terms used, their meanings and their scope; this can also perhaps hinder the development of a comprehensive understanding of the IT industry. The IT industry encompasses everything from the design and manufacture of computing hardware, the installation and setting up of communication and computing systems, the provision of various support services for all such devices, as well as the programming and coding of different types of software (NASSCOM 2014). Given this study is concerned exclusively with ITS work, it is possible for us to cut through all the different types of IT work and look only at what constitutes this work.

Though much of the IT industry is evolving and relatively new, ITS work has been around for quite some time along with the closely aligned software programming work. It arose from a specialisation of workers who were focused on the IT infrastructure. Braverman (1999: 227) observed how the profession of IT work had undergone changes in the 1960s and early 1970s.

In early computer installations, the programmer was generally a systems analyst as well, and combined the two functions of devising and writing the system. But with

the encroachment of the division of labor, these functions were increasingly separated.

Braverman (ibid) refers to the ITS workers as 'system analysts' and describes their work as:

...the office equivalent of the industrial engineer, and it is his or her job to develop a comprehensive view of the processing of data in the office and to work out a machine system which will satisfy the processing requirements.

The varied types of work that are required in operationalising an organisation's computing needs implies that ITS work can be comprised of a wide variety of tasks. ITS work can therefore be more varied when compared to call-center or even software development work. ITS work thus encompasses a wide range of computing-related functions, and unlike call-centre or software work, it often involves a "...rather complex inter-relationship between client and vendor" (Flecker and Meil 2010: 684).

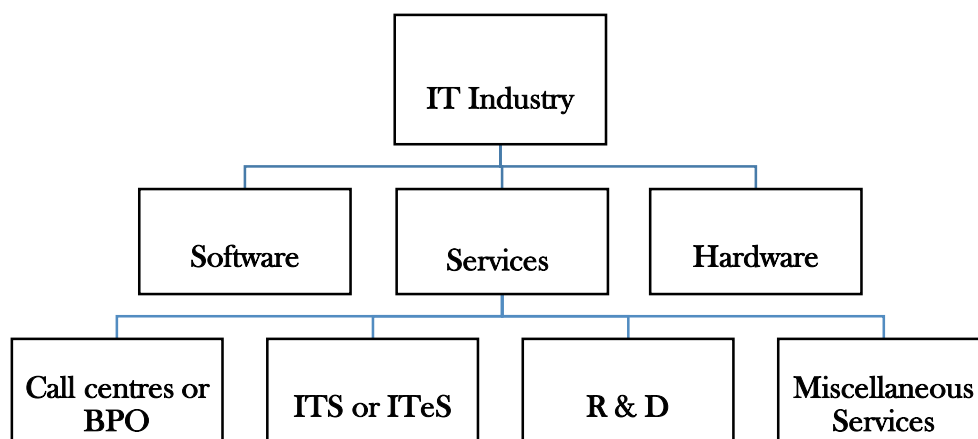
The variety in such work is to some extent reflected in official statistics that attempt to keep track of the number of these workers. For example, in the US, as per the official job classification statistical system, ITS workers are classified under the three different heads: 'Computer Analysts', 'Computer Administrators' and 'Computer Support Specialists' (BLS 2016). If we take the case of the UK, the ONS's SOC2010 classification system classifies all forms of IT work as 'Associate Professional' and 'Technical' occupations, and within that ITS workers are usually classified under a single generic category of 'IT Operations', being distinctly different from 'Programmers' (ONS 2016). In the case of India, the Indian IT industry's employers' body, the National Association of Software and Services Companies (NASSCOM), is the only organisation that collects information on employment in the IT industry on a regular basis. The NASSCOM's own classification system provides insights and statistics based on these classifications, and usually covers all IT services work under an umbrella term, 'IT-enabled Services' (ITeS or ITS) (NASSCOM 2014: 10). The NASSCOM defines ITS work as work that involves "...systems integration, IT outsourcing/managed services/hosting services, training and support/maintenance". (NASSCOM 2014: 76). ITS work usually involves the installation, configuration and



maintenance of an organisation's networks, computers and other supporting digital infrastructure (such as printers, servers, routers, mainframes and so on). By now, it becomes fairly clear that such work can neither be classified as programming/coding or call-center work, and is significantly different from either of these. ITS work had traditionally fallen within the domain of local IT departments, whose consolidation led to the creation of specialised IT services firms doing such work. Though there are several further (private) ways to define ITS work (see for example the ISO/IEC 30105 standard), these are not discussed in detail, because ITS work as a distinct occupational type is already established here, albeit one with several classification issues. Further, ITeS or ITS can be used as a term to generally refer to these forms of work (for example, Flecker and Meil 2010) and is therefore chosen as the appropriate term refer to this type of work.

ITS work usually forms a significant portion, if not the largest portion of the IT industry in most countries. For example, in India, ITS work constitutes the largest segment of employment — around half of all workers in the IT industry — within the country's IT industry (NASSCOM 2014: 41). Large American IT multinationals (such as HP, IBM, Accenture) and similar Indian ones (such as Infosys, TCS, Wipro, HCL etcetera) offer a wide range of services. In order to develop an understanding of the various services provided by such firms, it is useful to understand the broad structure of the IT industry, and this can be seen below in Figure 4.2.

**Figure 4.2 – Structure of the Indian IT industry**



Source – Author, adapted from NASSCOM 2014:10

Among the important types of services that are provided by the IT firms, the major segments are the call center (or BPO) services, software services and ITS services. Much of the call centre industry had initially grown out of the consolidation of a host of support services, largely meant for the banking and financial industry (Callaghan and Thompson 2001; Taylor and Bain 2004). While the other important segment of the IT industry concerns the creation and development of software, which encompasses work that involves the coding, development, debugging, deployment and updation of computing software and applications (Ilavarasan 2008; Kraft 1977; Kraft and Dubnoff 1986). Both call-centre services and software development have also been studied extensively, and chapter 2 had reviewed the literature on some of these segments and how various managerial control strategies have been deployed in them. This does not preclude the possibility of the growth of new services such as back-office services, accounting, consulting, payroll and HR administration services that have been growing in recent years (Willcocks and Lacity 2006), and have been classified under the miscellaneous head.

Within the Indian IT industry, ITS work has the highest number of workers (around half) among the three major services segments of the industry; while, in terms of revenue, it is larger than the call-center services and only marginally smaller than software services (NASSCOM 2014: 108-110). This study attempts to present a more nuanced view of the various internal segments of the IT industry, a task that is often not carried out with clarity in scholarship (Beirne et al. 1998).

In terms of knowledge, it is well known that different types of services work require vastly different levels of knowledge (Frenkel et al. 1995). To some extent, this is also reflected in industry statistics where almost 70 percent of ITS workers have technical educational qualifications, while non-technical graduates make up only 12 percent. As an illustration, the situation is reversed in the case of call-centre workers, where around 70 percent of the workers have non-technical qualifications and only around 15 percent of the workers have technical qualifications (NASSCOM 2014: 73). Such variations in the qualifications of the workers are also taken to be somewhat indicative or even a consequence of the large differences in the nature and form of the different types of IT work.

### 4.3

#### **Labour Regulation in the Indian IT Industry**

Socio-legal scholars have pointed out that the framework of labour regulations that govern IT work in India is relatively underexplored (Penfold 2009: 92). Any examination of work and employment in the Indian IT sector, particularly one that takes the conceptual approach of this study, cannot proceed without an elaboration of these regulations; this section details the different kinds of labour regulation by the state both at the national and federal-state level. Unlike much of the Indian economy — that is dominated by informal employment — the Indian IT industry largely comprises of formal registered enterprises that provide full-time, formal, regular employment (Taylor et al. 2008: 40). As a result, most of the central and federal State labour laws are applicable to the industry. Despite this however, there is also a wide prevalence of the idea that IT work is not covered by labour laws and legislations (Noronha and D'Cruz 2009: 44-5). The reasons for such a perception are not entirely clear but it perhaps owes to the plethora of exemptions from labour regulation that the IT industry has been granted over time (Noronha and D'Cruz 2016; Sarkar and Mehta 2010). However, these perceptions or confusions notwithstanding, in reality almost all the country's usual labour laws are found to be applicable to the Indian IT industry (Noronha and D'Cruz 2009: 44). This section examines the specific laws and regulations that are applicable to the sector. This contributes to building an understanding of the regulatory context within which certain managerial strategies are selected, the reasons why they are selected, and whether and how regulations might curtail managerial controls.

Starting at the highest level, the Indian national constitution guarantees some rights to workers: it guarantees workers the right to form associations or unions as well as the right to practice any profession, occupation, trade or business (Constitution of India 1949 art.19). Further, among its policy directives, it directs the state to ensure that workers get a living wage, ensure equal pay for equal work, and provide for the right to work where possible (ibid art. 39-43). These guidelines have led labour scholars to view the Indian state as being fairly protective of the rights of labour and workers (Penfold 2009: 93). It is important to note that labour laws in India are 'concurrent', which means that both the

national and federal State governments have the ability to formulate and amend labour regulations as per their own requirements. While this is beneficial given the diversity that exists among federal-States in India, this flexibility also gives rise to large regional variations in the applicability and regulation of labour laws; it also leads to a multiplicity of laws, often leading to arguments about their overt complexity and multitudinous case-law interpretations (Debroy and Kaushik 2005; Mitchell et al. 2014). Given that the location of this study is the city of Bengaluru in the federal State of Karnataka, we are able to limit our examination and subsequent analysis to this State only.

The IT industry in Karnataka is governed by a total of 27 labour laws, of which 23 are Central laws and 4 are federal State laws. The entire list of labour laws applicable to IT firms in Bengaluru can be viewed in Appendix B. Within them, the primary or main law that governs work and employment in IT firms is the Karnataka Shops and Commercial Establishments or (K)SCE Act, 1961 which is a law that is specific to the federal States (Noronha and D'Cruz 2009: 44; Penfold 2009: 94). Most Indian IT firms register under this Act and so are governed by the rules and regulations in them. The (K)SCE Act, 1961 covers a range of aspects of employment including but not limited to:

- i) Provisions around appointments, their details, how and what details of the terms and conditions of employment should be included
- ii) Working Hours, overtime, breaks, holidays
- iii) Firing of workers, the procedures to be followed for termination, types of misconduct, appeals procedures
- iv) Inspections, compliances as well as fines and punishments for firms for contravention

The SCE Act, 1961 forms the principal basis for determining the working conditions and employment relationships in a large number of services industries. However, as discussed in the previous section, the federal-State of Karnataka specifically granted the IT industry an exemption from some of the clauses in this legislation (Noronha and D'Cruz 2016; Penfold 2009). An amendment in 2001 provided the IT industry with exemptions regarding working hours, leaves and holidays. This was provided to IT firms in order to give them the flexibility to run their operations 24x7, throughout the year and including weekends. This was necessitated by the global nature of this industry, which catered to clients in geographies across the world and spanning a variety of time zones and national

holidays.

All Indian IT firms register themselves under the SCE Act and are governed by the rules and regulations laid out therein. At the outset, it can be debated whether this Act is appropriate for work carried out in the IT industry: The SCE Act was largely formulated keeping in mind general commerce-related establishments such as shops, hotels, restaurants, commerce-related firms (such as banks) and other places of “public amusement or entertainment”. Crucially, it was a clause that allowed for the inclusion of establishments that “engaged in office work”, that paved the way for relatively newer industries such as the IT industry to register under it. As a result, even though the registration is legitimate, it is important to note that the Act was never formulated (when enacted in the 1960s) keeping such work or working conditions in mind. Secondly, a 2012 ruling by the Bombay High Court ruling (*Reliable Software Systems Pvt. Ltd. vs. ESI Regional Office, Marol*) has indicated the possibility that IT firms can be classified as ‘factories’ as the software development process could be viewed akin to a manufacturing process (Gopalakrishnan and Shroff 2012). However, registration under the Factories Act, 1948 would entail the implementation of far more rigorous standards regarding working conditions; by registering themselves under the SCE Act, IT firms are able to spare themselves of the sophisticated regulations entailed in the former (Raghavan and Gupta 2012).

Another key exemption granted to the IT industry in Karnataka is from the Industrial Employment (Standing Orders) or IE(SO) Act, 1946 (Noronha and D'Cruz 2016). This law would have required every IT firm in Karnataka to publicly display a list of ‘standing orders’ that were applicable in their workplace. Some of the aspects that a firm’s standing order should include the —

- i) Classification of workers, e.g. permanent, temporary, probationers
- ii) Manner of informing workers periods-hours of work, holidays, pay-days, wage rates.
- iii) Rules around shifts, attendance and late coming.
- iv) Conditions for suspension or dismissal for misconduct, termination of employment, and the notice to be given by employer and workmen.

The IT industry in Karnataka has been exempted from the IE(SO) Act, 1946, an exemption that has been extended or renewed for the industry ever few years since 1999. As a result of this exemption, IT firms can avoid some important procedural formalities — such as publicly declaring and displaying the workplace rules and regulations — while also avoiding several procedures related to obtaining permissions from worker representatives. The latter would/could open the door for collective bargaining or representation of workers even through informal unions, both of which are side-stepped through this exemption (Noronha and D’Cruz 2016).

These two exemptions provide some evidence for the claim of a different and special legal and policy treatment of the IT industry. Some uncertainty about the state of regulation in the sector arises also from confusion in matters regarding the jurisdiction and applicability of labour laws within state-sponsored and incentivised Special Economic Zones (SEZs), and its variants such as the Software Technology Parks of India. A significant number of Indian IT firms are located within such zones so as to benefit from the infrastructural and fiscal incentives that are provided to all firms located there. But from the perspective of labour, such ‘zones’ present a level of ambiguity: these zones, in many instances, have been designated as ‘public utilities’, akin to public services such as water, electricity etcetera, as defined in the Industrial Disputes Act, 1947. This classification brings with it restrictions on industrial action, which is highly curtailed if not outright prohibited (Mazumdar 2001; Murayama and Yokota, 2009).

What complicates the picture further — compounding the challenges presented by a regime defined such dilutions, exemptions and uncertainties — is that the existence of legal labour regulations is not a sufficient pre-condition for their implementation and/or enforcement in India (Bhattacharjea 2006; Shyam Sundar 2015). Indeed, after examining the specific case of Karnataka and the legal avenues that aggrieved workers in the IT industry might have, Penfold (2009: 95) concludes that “... the current enforcement regime can offer little realistic hope to employees seeking to remedy their workplace problems”. It would be accurate to understand that the granting of exemptions on labour regulation has contributed to what scholars find to be a general perception, both among IT workers and

with the general public, that somehow labour laws are not applicable to workers in this sector (Noronha and D'Cruz 2009: 45). It is then not altogether speculative to argue then that the general reticence to unionisation and collectivisation among workers in this sector, and the failures in attempts to organise workers (noted in Noronha and D'Cruz 2013; Sandhu 2006; Sarkar 2008), could owe in some degree to the absence of a clear picture of employment regulation in the industry. It is important to note that there are several reasons attributed to the reticence for collectivisation and unionisation; these range from internalised notions of 'professionalism' reported among IT sector workers (Noronha and D'Cruz 2009), perceptions of a privileged position of IT jobs when compared to the rest of the economy (Poster 2007), to the deployment of modern HR practices that discourage such efforts (Thite and Russell 2009). What it (lack of unionisation) cannot be taken to mean is that workers do not face any issues with their work: on the contrary, Taylor et al. (2009) show how despite the application of several HR best practices, call-centre workers in the Indian IT industry still have numerous grievances which were not addressed by IT firms within which they worked. Apart from the workers' hesitation to form collective organisations and several management strategies that actively discourage collectivisation in these workplaces, the lack of history of organising workers in these industries also means that such workers' organisations face many more difficulties because they need to be built from scratch (Doellgast and Pannini 2015).

Overall, we have seen that even though the Indian IT industry is covered by the relevant labour laws and legislations, the rights of Indian IT workers are entangled in a complex web of uncertainty, exacerbated by their exemptions and applicability. The inability of workers to be able to take collective action has meant that workers in such contexts sometimes shift conflict to the realm of the state (Agarwala 2008). Edwards (1979: 200) had noted that how there had been a shift in workplace conflict from the workplace to the political arena of labour legislation. This shift of workplace conflict towards the state's political sphere had —

....tended to make capitalist control over state policy both more essential and more uncertain: more essential, because capital needs the state to direct the accumulation process; more uncertain, because working-class fractions have significant impact on the formulation of state policy. (Edwards 1979: 202)

This makes an analysis of extant labour regulations even more critical to the any study of work. Building on this logic, the findings and analysis chapters that follow are sensitive to such complexities in regulation and incorporate their role and influence while trying to understand various managerial control strategies and how the workers' respond to them.



## Chapter Five

### **The Deployment of Technical Controls in ITS work and Contestations over Knowledge**

This chapter presents and analyses the empirical findings that emerged from the field research based on the conceptual framework and research questions elucidated in Chapter 2. The discussions that follow have been developed out of the key themes that emerged out of the qualitative semi-structured interviews that were conducted as part of the fieldwork. Interviews were conducted with four distinct groups: workers, managers, trade unionists and government officials, as explained in the chapter on research methodology (chapter 3). The discussions in this chapter are largely based on these interviews and have been supplemented, where useful, with secondary sources such as industry statistics and reports, news articles as well as other publicly available information. This is the first of two empirical chapters. The analytical foundations for this chapter are based on Edwards' (1979) conceptualisation of structural controls embedded in work; it is the various aspects of 'technical controls' that are presented and analysed here. The other aspect that the chapter deals with revolves around the acquisition and control of knowledge of work that precedes technical subordination and division of labour.

The chapter begins by examining the manner in which ITS work is organised and carried out within IT firms. Several aspects of the manner of organisation are not clearly understood in literature and so the organisation of work is explored in detail; especially the manner and 'pace' of allocation of work. Such aspects are examined and discussed in section 5.1. After developing an understanding of the manner in which work is allocated to each worker, section 5.2 examines aspects related to the quantum of work allocated to each worker, and whether and how there have been changes to this over time. Section 5.3 examines how workers manage their time while carrying out the work allocated to them and how managers play a role in. How managements carry out monitoring of the work and how workers react to this are examined in section 5.4. The introduction of new technologies, especially automation, and its effects on ITS work are examined in section 5.5. The chapter then moves to examine and analyse some of the issues around knowledge, its appropriation and the implications for managerial control, all of which are discussed in section 5.6. After that, section 5.7 provides a summary and a discussion of the findings in

the chapter. The chapter ends with section 5.8 that provides some concluding remarks about the key findings and contributions presented in the chapter.

## 5.1

### **The Fragmentation and Allocation of ITS Work**

The primary means by which structural technical controls are deployed is by embedding it into the pace of production, thereby obfuscating the role that had been played by managements in determining the pace with which the work is to be carried out (Edwards 1979: 112). What this does is minimise the problem of the transformation of labour power into actual labour by forcing the pace of work in a continuous and standardised manner, while at the same time not revealing the decisions behind the determination of the pace of production, thus making it appear as a seemingly objective rule. The pace of production is perhaps more easily visible in the case of industrial production, where the allocation and pacing of work clearly moves according to the pace of the assembly line. But the assembly line actually combines two elements of the pacing of the work: the pace at which work is allocated and the pace with which the work needs to be carried out. In the absence of a single production line in the case of ITS work, these two elements of the pace of the work get separated and so these two elements are examined separately. We first examine the manner and pace with which work is allocated and then subsequently, the pace with which it is executed.

Through the field interviews, it is found that there is no clear, single method by which the work was being allocated. It must be noted that the interviews were conducted with a wide range of ITS workers across varied work and technical profiles, and significantly, across company types as well. However, three broad ways of organising and allocating work did emerge from the interviews. These may be delineated as: the digital ticketing system, the project system and a combination of the two. Each of these result in their own unique dynamics on the way work is subsequently carried out. The following subsections deal with these types of organisation of work — work that is organised around a ticket-based system (section 5.1.1) and project-based system (Section 5.1.2) — found in IT firms.

### 5.1.1

#### **The Ticket-based System: Discrete Fragments of Work**

The most common method for organising and allocating ITS work, cited by most of the interviewees, is through the use of some form of a basic ticketing system, which results in the creation of a queue of ‘digital tickets’. Much like common ticket-based customer services, such ‘digital tickets’ contained a problem to be fixed or a task to be completed, and would also include all the necessary technical information required to carry this out. One worker explains such a system:

We have a ticketing tool called ‘Remedy’. If a customer is facing an issue, they will raise an issue. This issue will go to a service desk who will decide the team to which it needs to be assigned. So if it is a network issue, it will come to us, the network team. This is how it works for normal issues but if there are some very important issues, the service desk can directly contact us via email also. (Worker 14, Senior Analyst – Networking, Large European IT firm)

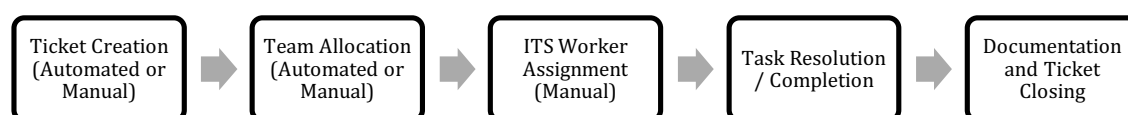
ITS workers are grouped into teams and each team specialises in a certain type of work and have their own team queue. Each worker or member of a team is required to individually select and work on a ticket. Thus, even though the ITS workers are grouped into teams, there is little team-work — the work itself is fragmented, discrete and individualised — with each worker going through the list of tickets, completing or fixing them one at a time individually, by themselves.

There appears to be little or no direct involvement of managers in the process of allocation of work. Workers explained that tickets could be created and allocated in a variety of ways. In most cases, the creation of the ticket was done manually, either by a first-line technician (a ‘front-line’ worker) or by the client. In some cases, this had been automated and the tickets were created and allocated through a wholly automatic process, usually beginning with the automatic detection of a problem in an IT system, which then generated alerts, automatically creating tickets and sending them to the responsible team.

[N]o specific person is assigning the work to us, this is generated by the monitoring tools. That's one category. The other category is customer requests — some customer requests may come directly to us. But the management's direct involvement in giving work is less for us. (Worker 03, System Administrator, Large American IT firm).

Overall, we can observe that any piece of work that needs to be done is therefore usually manifested in the form of a discrete ticket, allocated to the appropriate team of ITS workers and then the task or problem that is to be addressed is completed by a member of the team. Once a piece of work that is required of a ticket is completed, ITS workers would record the details of how they fixed or resolved the issue. This workflow has been visualised in Figure 5.1 below.

**Figure 5.1 – A common ticket-based organisation of ITS work**



Source: Author

Generally, the process of creating tickets, allocation and working was found to be organised systematically where the workflows were highly standardised, often following tightly regimented guidelines based on IT service management procedures borrowed from IT Infrastructure Library (ITIL) models or Agile models. The workflows are often tightly organised and systematised using some sort of specialised ticketing software or other similar tools which are utilised to organise the work. For one senior technical consultant, the high degree of fragmentation and standardisation of the work evoked images of a factory<sup>3</sup>:

---

<sup>3</sup> Also refer section 4.3, where a High Court indicated that it viewed some forms of IT work as being similar to manufacturing.

[E]ssentially what you are seeing is that it is becoming like a factory. There is even a term called 'software factory'. Really, from an employee's view, he contributes only to a part of it. As in, you're, like, in an assembly line. You go and start doing only one part of the work. So, the quest for efficient work is invariably linked to this. Because, at the end of the day, it is like any other industry, it is a human industry. So the question is, how do you create an assembly line for IT work? (Manager 08, Senior Consultant, Large American IT firm)

Once the worker completes the required work or task in the ticket, and the ticket closed down, workers then manually visit their team's central queue of tickets and select the next ticket to work on. Here, there are few pressures. Most ITS workers said that they would usually review the tickets in the queue and select one based on their own areas of expertise or interest, while others said that they would just select the next ticket in the queue and proceed to work on it. In this, the workers appear to be afforded a degree of autonomy, both in terms of the time taken to move on to the next ticket and in the selection of the ticket. But once a ticket has been selected by them, they are responsible for the work required of the ticket and also responsible for completing it within the specified timeframe. This general process is repeated by each member of a team of ITS workers and they work their way through their queue of tickets, going through them one by one.

At the outset, there does not appear to be any specific pace at which the work is initially allocated or assigned to the workers. Workers could take their own time moving from one next ticket/task to the next. However, once the ticket is allocated to them, then their time is limited by the need to adhere to whatever timelines have been specified in the ticket. However, apart from this, there is little direct pressure put on the time of the workers between the completion of one task to the beginning of the next, something that is central to work allocation in assembly lines or ACD-type call centre systems (see Bain et al. 2002; Batt et al 2009; Noronha and D'Cruz 2009; Taylor and Bain 1999).

When organised in this form, the pace with which each ticket (or work) needs to be completed is determined by the category of the ticket. Tickets are designated standard

categories after being created and this determines the speed with which they need to be completed. Workers described how each ticket is allocated a level/category/priority/severity and this determines the time within which the work in the ticket needs to be completed and closed down. Thus, the moment a ticket arrives in a team's queue, it needs to be completed within a certain amount of time that is guided by the level that has been allocated to it. However, the length of these timeframes themselves or the appropriate level that a ticket is to be allocated is determined much earlier, in agreements signed between the offshored IT firms and their clients.

Clients or lead organisations govern the services to be provided through a host of specifications for the work to be delivered known as Service Level Agreements or SLAs (Ellram et al. 2004; Noronha and D'Cruz 2009: 73; Taylor 2010). The quality of the services that are to be provided are clearly specified by the clients and this governs the targets to which the work is to be carried out. In the case of ITS work, SLAs require some of the most important and critical types of issues to be categorised as 'high importance' so that they are accorded preference and get fixed quickly. For example, certain issues may be classified as Level 1 tickets and these are to be fixed or resolved within 4 or 8 hours. That means the moment a 'Level 1' ticket is created, the IT firm and the workers need to ensure that the issue be fixed within the next 4 or 8 hours. A ticket with lower importance, let's say Level 2, could have to be completed within 24-48 hours (or according to what is specified in the SLAs), and so on. Such terms and service quality specifications would also contain the result of any failures to complete the work within these timelines and this could also invoke heavy financial penalty clauses. All of these would be detailed in the SLAs that have been signed between the client organisations and the IT firms.

It is well known that SLAs are extensively utilised in offshoring and outsourcing relationships to govern the quality and quantity of the services being provided (see Ellram et al. 2004; Noronha and D'Cruz 2009). However, what is also being emphasised here is that the determination of work timelines is decided well in advance by managements. Not only this, but the SLAs also exhibit how the offshoring and outsourcing relationship creates extended managerial hierarchies, wherein the determination of the pace with which the work is to be carried out is usually decided in combination by the managements of both the 'source' client organisations and 'destination' IT firms. Thus, the decision of the

pace with which the work needs to be carried out is effectively made much before the work actually reaches the ITS worker, completely taking away such decisions from the worker and appearing as ‘objective’ rules made by managements.

### 5.1.2

#### **The Fragmentation of Project-based Work and Other Combinations**

While the use of tickets and ticket-based queues was cited by most interviewees as the usual way to organise ITS work, this is not the only one. Another common way of allocating such work is in the form of relatively short, well-defined projects. Some forms of ITS work were organised either solely in the form of short or medium-term projects or in combination with a ticket-based system with these projects running in the background. For several ITS workers, both ticket-based and project-based work were often been carried out simultaneously.

In cases where projects are running in the background along with ticket-based work, the manager directly allocates the work to each individual worker. Sometimes these projects would span long timelines, running into months or even years, and that it was entirely plausible that, at any given time, several such projects might be running in the background.

[B]ecause of these projects, one part of our work [with the ticket-based work] is constant, while the other part changes and, of course, I will also be getting other requests from managers. (Worker 08, Support Engineer, Large Indian IT firm)

That [manager] will assign the work to the people here. She will check with us, what we are allocated, how much work we have...because we have different types of work coming in. And depending on that, she will assign. There is individual work and there is work where we have to work as a team...We do have ticket-based work also but that is comparatively very less. (Worker 20, Senior Technical Lead, Large American IT firm)

In such a work organisation, the manager allocates work personally. And so, they would also have some mechanism to keep track of how much project-related work has been

allocated and would factor these along with the total amount of ticket work that is being carried out by each worker per day. As a result, the amount of work to be done every day could vary substantially. This was especially found to be true of certain types of ITS work, particularly those that needed to be executed over a longer timeframe.

When organised wholly in the form of projects, it was found that project management techniques (often inspired from software production processes), such as the *Agile* model were utilised to organise the project. *Agile* is a fairly well known project management technique, and is seen as a way to improve the management of large IT projects while at the same time maintaining some degree of 'agility' (Highsmith 2001). When applied to large teams and projects, the technique involves fragmenting and splitting a project into smaller, well-defined portions and then allocating the work to different workers so that it is executed in parallel (Ogunnaike and Ray 1992). The idea here being to complete a large project quickly by executing it as a series of small projects that are run simultaneously and parallelly. For ITS workers, large projects are divided into smaller portions with deadlines usually set on a weekly or monthly basis. In keeping with the *Agile* terminology, each round of work is known as a 'Sprint', with the objective being to complete a large project in a series of short sprints.

So in the initial team meeting of the project, there will be a list of jobs. They [the team lead/manager] will read this out and they will explain that this is what the work is – and how it can be done. Then they will usually ask if there is anyone who would like to take it up or whether they can assign it. Usually their selection depends on the levels of experience – there are a few things that juniors can't do and few things that seniors can do. (Worker 22, Senior Engineer, Large American IT firm)

So, when the managers follow Agile, there are many software available in the industry. So they know how many tasks they have given, what is the status, what tasks are assigned to what members. So everything will be visible in the [Agile management] software. So they have no need to go and ask the individual members. Say for example, if I have taken one task, initially everything will be 'Status – New'. Once, I start working on it, I will change it to 'Status – Active'. Once I have completed the task, I will change it to 'Status – Closed'. And so the manager will see



that I'm free and available....In the morning, in the Scrum meeting, which usually lasts around 15 minutes, every member of the team has to tell what they did yesterday and what they are planning for today. (Worker 24, Senior Consultant, Large Indian IT firm)

In such systems, managements request updates the first thing every working day in a team meeting called a 'scrum', where all the workers in the team had to not only update (this is done publicly in the presence of the rest of the team) of the work that they done the previous day, but also what they were planning to do that day. The manager who conducts this meeting or allocates the work, is called the 'scrum Master' and s/he would have the responsibility of allocating individual tasks to each employee and then constantly reviewing the progress. A key insight from these descriptions of the allocation of project-based work is the high degree of fragmentation and standardisation of project work. A large project is split into a number of smaller discrete fragments. Just like ticket-based work, project work has already undergone a high degree of modularisation and fragmentation before it reaches the individual worker. Workers have little or no say in the formation of these fragments though they are provided autonomy to select the fragment or task that they prefer to work on. Once a task is allocated, managers monitor the progress of each task using a combination of daily meetings and management software.

Strikingly, some of these mechanisms — that involve daily and 'public' appraisals of the progress and work output — echo some of the strategies adopted by F.W. Taylor during his experiments with scientific management nearly a century earlier. Manual workers used to be given slips of paper that had details of the amount of work that they had done on the previous day, and this was done first thing on the following morning (Taylor 1947[1911]: 52). For Taylor, not only did this practice serve to inform the worker, but also the worker's colleagues, of the amount of work that they had done the previous day and then compare it to the targets that had been agreed. This also forced the workers to admit by themselves whether or not they had achieved the targets that had been set out for them and which had been previously agreed upon (ibid).

While we have seen that project work is modularised and fragmented, it must be noted that it is also standardised in terms of complexity. Managers (personally) nominally rate each of the fragmented tasks in terms of its complexity and this determines the speed with which each fragmented portion needs to be carried out.

So these tasks are divided according to complexity level. So usually we have 'Simple', 'Medium' and 'Complex'. 'Simple' is around 3 hours of work. 'Medium' is around 5 hours. And 'Complex' is around 8 hours. And then based on this, they expect you to complete half the work or the entire work in a certain amount of time — and this they will check daily in the meetings. (Worker 22, Senior Engineer, Large American IT firm)

Large projects are thus decomposed and fragmented into smaller tasks and these newly created tasks are standardised by assigning them levels according to their complexity. Though these tasks can be varied, they have been standardised in terms of the complexity levels (and therefore the time expected for their completion) that is allocated to them. The difficulty level — of 'simple', 'medium' or 'complex' — that is assigned to each and every task, seemingly makes objective what is really a managerial decision about the judgment of the size and complexity of the task, and therefore the time that it will take to complete it. Not only this, all workers are homogenously expected to complete such 'mental' work at the same pace that is expected of them by their managers, with little regard to skill or knowledge abilities. The result is that this creates continuous 'mental' pressures on workers to complete the tasks as per the manager's demands or run the risk of appearing incompetent.

In the organisation of project-based work, what is also similar to ticket-based systems is the autonomy provided to the workers in the selection of tasks that they would like to do. Thus, in both of these systems of work allocations — whether with tickets or with short projects — there appears to be some degree of autonomy afforded to the workers in the selection of the task. Managers afford workers the freedom to voluntarily select any specific task. But it is precisely this, for anyone to take up any part of the fragmented work, which also highlights other important logics of standardisation in the form and output of each worker. Firstly, for all the discrete fragmented tasks to be subsequently re-combined

and reassembled once again implies that the output of the workers has also been standardised and modularised in such a way that the various fragments can be subsequently reconstituted even after they have been completed by completely different workers. And secondly, the provision of autonomy in work selection serves to indicate how managements are confident of retaining control over the work; this being achieved by ensuring that the work is standardised in terms of the time taken to complete it. In sum, the examples of both forms of work organisation demonstrate that the pressure to complete work within fixed timelines remains constant throughout ITS work; decisions on the pace with which the work is to be carried out have long been dissociated from the workers. While there are few pressures in task selection, once a task is selected, then workers have to ensure that the work is completed within standardised time-frame. This is based on the timeframe specified by the ticket or the grading giving to the task, both of these aspects are usually pre-decided by managements.

## 5.2

### **The Gradual Increase in Work Targets and its Legitimation**

The previous section demonstrated how ITS work undergoes extensive fragmentation and standardisation, wherein the work is transformed into discrete tasks usually with pre-decided speeds associated with them. Whether organised in the form of tickets or as short projects, managements assess the complexity of the work which then determines the speed at which the work needs to be executed; this takes away from the workers any ability to make decisions related to the time required to do the work. Following on from there, this section explores how much work needs to be completed by each worker at these pre-determined speeds, whether this amount has been changing over time, whether workers are actually able to complete the work and what happens when the workers are unable to complete the work within the stipulated time-lines.

ITS workers are usually expected to complete a certain quota of work every day or every month. But the amount of work completed every day was not static and in reality, it varied on a daily basis. The amount of work varied according to the criticality of the issues being handled, the stage at which the project was or in some cases, even the time of the year.

This was reported by almost all workers, who described some days as being extremely busy with a continuous stream of tasks, while on other days, it was entirely possible that they don't have any work at all. This was especially true of workers in teams that were completely dependent on the tickets or issues that they received in a day.

[T]he work depends upon the issues. We cannot tell how many issues we will get on a day, right? So one day, there might be 30 tickets, then the team will work on all 30 tickets. Another day, there will not be even a single ticket. It depends on the issues being faced by the customers day to day. (Worker 14, Senior Analyst [Networking], Large European IT firm)

The days when workers have no work at all; though relatively rare, would usually come close to holidays in their client's country, when clients were on leave. A common example, was the period around Christmas or New Year in the case of clients based in the US or UK, or around the time of Ramadan in the case of clients based in the Middle East. Generally, for the workers, it was only the days around such holiday periods when work was relatively relaxed. In the case of project-based work, workers explained that the pressure was steady for the most part but that the amount of time and work that they put in increased as the project neared its deadline. However, it is pertinent to note that all such variations — that is, in the amount of work to be done — were usually anticipated in advance, both by the workers and their managers.

In the case of serious or critical IT infrastructure issues (ones that cause extensive disruption of IT services or affected many people), the workers would need to ensure that the issues are resolved as quickly as possible; and in such cases, an escalation of pressure makes the work hectic. Pressures arise from the SLAs which also provide service quality guidelines and require issues to be fixed quickly, and so avoid breaching timelines and invoke various penalties. In such instances, the workers extended their work hours and effort as required to meet the targets set in the SLAs.

[W]henver we get a high severity ticket, we will get a phone call and we will also get a message. We have to then provide the support and fix the issue accordingly. This kind of support needs to be provided 24 hours....So in such cases, we will

regularly have to work more than 8-9 hours a day. (Worker 25, Systems Management Specialist, Large American IT firm)

Another cause for an increase in the number of hours of work was the increasing amount of work being allocated to them through job enlargement strategies. For example, a worker recounted how his team possessed skills and expertise in a certain type of technology, but had now been asked by their managers to also handle and fix issues involving completely different technologies as well.

Our internal team structure got changed a lot. Earlier, we used to have 4 different levels of team – 1<sup>st</sup> level, 2<sup>nd</sup> level, 3<sup>rd</sup> level and 4<sup>th</sup> level. So, I can say that in the last 1-2 years, it is coming down. It's like the team is becoming one. Everybody has to do everything. [S]ome other teams also got merged. I can say technology-wise VMWare technology and Windows technology teams got merged. (Worker 03, System Administrator, Large American IT firm)

Interestingly, this constitutes a reversal of the division of labour, with workers being asked to handle the work of other teams after dismantling those teams and transferring their responsibilities. But, as the worker (quoted above) pointed out, this enlargement was done without any training on these new technologies or changes in the staff strength. The managers just asked the workers to train and skill themselves using the firm's internal self-learning online courses. Overall, workers across job categories generally perceived an increase in the quantum of work they were required to do and the number of hours they put in over time.

Definitely, the workload has been increasing day by day — without any increase in the number of people in our team. So that would be one of the causes of stress....and especially people like me who have an experience of around 9 to 10 years. (Worker 04, Technical Lead, Large Indian IT firm)

The general increase in the amount of work to be completed by each worker can be largely attributed to the gradual target inflation. Increases in work targets are usually agreed to by the workers as part of continuous improvement programmes that are set up for workers as

part of their annual appraisals. As one worker illustrates:

I can manage, like I know the tricks and all, right. So when you get more experience on the same product, it will be a little more easy to do complex work. But work-wise there won't be any reduction. Like every year, we will be getting some more responsibilities, and because of this the total amount of work or time that we spend won't reduce. New responsibilities would be added, like dealing with vendors, help the new joiners etc., so it will add get added up. (Worker 26, Senior Engineer, Large American IT firm)

The amount of work for members within the same team increases with work experience. Increases in work targets were rationalised and consented to on the basis that every year of experience demanded more work and more tasks to be completed. The net result was that there was a gradual increase in the amount of work to be done with every passing year in such a manner that the increase in workload roughly corresponded with any increases in the worker's dexterity. Managements recognise or assume that as the worker's experience increases, their speed with that type of work also increases owing to the increased familiarity with the work. In order to exploit these increases in 'mental dexterity' and the potential free time thus created, managers assign more work to the workers. In the above example, a job enrichment strategy was utilised to increase the workload and keep the worker's time utilisation high. Any gains in dexterity that were made over the year would thus be factored in and exploited by increasing job-related responsibilities. Managers exercise a form of simple control by personally providing highly individualised feedback and also by being directly involved in the process of target setting. They seek to belabor to each worker that they had done 'x' amount of work in the previous year, and therefore they should logically do 'x + y' amount of work the next year. That is, they have to do more work the forthcoming year in order to show continuous 'improvement'. Therefore, highly personalised bureaucratic evaluation procedures are closely inter-linked with the quantum of work to be completed.

Increases in workload and work intensification were also a result of staff reductions. Staff rationalisation automatically shifts the responsibility of the existing workload onto the

remaining workers, forcing them to increase their output and productivity.

It was a large group of 70. And when I came out of the team [after 9 years in it], it had become reduced to 25 – 30 people. It was gradually reduced. They started some automation and then started reducing people. So the same amount of work that was done by 70 people was now being done by 30 people, so the pressure on all of us increased hugely. (Worker 27, Principal System Administrator, Large American IT firm)

The above quote highlights multiple distinct issues in ITS work. Workforce reduction was justified on recently introduced automation. But the number of staff that was reduced was greater than the gains made through automation and so, rather than freeing up workers' time, it resulted in increased pressures due to the increased amount of work that each of the remaining workers had to complete. Ironically, this only resulted in an increase in the amount of work to be handled by the remaining members of the team. The same interviewee attributed this strategy to the immense stress that she and some of her colleagues had been facing, and even for the untimely demise of two of her colleagues, both of whom were in their mid-40s, due to the work related illnesses caused by the excessive work. It is plausible that managements could potentially, and perhaps unwittingly, keep increasing the quantity of work in the anticipation that workers can keep up with the workload and its pace; a challenge for managers here would be to know when to draw the line because of the 'mental' nature of the work.

When asked about work pressures, ITS managers, however, attributed pressures arising from inter-firm competition for contracts; as a result of which there is always severe pressure on profit margins and productivity.

There have been instances when it is impossible to do the work. The clients, either they demand something which is crazy or our sales team would have pitched something which is ridiculous and not achievable at those rates. They just take on too much workload for the price. It's not that the work is technically difficult or complex. The problem is over-committing. (Manager 01, Associate Service Delivery Manager, Large Indian IT firm)

The result of performance pressures is that managerial strategies that attempt improve productivity are fairly straightforward, being largely based on gradually demanding increased output from workers, though the timelines within which each fragment of work needs to be completed still remained fixed. Generally, this highlights a tendency to resort to simpler and more direct forms of control by managements. Managements largely increased productivity by increasing the total amount of work completed per worker, but often used job enlargement and enrichment strategies as well.

In sum, this section presented examples that showed how there is a gradual increase in workloads and target inflation for the ITS workers. Some of these mirror the empirical evidence from other segments of the IT industry, such as call centre work, where the managerial drive to “...reduce costs and raise labour productivity resulted, *ceteris paribus*, in target escalation” (Taylor and Bain 2007: 356). Much of this is motivated by the managers’ attempts at improving productivity. It would be justified to say that the practice of high and ever increasing work targets was fairly widespread — as workers across different types of companies often articulated similar pressures due to increases in workloads and the resulting stress it caused. However, because this is ‘mental’ work, workers are seen to rationalise this as a natural corollary to their need to show improvements in their ‘mental’ output and so they willingly accept responsibility for fulfilling their increasing work targets. Having established the gradual increases in workloads, the response of ITS workers to these managerial practices and work pressures are explored in the next section.

### 5.3

#### **The Extensification of Work: The Hours of Work, Breaks and Leaves**

In the previous section, managements were shown to raise the productivity of ITS work through gradual target inflation. The onus of finishing these increased workloads is then placed on the ITS worker. The target inflation was justified and predicated on an understanding that with increasing experience workers gain in ‘mental dexterity’ and can therefore carry out their work faster. But, it is not necessarily that this assumption is true



and that all workers have uniformly made these purported gains. In fact, many of the interviewed ITS workers pointed out that the increasing targets only resulted in them working longer hours in order to finish the work allocated to them. The result was that they regularly worked over-time of their own volition and this was usually unpaid. There are often strong regulatory dimensions to several aspects of working hours, overtime and even holidays. In the case of IT firms in India, the normal working hours are 9 or 9.5 hours. The (K)SCE Act, 1961 (s.7) that governs this stipulates 9 hours of work per day with a cap of 48 hours per week, while recommending an hour's break after 5 hours of work. As a result, the working day can be legally interpreted as longer than eight hours<sup>4</sup>. In interviews, both workers and managers pointed out that working longer than 8 hours was normal.

[N]ormally, 8 hours is the mandatory work day. But in Indian IT service companies, they keep the times as 9 to 9.5 hours daily work that they can get that full 8 hours of complete work and the additional 1-1.5 hours are for your breaks and lunch.  
(Worker 04, Technical Lead, Large Indian IT firm)

We used to have fixity of the hours of work. Nowadays, we are talking about 9 hours. But, if it comes from the government that these are the number of hours that you can work, then exploitation of the employees by the companies might reduce. So we have France as an example. They have a fixed mandate where they don't allow employees to get exploited. So I think the labour laws should be made more stringent and more strict, wherein a person can't be made to work late, basically a more employee friendly environment....We have a couple of loopholes which people are using. People talk about it [flexibility] saying that "NASSCOM has said this and that", but I am not convinced. Personally, if you asked me, I am not totally convinced about the need for more flexibility. (Manager 04, HR Manager – Recruitment and Training, Large Indian IT firm)

While the 9 hour-long workday pertains to the formal rules of the workplace, in practice, ITS workers were often spending even longer than this. When Worker 04 (quoted above)

---

<sup>4</sup> The extensification of working hours has also been documented in newspaper reports. For examples, also refer Tejaswi and John (2008) and Kurup (2009).

was interviewed (over video-conference), at around 8pm, he explained that he had been in the office since 9 am and that he now had some free time to be interviewed, because he was waiting for a conference call that was scheduled to begin at 9 pm. This meant that the worker was in office for well over 12 hours on the day of the interview. He said that it was not unusual for him to put in 15 hours of work (that is, work till 12am). He attributed this to the increasing workloads; this, he pointed out was causing him mental stress both due to the physical strain of working such long hours and because of the inability to spend time with his family.

Managements fix the time within which each task is to be completed and it is expected that workers will take the same amount of time to finish the work day in, day out. For some reason, if a worker falls behind, then s/he feel that they have to complete their quota of work; and in order to do so, they would have to work over and above their daily working hours.

Normally we have 2 week sprints. The daily work hours are expected to be 6 hours. So automatically, we are assigned work for 5 days a week and a total of 60 hours....So daily things will have to be on track. If I fall behind, then I have to extend that day and finish off the work. (Worker 26, Senior Engineer, Large American IT firm)

This contributes to the earlier observations of how managements are focused on manipulating the targets and outputs rather than time. But this has several implications. Workers put in extra hours without being explicitly asked to do so in order to keep up with their daily workloads. Though workers are provided with the autonomy to allocate their times as they please, they have to ensure that they complete their responsibilities within their daily timelines. Thus, managements manipulate both time and productivity through the manipulation of work targets. Further, the need to show continuous improvement makes these targets appear logical to the worker, and so, work intensification occurs with the workers participation and consent.

The lack of fixity in working hours leads to workers working additional hours while in

office. But often this extends beyond the office as well. Rather than being granted leaves, workers were often encouraged to Work From Home (WFH) blurring the boundaries between home and work.

When the company shifted branches to a faraway location, I was finding it difficult to travel so much. It started giving me health issues. So, here in my current company, now I work from home, I don't go to office at all. It's one very good thing in terms of my work-life balance...but many people have a lot of issues.  
(Worker 20, Senior Technical Lead, Large American IT firm)

If there are some urgent issues that need more attention, then the managers will ping us, even on holidays and we will end up joining to assist them. In my previous organisation, I never took any leaves, and I haven't taken any in this one as well. Instead, I am just given the option of working from home. (Worker 13, Systems Analyst, Large Indian IT firm)

Other workers too reported the provision of WFH being preferred over leaves (interviews with worker 2 and 16). In general, workers appeared to be largely satisfied when provided with such flexible work arrangements. Most of the ITS workers pointed out that they had little problem in getting leaves whenever they would request it. Longer leaves were allowed if they planned and requested them well in advance, though there were often restrictions on leaves at short notice because of the planning and re-allocation that it would require.

This is similar to the constraints in the matter of leaves that is experienced by workers in start-ups and smaller tech firms. In such firms, the low number of employees, as well as the large number of responsibilities per employee, often meant that there were very few people who did similar work. As a result, almost each and every person's job role and responsibilities was unique. One worker was the system administrator of the entire organisation and responsible for all their server requirements, and he pointed out that he was also the only person in the department. While this gave him a degree of autonomy in his work, it also meant that he could not take long leaves, as there was no one that he could hand over his responsibilities to (interview with Worker 28, DevOps Manager, Small Indian IT firm). Another ITS worker in a small game development start-up explained that he was the only employee responsible for all of the firm's IT infrastructure. This meant

that he was required to be online all the time (24x7) as part of his work, monitoring the infrastructure of the organisation and could be required to work at any time of day if needed, and this also included leaves and weekends (interview with Worker 02, Systems Administrator, Small Indian IT firm). Given that he was the only employee working on these issues, he directly reported to the CTO of the firm, and had no colleagues who did anything similar.

In smaller firms, matters such as working hours, wages and leaves were handled by managers without bureaucratised rules or policies. One manager explained that the low number of employees in the firm (less than 50) meant that they did not even have any permanent HR personnel (interview with Manager 07, Chief Technology Officer, Small Indian IT firm). Aspects related to HR, labour regulations and compliance were handled by external HR consultants, who would come in once a month and ensure that the firm was adhering to the relevant regulations and had all its documents, permissions and compliances in place. At this point, it is perhaps also pertinent to note that several labour regulations in India are only applicable to firms above a certain size (i.e. greater than 20 employees); there are also some exemptions and incentives in terms of social security and labour regulations that are provided to small and medium Indian firms or start-ups. The small employee size of start-ups and small firms and the concentration of responsibilities and skill-sets in a smaller group of employees (or in just one employee, as seen in the interview above) determine decisions regarding the requirements for setting up of bureaucratic rules within such organisations (also refer Edwards 1979: 27). This implies that there are large differences in the working conditions and management control practices based on firm size.

In sum, the discussions in this section have shown the effects of gradual target inflation on the workers, especially its effects on their working time. Not only did managements maximise the formal working hours to reach the upper limits of the legal maximum work-hours, but their focus on increasing the amounts of work to be carried out by the workers also resulted in spillovers, with the workers spend increasing numbers of hours at work, of their own volition, in order to meet the targets. On the surface, this extension of the working hours appears 'voluntary', because managers do not explicitly request workers to do overtime, however it should be noted that this is brought about indirectly by the

pressures of completing the ever-increasing workloads.

## 5.4

### **Monitoring and Surveillance of ITS Work**

The earlier sections showed how managements did not exert time-based pressures in a direct manner; they neither expressly requested the workers to work overtime nor kept a tight leash over how the workers allocated their time. The workers did not report any pressure in terms of breaks (the length or frequency of breaks taken) or how they spent their time whilst at the workplace as long as they completed their allocated work or tasks within the specified timelines. It appears then that workers have a fair degree of autonomy, both in terms of timings and the execution of work. In this, ITS work appears to vary significantly from the highly evolved surveillance and time-based monitoring systems that are seen in call-centers (Ferne and Metcalf 1998; Noronha and D'Cruz 2009; Taylor and Bain 1999). However, it would not be true to say that monitoring was completely absent. Rather than direct observation, managements usually monitored the progress of work using standard digital workflow applications or other digital tools to keep track of the progress of allocated tasks (see section 5.1.2).

Aspects related to surveillance and monitoring appeared to be in a state of flux with several workers highlighting how new systems of measurement and documentation were being introduced.

[S]o when I joined in my company, there were no clear directions give to us... like you have to work these many tickets etcetera. There were no specific targets laid down before. We had to do the work when the work comes; and nobody would question us that you have not done this many tickets and all.

But recently, maybe in the past two years, this has been changing. Nowadays, we have to mention each ticket number, we have to mention the time, and be specific about how much time we have spent working. All these things have been put in place recently. Over the last 1-2 years they have started measuring our work purely on the basis of the tickets that have been documented. And there is a certain

minimum number of tickets that needs to be done by everyone now. The time worked is measured by the ticket itself and the number of tickets that I have done are those that are documented. (Worker 03, System Administrator, Large American IT firm)

Worker 03 (quoted above) explained that despite the fact that no explicit targets (in terms of the number of tickets to be completed) had been set by the manager; yet, the process of documenting their made the workers somehow made the workers feel pressured. That is, the mere introduction of such systems requires all the working time in a day needs to be accounted for and a corresponding amount of work shown for it. He explained that the workers now worked harder in anticipation that this new measurement system may be used in their annual appraisal. This also spurred competition amongst the workers. Here, the introduction of measurement systems where there were none, organically created pressures on workers' time and made the workers feel that they were being somehow "controlled".

[A]fter this tool came into place, this micro-management tool, there is always a feeling like your work you have done is low. Earlier it was not there, we did not feel this kind of pressure. Even for taking breaks, normally it's not a problem and no one tells us not to take a break or asks us how many breaks are we taking...but with this system, it feels like somebody is *controlling* you. So even if you go for break, then you keep in mind that you are reducing 15-20 minutes of your work. This is a new issue for us. (Worker 03, System Administrator, Large American IT firm)

Though managers may monitor the work, either through workflow monitoring tools or during team meetings, there does not appear to be any further surveillance or close monitoring of the workers after that, thus providing them with some degree of autonomy to carry out the work. ITS workers generally disapproved managerial attempts at more direct forms of micro-management, monitoring and surveillance and they were found to actively resist such practices both formally and informally.

So, normally work timings and breaks are not a big issue...but if a manager starts doing micro-management, then it will be difficult for the manager to stay. Because, in my team, there was a manager who came into my team two years back. And he

was a new manager, so he was very pro-active in doing lots of micro-management and no one [in the team] liked that. Like if you take a leave, he would call and ask ‘why are you taking a leave’ and so on. So we all complained to the session manager, the second line manager, and he was terminated. (Worker 26, Senior Engineer, Large American IT firm)

The ITS workers’ reticence towards his or her work being closely monitored can result in genuine resistance against such practices. But what the above example underscores is how, in the face of common grievances, the IT workers — who are not usually known to collectivise (refer Noronha and D’Cruz 2013; Sandhu 2006; Sarkar 2008) — have some ability to collectively resist and create enough pressure to influence the selection of the manager and shape their own working conditions.

This is not to say that practices of surveillance, monitoring or micro-management are completely absent. Rather, as one interview highlighted, it is entirely possible that such controls are deployed, but only as a function of the type of work.

See, I initially started as a Level 1<sup>5</sup> [L1] engineer. When I was L1, the restrictions for breaks would be very strict...this strictness was because I was the front-face of the company. The break times were very strict and noted, so that I was there for precisely 9 hours and working for 8 hours. But when you come to Level 2, the topic entirely changes. As a L2, if I go for a break and it exceeds by 30 or 35 minutes, then it is not going to impact services in any way. So it really depends on what Level of the support services you are working in. (Worker 15, Senior Network Engineer, Large Indian IT firm)

Workers in segments of ITS work that provide first-line or round-the-clock support services appear to be subjected to stricter controls that included careful monitoring and regulation of the workers’ shifts, time and breaks. This variation in the experiences, depending on your level in the support chain or the type of work you are doing in the ITS sector, also underscores the diversity in the way work is organised and managed, even

---

<sup>5</sup> Most ITS work is organised in levels, with the work becoming progressively more complex as one goes up the levels. Level 1 is often the first-level customer-facing support service usually involving initial trouble-shooting and recording of ticket details.

*within* ITS work. For one, the interviews indicate that types of ITS work that require round the clock support, will usually be much more heavily monitored, with clear shift timings, tightly regulated breaks and little flexibility.

While the managerial focus on the quantity of work (as opposed to a focus on time) has now been made clear in these preceding discussions, there remained questions about how the quality of this work output was ensured. In this matter, there was little evidence of any coherence in the quality assurance practices of work. Quality practices appeared to be highly varied with several workers saying that they did not face any quality checks at all. ITS workers are usually responsible for the technology infrastructure and their work could be deemed satisfactory if this infrastructure was running smoothly without any problems. One worker, who worked on a ticket-based work environment, elaborated that for much of the ITS work, as long as the IT systems were running fine, there was little concern shown by the managers (interview with Worker 08 Support Engineer, Large Indian IT firm). Any system issues could usually be closed only after the problem had been fixed, tested and working again. This automatically ensured the visibility of the quality of the work.

Other possible reasons for the lack of quality checks was due to the high level of complexity of the work involved (showing an absence of standardisation of the work) and the kind of technical personnel that would be required to check the work.

For Level 1 engineers, quality is a very strict issue because they are the front face with the clients. But if you see for Level 2, it is a bit more easy. Most often, you will not be checked because it involves technical work instead of communication. My work is going to speak more in technical terms. We can't create rules for this...so quality and audit happens strictly for Level 1, for Level 2 it is taken care of by the team lead who is a technical Level 3 person. (Worker 15, Senior Network Engineer, Large Indian IT firm)

No, we don't do any documentation of our work. Not at all. This is because the



issues are not common and are unique...like the issues that I see today, I will never see again for the next 10 years. The issues will all be different. Some issues may be common. But mostly it will just be related to that day and time. (Worker 14, Senior Analyst – Networking, Large European IT firm)

The difficulties of recreating specific situations under which the technical issues or work is carried out, as well as the focus on output and service availability also contribute to the lack of focus on the quality of the work. This aspect, too, is in contrast to the rest of the IT industry where quality control is fairly advanced in both call-centre work and software work (refer Noronha and D'Cruz 2009 and Taylor and Bain 1999 for the former; Beirne et al. 1998 and Cusumano 1991 for the latter). Overall, this section has underlined how once various types of technical controls are incorporated into the technical structure of ITS work through the manipulation of work output, this sufficiently ensures that managers need not carry out further surveillance or monitoring of the work. Thus, rather than direct monitoring and surveillance of the workers, technical controls are combined with some degree of autonomy to regulate the work.

## 5.5

### **The Two faces of Automation**

ITS work is almost entirely digital and computerised by virtue of being a part of the IT industry. And such work was no different in being affected by the dynamics of automation and digitisation. In earlier sections, it had been shown how there was a high degree of fragmentation and standardisation in the processes and workflows of ITS work. Such processes of fragmentation and standardisation subsequently contribute to or set the stage for automation. One worker, who specialised in network devices, described how he used to write small bits of code for network devices. But over time, with the increasing standardisation of the code, the pieces of code had been made into discrete modular blocks (interview with Worker 29, Senior Architect, Large American IT firm). Each of the blocks of code had been turned into transferrable modules, and were now being inserted into larger programs or hard coded into devices. This meant that it was no longer necessary to write any system code afresh for different clients, but that large portions of

work could be completed by reusing these standard code-blocks. As a result, their team now required far fewer workers than they had required previously.

Another example of such processes was typified in the automation of application and software testing. Firstly, a division of labour within software development work had resulted in a separate, specific team whose job involved only ‘testing’ the software with various applications and tools, and no more. One such testing engineer explained that now large portions of this testing work had been standardised and was now getting automated. In fact, such workers were often tasked with doing the automation themselves; with managements actively set workers with targets for automating their own work as part of their annual evaluations and appraisals.

There are some kind of measurement and targets that are set for our work. You have to do 5 test cases per day if you are a new employee; and for senior employees, maybe 10 test cases per day. Also, for us senior employees, weekly one or two test case automation will have to be done. So, these are the normal targets and goals. [The manager] will cross check all the details of our work from his tools. (Worker 26, Senior Engineer – Testing, Large American IT firm)

Whereas the procedures for completing any piece of IT work could be fairly straightforward, the task itself usually requires the application of the workers’ technical knowledge and their problem solving abilities. The workers’ contribution gets affected by the repeated cycles of fragmentation, codification and standardisation, which leads to more and more aspects of the problem solving process becoming predictable over time eventually leading up to automation of parts of the work. Though the study had initially set out to find some of the effects of automation on such work, over the course of the research, it became increasingly clear that the relationship between automation and IT services work was complicated. The most common (and well known) use of it is by managements and employers who attempt to incorporate it in order to improve productivity. This is discussed as ‘automation from above’ in sub-section 5.5.1. However, just as the example above (worker 26), several cases of automation being initiated by workers were also found, and so some related aspects are discussed in further detail in sub-section 5.5.2 as ‘automation from below’.

### 5.5.1

#### **‘Automation from above’**

In previous sections, it had been demonstrated how ITS work regularly undergoes a technical division of labour, often through the fragmentation and standardisation of portions of the work. As a result, the scope of the workers’ being able to exercise their creative knowledge and problem-solving abilities keeps reducing. These processes set the stage for the introduction of automation. Several ITS workers described how automation was being introduced into their work, either directly or indirectly. An example of this was the automation of standard workflows, a process called ‘Runbook Automation’ (interview with Worker 01, Senior System Administrator, Large American IT firm). Runbooks are e-documents that contained the detailed technical documentation of a specific IT system. These Runbooks were a codified form of the standard processes, routines and procedures that the workers should follow when trying to fix issues that arose within the corresponding IT systems. While, essentially, they are similar to process documents (that detail the general work processes to be followed); runbooks are much more specific, detailed and more technical. These Runbooks are the main source of information for IT technicians when working on any computing system. The ITS worker (worker 01) explained that the parts of the runbook which had repetitive tests or the portions that had been standardised, were now being automated in their firm, thus gradually reducing some aspects of the server administrators’ work.

Interviews with managers were useful, not just in corroborating and delving deeper into the unfolding automation in ITS work, but also in understanding their motivations to adopt such strategies. A senior executive explained that they were focused on automating several aspects of their services across the firm, especially highlighting the deployment of Robotic Process Automation (RPA)<sup>6</sup> This included portions of their Runbooks (discussed above), while also examining various work processes across the firm to see if it was possible to integrate elements of Artificial Intelligence (AI) into them.

---

<sup>6</sup> RPA involves the use of small pieces of software called ‘robots’ that are trained to do repetitive tasks. Also refer Lacity and Wilcocks (2015)

We have an automation initiative going on across [ABC]. So we do, starting from these very basic runbook automation, running scripts, all the way up to AI-led automation. We have robotic process automation (RPA) tools and we also use our own platform to drive automation. Automation was always going to come to IT. So certain types of jobs that are seen as mundane, will be automated. Everybody is looking at efficiency...it's a technical thing.

We believe that automation needs to be done in a humane way. So we have started something called 'human assisted automation'. You bring technology to make humans more efficient. (Manager 06, Chief Technology Officer, Large Indian IT firm)

The managerial element in work organisation and manner of selection of technologies becomes clearer in this account. Even though changes to technology and work organisation are often viewed as neutral or 'natural' processes resulting from technological innovations, it is possible to discern the deliberate managerial push for the deployment of such technologies. The indication of the possible side-effects of such technologies on employment and jobs makes it worth recalling an earlier example from section 5.2, where a worker (Worker 27) had explained how her team of 70 workers had been reduced to 25 to 30 people after the introduction of automation in their work processes.

The growth of new technologies (such as Machine Learning, Automation, Cloud Computing and Artificial Intelligence) and has implications on the number and nature of jobs. Most managers foresaw these technologies as having a negative impact on future job creation but were keen to emphasise that skill requirements would change, therefore requiring fresh hiring or 'rightskilling' and 'upskilling' their existing employees.

As you have been seeing in the news, hiring in the IT sector has already gone down. Plus, there is lot of retrenching [or laying off] going on. These are definite trends that can be seen as an impact of increasing automation. ....[R]evenues have become non-linear with respect to the number of employees and this has happened because

of technologies such as automation, cloud and so on. The result is that, suddenly, we can do a lot more things with very few people; this change happened in a short time-frame, but has a huge impact on jobs and our responsibilities. (Manager 06, Chief Technology Officer, Large Indian IT firm)

The IT firms are purposefully creating these technologies because they want to lay off people. When the automation and related things are happening, the overall number of jobs may be decreasing...but the skilled jobs are still there. So all these new technologies are now coming up. For example: Machine Learning, Artificial Intelligence etcetera. The new problem the industry now faces is that you don't find good engineers who can work in these emerging areas...So there may be fewer jobs but there are openings for people with these new skill sets. (Manager 08<sup>7</sup>, Senior Consultant, Large American IT firm)

Automation is viewed as affecting overall job numbers while also simultaneously affecting skills requirements, potentially lead to a widening of skill segmentations. Automation can lead to changes in job requirements, with an increased demand for workers who are skilled in newly evolving technologies. Thus, automation would result in the labour market having both an over-supply of general workers and an under-supply of workers with the new 'in-demand' skills.

The various interviews highlight how industry participants are well aware of the impact of automation on both job numbers as well as the nature of skill requirements in the labour market. But it can be seen that fragmentation, standardisation and automation are often being introduced in a rather deliberate manner by managements. The effects of automation and related technologies are not limited to just overall job numbers; but could also affect labour processes. In another type of example, 'cloud computing' was viewed as a technology causing a major reorganisation within the industry mainly through its

---

<sup>7</sup> This interviewee was a senior technical consultant in a large IT firm. While not strictly a manager, he was not really a worker either. Rather, his work involved dealing with the planning and high level architecture of computing infrastructure. As a result, he had insights both as a worker and manager, but was classified as a manager as his position was closer to that of management.

consolidation of IT infrastructure. The result of this is an opposite dynamic: instead of the processes of fragmentation and standardisation, there is a consolidation of the division of labour within ITS work (interview with worker 01 and worker 11).

Though automation and related technologies emerge as a significant phenomenon, not all managers viewed these as having a huge impact on ITS work. For several managers, the effects of automation and of new technologies were seen to be “exaggerated” and “over-hyped” (interview with Manager 02, Project Manager, Large Indian IT firm). This was because while there were genuine changes occurring to different types of ITS work, in some other types of ITS work (such as first-line support services), the utilisation of automation was relatively low. Another manager reconciled the phenomenon of automation with the view that the evolution of new technologies was always something constant in IT, and so, such technologies are just a continuation of general technological development (interview with Manager 06, Chief Technology Officer, Large Indian IT firm).

In sum, this section discussed the extent and effects of automation when initiated by managements or introduced ‘from above’ in a top-down manner. Managements appear to have a variety of reasons, though it is mainly to improve productivity and bringing down labour expenditures, the latter of which is found in the annual reports of IT services firms, to be their largest single head of expenditure. Drawing on the interviews and examples from workers and managers, this section showed the extent and effects of automation in ITS work, but also, significantly, how also how automation and related technologies may run against the tendency for fragmentation in ITS work by possibly consolidating some of work that has been divided and fragmented over time.

### 5.5.2

#### **‘Automation from below’**

The previous sections in this chapter found how increasing productivity in ITS work relied on the fragmentation, standardisation and gradual target inflation of work. This generally led to increasing workloads, completing which could only be achieved by working longer

hours often putting in unpaid overtime to complete their assigned quota of work. For some workers, the difficulties of coping with increased pressures owing to mounting work targets and quotas led to an altogether different perspective on automation.

Some ITS workers highlighted how they utilised automation to reduce their workload pressures. Instead of a management-initiated process initiated to increase productivity, some workers utilised automation in order to create their own solutions. They automated portions of their work so that they could cope with the ever-increasing workloads and free up some time. For the workers, there were tangible benefits in utilising automation, as it helped them reduce the time spent on work on recurring or mundane tasks.

Over the last 2-3 years, when you look at the number of tickets that we handle it has reduced significantly. We having been automating some parts of our work on our own, and by doing this, we have managed to reduce our ticket volumes to a great extent. The managers don't bother us as long as the systems are running fine, so they don't really know how these are getting fixed. (Worker 25, Systems Management Specialist, Large American IT firm)

So as far as the workload is concerned, I automated many of my tasks. So this has reduced some of my daily workload. My work increases when the traffic increases and then the issues will also increase. So in order to handle these issues, I did small pieces of automation myself for many of daily tasks. Then I have more time to handle these issues....I haven't documented all of it, only just a few things. (Worker 02, Systems Administrator, Small Indian IT firm)

For such workers, the motivation to automate was neither originating from nor at the instruction of managements, and neither did they feel the need to inform their managers about their use of automation. This not only highlights a degree of autonomy in the execution of the work but also underscores how the management's primary concern relate primarily to the smooth running of the IT infrastructure. Such experiences of workers in different sized ITS firms indicates some degree of the 'autonomy' where, very often the

work is not monitored in detail, but all that is expected of the workers is that they complete their quota of work.

The utilisation of automation by workers in order to assist them shows its potential when in the hands of the workers. The empirical examples in this section (s. 5.5) justifies a dual classification approach in order to account for the diversity and differentiation in the deployment of automation in the ITS sector. Section 5.5.1 explored the utilization of automation as a ‘managerial strategy’ — where such technologies are geared towards the objectives of staff reduction and productivity increase and is characterised as ‘automation from above’, this section showed some of the possibilities where automation is utilised ‘by’ the workers as a tool ‘for’ the workers. In such instances, automation becomes an ally of the workers and can be viewed as ‘automation from below’. The latter can be understood as a workers’ strategy, wherein the ITS worker is seen to act with a degree of autonomy; the ‘autonomy’ is concluded from the fact that workers do not document the modifications to their work and usually managements were unaware of these changes both to the work processes, if any, and of the actual amount of time that such work was taking to complete. These findings also further underlines the fact that very often it is workers who are most familiar with the labour processes and the actual processes involved in the work. And it is this intimate knowledge of labour processes that managements attempt to appropriate through various means. For Braverman (1999), this plays a central role in laying the foundation for subsequent deskilling. This naturally leads us to questions about how ITS workers and managements deal with the knowledge of the work and how issues over the control of knowledge are dealt with. These aspects are explored in the next section.

## **5.6**

### **The Contestations over Knowledge and its Control**

The capture of knowledge about the work and its labour process by managements and employers is central to the implementation of a technical division of labour (Braverman 1999: 77). In the discussions in chapter 2, our survey of literature had highlighted how the



right to access and capture a worker's knowledge has been legitimised through the concepts of knowledge management, largely deriving from the ideas of Nonaka and Takeuchi (1995). These have subsequently led to the systematic development of management strategies that attempt to codify workers' knowledge, usually through various types of knowledge repositories and documents. These codification and documentation systems ultimately leads to taking the 'technician out of the decision-making process' and the continued use of such systems eventually results in a complete removal of any unique contribution from the workers (Downing 2004). It is the specific attention paid by managements to gain control over knowledge through various strategies that highlight its importance; and arguably this becomes even more critical in the case of knowledge-intensive mental work (Sewell 2005).

The interviews, however, provided a mixed picture amongst the interviewed workers regarding the manner in which Indian IT firms were dealing with aspects related to knowledge of ITS work. In the case of work organised in the form of ticket-based systems, generally the work was found to have fairly rigorous documentation procedures. Documentation was usually carried out by ITS workers by manually entering descriptive details of the work that they had carried out. Any new approaches or solutions that were developed during the course of completing the work were also documented in detail. But the workers said that they did this more for the benefit of colleagues and fellow workers. With work being carried out in shifts, it becomes imperative that the workers in the previous shift give detailed information to their colleagues in the next shift; many interviewees said it was therefore a routine practice to record all possible information.

So all the information needs to be recorded perfectly by the Level 1 engineer because that is the information that will come to the Level 2. But this is the same for us in Level 2 also. This is because of how the system works — I work for 9 hours in the day, and then the person on the night shift comes and takes over from me. It is not possible for me to communicate with him or brief him about all that had happened during my shift; so the only way out is to maintain proper documentation. This is why the analysts ensure that they do documentation with special care. (Worker 15, Senior Network Engineer, Large Indian IT firm)

Various forms of Knowledge Management (KM) systems that attempt to codify, organise and store knowledge are now integral to many organisations (Taskin and van Bunnem 2015). Knowledge repositories are utilised in order to store detailed process and technical information while also containing the detailed steps and actions to be followed to solve problems that may arise in these computing systems. Such repositories present a codified form of the knowledge of workers accumulated over time by working on and fixing such systems repeatedly. The codification of such knowledge then represents the first act in separating the workers' knowledge from the workers and its acquisition by firms and managements.

On the other hand, for several other workers, who worked on similar ticket-based work allocation systems, such KM-related procedures were largely informal or un-systematic due to the heterogeneities in size, type and demands of clients (interview with Worker 16, Senior Network Integration Engineer, Large American IT firm). Some clients demanded high levels of security and documentation for their information and processes, while others did not focus on such aspects at all. An example of such variations was highlighted in the case of IT projects that dealt with financial, personal or confidential data. Such clients would request more stringent rules and regulations about access and storage of all related information when compared to projects that did not deal with sensitive information. As a result, knowledge management practices could present substantial variation within the same IT firm itself based on the type of client being serviced. However, beyond the variations in knowledge documentation and management practices, some important issues emerged regarding who controls the knowledge. An important insight that emerged was not whether managements appropriated knowledge, but rather which management appropriated it. To an extent the inchoate knowledge management practices could also be attributed to the offshoring relationship, between the client organisation and IT firm.

All these clients have an assigned lead. An engineer who is appointed for organising and with responsibility for handling the documentation. This is how it works for all the clients. If you're not the client lead, then you're not going to touch any

documents. It is the client lead's responsibility. Our company does not maintain any documents. (Worker 19, Team Lead – Network Integration, Large American IT firm)

So whether we create code or documents or any artefact that goes with the code – all of it belongs to the customers. There is absolutely no confusion on that front. Only in cases which includes portions of our IP... then it becomes a black box for them. But broadly, whatever solution we develop, the code and all the artefacts around that code will all be the customer's. And in most cases, they are created and maintained in *their* portals, not even in our portals. (Manager 06, Chief Technology Officer, Large Indian IT firm)

It is important to note that knowledge repositories were usually not stored locally with the outsourced IT firms, but were owned, maintained and controlled by lead clients, and usually located in the client's devices or countries. Thus, not only was the knowledge produced by ITS workers dissociated from the workers through its codification and storage, but very often this data was not even in the control of IT firms that the workers were employed by. The knowledge that was produced was usually owned, maintained and its access controlled by the client organisation that had outsourced/offshored the work, thus indicating the control of knowledge also passed through layers of extended managerial chains much like control over the employment relationship (Marchington et al 2015). The interviewed managers explained that Indian ITS firms often did not have any ownership of knowledge being produced and this usually stemmed from the nature of contracts. Manager 06 (quoted above) explained further that even though they had overseas offices, their workers were generally located at the client's office locations in order to ensure that all the work was completely and securely stored on the client's networks and never went outside their infrastructure. Manager 06 rationalised and justified this control of knowledge because he felt that "all the work was funded by the client, for the client — and so their tight control over knowledge was not unreasonable".

Offshored Indian IT firms do not appear have much leeway on matters related to the control of knowledge as the control of knowledge is claimed by the clients when the initial agreements themselves are signed, making them legally bound to give away any new

knowledge or products what they were creating. Practical limitations in the scope of this research mean that lead or client organisations from ‘source’ countries cannot be incorporated into the study. But this aspect of knowledge offers insights into an important means by which client organisations retain control over offshored work. Offshored IT work is controlled by the lead or client organisations are dominated by an understanding that SLAs play a central role in shaping the labour process as well as the relationships between the lead client organisation and the offshored IT firm (Noronha and D’Cruz 2009: 74; Taylor and Bain 2007). SLAs not only determine the quantity and quality of the work to be carried out, but they also contain penalty clauses if the agreed service targets are not met. The result of the client exerting such influence is that both the ITS work and the workers end up being controlled by extended layers of managements and additional hierarchies that influence aspects of the actual work (Rubery et al. 2005: 68). In addition to these elements of control, this study finds that control over knowledge too plays an important role in the control of offshored/outsourced work. Retaining control over the knowledge could provide client organisation with the ability to maintain vendor and locational independence and prevent any lock-ins. This also possibly provides client organisations with a more solid basis with which they can exert pressure on margins while negotiating future contracts, whether with the same IT firm or another one.

The study had initially been designed and set out to understand the manner by which knowledge is separated from the worker and captured by the employer – a Bravermanian separation of conception and execution. However, we observe that not only is knowledge of the work separated from the worker but also gets separated from the IT firm employing the worker. Knowledge of work is usually owned and controlled by the lead client’s organisation, and this is often part of the agreements between the client and the offshore firm. This control over the ownership of knowledge by client organisations leaves offshored IT firms being unable to acquire or control the work’s knowledge and perhaps take its fragmentation and standardisation further. This explains, to some extent, why these managements utilise relatively direct and simple control strategies such as gradually increasing productivity through job enrichment/enlargement strategies and target inflation.

## 5.7

### Discussion and Analysis

This chapter explored various aspects of what Edwards (1979) conceptualised as ‘technical controls’ and how these are deployed in ITS work. It was pointed out that while technical controls in manufacturing work are clearly discernible — where Fordist manufacturing controls the pace of work through the pace of the assembly line — the pace of work is found to get separated into two distinct elements in services work *viz.* the pace of allocation of the work and the pace of execution. Both these elements were examined individually throughout the analysis.

ITS work — whether organised in the form of tickets or projects — is transformed into discrete portions of work when it undergoes extensive fragmentation and standardisation. Large projects are split into a series of small tasks in such a manner that the tasks are interchangeable and it is possible for any member in a team to be able to do it. Not only does this highlight the extensive fragmentation of complex projects but it also shows some underlying logic of standardisation in the specifications and output of the work that allows the fragmented parts to be carried out parallelly and then recombined later. The high degree of fragmentation, standardisation and modularisation has also been observed as a characteristic of other segments of the IT industry, that is, call centres and software work (Batt et al 2002; Houlihan 2004; Noronha and D’Cruz 2009; Ritzer 1998; Taylor and Bain 2007). The fragmented portions of work or tasks are standardised in terms of their categorisation and this guides the timeframes and pace with which the tasks need to be completed by the workers. This is true for work whether organised in the form of tickets or when organised in the form of projects. But what is key is that the typology of task categorisations and the pace with which they ought to be completed are decided well in advance by managements. In doing so, they effectively take away from workers the ability to decide the speed at which they can carry out the work. Workers are then forced to keep up with the pace demanded of them and have little discretion in deciding how fast they can complete their work. This too is akin to call centre work, where workers are required by managements to maintain a certain speed in their interactions with customers (Frenkel et al 1999; Smith et al 2010; Taylor and Bain 1999). This study therefore documents several

similar control strategies and tendencies within the management of ITS work as well.

Even though the execution of ITS work is constrained in terms of time, the selection, allocation and execution of work did provide the workers with some degree of autonomy. ITS workers enjoyed a degree of autonomy in what tasks they selected and could take their time while selecting them. However, once the work was allocated, the worker was then expected to adhere to time frames that are decided well in advance, which was, in most cases, directly determined by the agreements (SLAs) signed between the IT firm's and client's managements. In the selection and execution of work, the study found little monitoring or surveillance when the work is being carried out, unlike call centers. As a result, ITS workers could allocate their time as they wish, taking as many breaks or gaps in their work if they prefer to do so. To some extent, this is attributed to the fact that such work is 'mental' in nature, and therefore invisible. Managers cannot really observe increases in dexterity, if any, and this has important consequences on the nature of managerial strategies that attempt to improve productivity. Because ITS managers are not able to directly observe how the worker is thinking and executing the work, they were found to speculatively assume that there would be increases in the dexterity of such 'mental' work. This leads to the assigning of ever increasing workloads over time and resulting in gradual target inflation. As the workers gain experience, managements expect them to naturally also gain 'mental' dexterity and agility while completing the work. As a result, both the amount of work and its complexity usually increased as the workers gained experience. Despite being not entirely able to cope with the continually increasing workload and, in some cases, even professing to increased mental stress due to this, the ITS workers were found to rationalise the ever-ballooning workload as a logical consequence of their increasing work experience. All of these point to an elementary but critical distinction between physical and mental work. Braverman noted that TSM was premised on a rather crude physiological definition of a worker's maximum pace, defined as: "all the work a worker can do without injury to his health, at a pace that can be sustained throughout a working lifetime." (Taylor [1914] cited in Braverman [1999: 67]). But, in the case of mental work, these limits is not clear and it is far more difficult to ascertain the maximum speed limit with which mental work can be carried out in a sustained manner by any single worker. Workers attributed the gradual inflation of targets by the managements to mounting work pressures, increased levels of stress and health

problems (also refer Padma et al. 2015), though they rationalised it at the same time.

Workers responded to the pressures of increasing workloads through various coping mechanisms. Their responses appeared to vary based on their skills and abilities, knowledge, training and experience, all of which play a role in the speed with which such mental work is carried out by different workers. Workers who were unable to keep up with the increased quantum of work would usually work (unpaid) overtime voluntarily in order to complete their quotas of work (workers who did so reported increased stress levels and distortions in their work-life balance). But another set of workers tackled their increasing workloads by utilising their technical and professional skills to find ways to reduce work and time-related pressures. This sometimes utilised worker-initiated automation in order to cope with the workloads and free up the workers' time. This could be referred to as 'automation from below', where automation — usually perceived as management strategy to cut labour costs, making it a thrust top-down or 'from above' — is actually a strategy by workers to exercise or enhance his/her autonomy, often, subversively so, without the consent or knowledge of managers. From the view of managers, the introduction of new technologies such as automation was an innate feature of technology-intensive industries such as the IT industry. Some of the more prominent technological strategies and tools — being currently deployed in ITS work in order to improve productivity and reduce staff costs — are Runbook automation, AI, cloud computing and RPA. The adoption of automation in IT work is driven, to some extent, by the constant standardisation and modularisation in the work processes of ITS work, but another reason driving this is also the constant margin pressures on Indian IT firms due to inter-firm competition and ever-increasing staff expenditures. Post the 2008 global economic recession, the pressures on overseas clients across sectors and their reduced IT expenditures have also impacted the Indian IT sector where it has moved into a phase of relatively slower growth and smaller profit margins (Taylor et al. 2014; Roy et al. 2017; see also section 6.3.2).

SLAs are the primary means of governing the quality and control over outsourced and offshored work in the Indian IT industry (Noronha and D'Cruz 2009: 73; Taylor 2010). This study builds on this by highlighting how retaining control over knowledge is also integral for client organisations to exercise control over both the work and the contractors.

The role of knowledge in controlling offshored IT work is not an aspect that has been well understood. Managerial control in outsourced and offshored work operates at different levels due to the 'extended managerial hierarchies' and 'constellations of managerial controls' that are created by disintegrated production and the resulting inter-firm relationships (Rubery et al. 2005; Thompson 1993). Because of the exertion of control by client organisations over both the knowledge and work, offshored ITS work is then effectively being carried out under two separate and distinct layers of management controls. The first and immediate layer of control emanates from the offshored and outsourced IT firm and usually governs the application of local managerial controls related to the work organisation, working hours, varied work arrangements, work targets etcetera. But this is combined with a second layer of controls exerted by the lead or client organisation. This manifests in the manner in which the offshored IT firm is governed in terms of time-based controls (usually governed through SLAs), but also, as this study finds, through the ownership and control of access to the knowledge of the work. These two simultaneous but distinct layers of control often results in a complex and sometimes contradictory dynamic (Rubery and Earnshaw 2005). Clients arguably attempt to avoid vendor lock-ins and dependence by retaining knowledge whereas the contracted IT service providing firms would desire to build dependencies to guarantee their revenue streams. The consequence of this on the labour process is that neither organisation then possesses complete knowledge of the work though client firms try to capture as much of the knowledge as possible. As a result, it appears that neither has a complete overview and control over the work though they both retain some degree of knowledge of the work.

## 5.8

### Conclusion

This chapter focused on various forms of technical controls that play a role in determining the pace and direction of the work, and therefore the manner in which ITS work is organised. Knowledge intensive ITS work too is found to undergo a technical division of labour through extensive fragmentation and standardisation. The result of this process is that decisions regarding the pace with which the work can be executed are effectively dissociated from the hands of the workers. However, in some aspects ITS workers retain some autonomy in their work, such as during its selection and the actual execution. ITS



workers were found to genuinely resist managerial attempts, individually as well as collectively, to closely monitor or 'micro-manage' them, thus showing that these workers and workplaces are not locations of unidirectional control by managements.

This chapter has shown how technical controls, that govern the pace of the work, also have numerous indirect effects. Workers have to put in extra hours in order to keep up with the pace required of them, but they can also resort to technology and technical strategies to complete their workloads. The seemingly never-ending increase in the pace and quantity of such work raises some deeper questions about the nature of mental work and its limits. Unlike physical work where workers' limits are relatively visible and can be observed, 'mental work' does not offer any clear or visible boundaries. There is a real possibility that managements can go on increasing workloads, perhaps unwittingly, in the anticipation that their workers would increase the mental speed or dexterity with which they carry out the work. Therefore, this study finds it pertinent to question this management tendency and the limits that should be imposed on it.

Several aspects of management control in ITS work being carried out in India is complicated by the offshoring and outsourcing relationship that governs most of such work. This study has highlighted how control over knowledge is a key method by which control is exercised by client organisations over the offshored IT work and firms. But at the same time, though such offshored and outsourced relationships result in additional layers of managerial controls, these controls also act in a contradictory manner due to the conflict that arises from the somewhat opposing objectives of lead organisations and offshored IT firms.

## Chapter Six

### The Operationalisation and Structuration of Bureaucratic Controls

In the previous chapter, the integration of various types of technical controls into the management of ITS work and its subsequent effects were examined. The analysis provided insights into how managements translated the inherent control imperative into a structural form through the organisation's targets and work-related rules, and how these affected the work and the workers. However, such technical controls governing work are not sufficient to bridge the inherent contradictions of extracting labour from the embodied labour power of the workers. Such forms of control are combined with other forms of structural controls through the inclusion of elements governing the monitoring and evaluation of work, as well as the rules that govern workplace rewards and punishments; the latter of which are especially central to bureaucratic controls (Edwards 1979). It is these aspects that are examined in detail in this chapter. Further, the nature of such workplace rules — that is, the 'firm's laws' — are in turn examined for relationships with the state's laws, legislations and regulations in order to understand the connections between them. The state's approach to labour regulation is not viewed to be a monist, unilateral one dominated by pressures from capital, rather, it is viewed as the result of a dialectic resulting from capital-labour relations. This approach, which places some degree of focus on labour regulatory institutions, is seen to be particularly relevant for industries such as the IT industry (and indeed countries) where collective bargaining by the workers is known to be weak (or absent), and so the workplace rules and employment relationships are guided more strongly by legislation and law. Therefore, an attempt is made to understand how such factors affect the structuration of workplace rules in the Indian IT industry and its resultant consequences for managerial controls.

In the previous chapter, various forms of technical controls that attempt to fragment and standardise work were combined with attempts to codify and capture knowledge of the work in order to separate the conception and execution of the work. The generic capitalist drive to continuously generate surpluses gives rise to a systematic employment relationship which is usually manipulated through a host of management controls, but this capitalist organisation of production is also predicated on the employer's ability to retain workers

within their organisation in the first place. A worker's power to resign and move out of an organisation or employment relationship is a critical element within capitalist labour markets, and this is sometimes termed a 'second indeterminacy of labour' that managements have to deal with (Smith 2006). The ability of workers to exercise this 'mobility power' gives rise to a wide range of managerial strategies that attempt to curtail it or ameliorate its consequences. It is generally understood that the retention of trained, skilled workers is achieved to a large extent through the provision of various types of incentives, bonuses or career growth options through the firm's internal labour markets (Burawoy 1979; Friedman 1977). But, such incentives are also combined with policies that govern the maintenance of discipline amongst the workers; where a series of offences are delineated and their penalties outlined in every organisation. It now becomes evident that such means of control are of a completely different variety when compared to technical controls that regulate the pace, direction and guide the monitoring of the work. Just like technical controls, the rules and regulations around work too are built into the structure of the organisation and all its employment relationships. These can be approached analytically in a separate manner through bureaucratic controls (Edwards 1979: 21), though they are often closely inter-linked to technical controls (see Callaghan and Thompson 2001). By virtue of being integrated into the structure of the organisation, the sources of managerial power that lie behind these bureaucratic controls too are obfuscated (Edwards 1979: 125). The subjective decisions that lie behind the formation of bureaucratic workplace regulations — that are in turn linked to the procedures for promotions, rewards and bonuses, as well as punishment, penalties and dismissals — then appear as being objective to the workers once embodied in the firm's rules and regulation.

There can be many bureaucratic controls that can be deployed by managements; and it is the nature of these in the ITS industry that will be subjected to detailed examination in this chapter. As mentioned earlier, this chapter also attempts to build an understanding of the manner in which these forms of managerial control interact with various aspects of labour regulations. Earlier, in Chapter 2, a conceptualisation of the 'structuration of managerial controls' was developed, as this was seen as a possible means to approach the various connections between workplaces and the state's regulation of work. While there can be several types of regulations related to industry — such as those related to taxes, the environment, land, infrastructure etcetera — this study focuses only on those regulatory

aspects that specifically govern work, labour and employment; this is done with the specific aim of building connections between these aspects of labour regulation and the labour processes and managerial controls. Therefore, all references to ‘regulation’ in this chapter will pertain categorically to ‘labour regulation’, and not any other of the state’s apparatuses.

What this chapter attempts to achieve is two-fold. Firstly, it attempts to build an understanding of the manner in which bureaucratic controls are manifested in the organisation of ITS work. And secondly, it draws connections between bureaucratic controls and labour institutions (especially labour legislations), in order to develop an understanding of how workplace managerial controls and therefore, labour processes, are shaped by these regulations. The detailed descriptions of the rules regarding rewards or disciplining that are discussed in this chapter are based on interviews with workers, managers, trade unionists and government officials. This was combined with an examination of labour legislations and laws that govern the IT industry, as well information gleaned from secondary data and news sources.

The chapter is organised in the following manner. Section 6.1 first examines the nature of the employment contracts between ITS workers and IT firms. This also includes an examination of forms of non-standard employment such as agency or contract work. Section 6.2 then moves on to examine how managements set work-related targets and goals for the workers: this includes how incentives, rewards, bonuses and promotions are setup and how the workers approach these bureaucratic systems. Section 6.3 delves into the various conflicts that arise over separation and how these relate to the management’s attempt control of the worker’s mobility power; this includes aspects related to dismissals, resignations and attrition. This section also discusses how separations and dismissals are not just independent management control strategies, but in reality are deeply interwoven with several regulatory aspects of the state. The section then goes deeper and further into this issue by examining its interplay with the contestations around knowledge that had been discussed in the previous chapter. This also moves the study closer to questions around regulation and how it affects work. The various ways by which labour regulation in the Indian IT industry interacts with managerial controls are explored in detail in section

6.4. Following that, the major findings of the chapter are summarised and some of its implications are discussed in section 6.5, and the chapter is concluded in section 6.6.

## 6.1

### **Employment Contracts in the ITS sector**

All the interviewed ITS workers attested to the fact that they were in regular, formal and permanent employment. They had all signed formal employment contracts with their employers. Many of them also pointed out that even though they had changed firms several times over their career, they had always been in similar permanent and regular employment. Though such employment appeared to be the norm in the industry, there were some important caveats to such a generalisation. A large number of the interviewed workers pointed out that not all employment in their firm was of this nature and that there were a substantial number of temporary, contract workers in their firm doing similar IT work. Two interviewees said that they had worked in temporary, contract jobs in the IT industry previously, though they were, at the time of the interviews, employed in permanent, full-time work (interviews with Worker 08, Support Engineer, Large Indian IT firm; and Worker 21, Senior Network Integration Engineer, Large American IT firm). Such contract workers were usually deployed via labour intermediaries, employment agencies or smaller IT firms<sup>8</sup>, and these workers were assigned to work with a client organisation or a larger IT firm. However, these arrangements were often a means for employers to deploy labour with work and employment conditions that were significantly different from that of regular employees.

The contract workers are paid very less for doing pretty much the same work. They should be at least paid same salary as a regular employee, but this is not the case anywhere. Each time, I entered or left the company's premises I had to queue up and go through a full security screening — this was twice, every single day. Regular workers did not have to do this. We were being checked to ensure that we were not stealing anything from the IT firm. It was not a good experience at all...and frustrating to work like that, even humiliating. (Worker 21, Senior Network

---

<sup>8</sup> Temporary contract workers were known by various names such as contractors or temps, and they would be on short-term or fixed-term contracts in these IT firms. They could be working in the premises of one IT firm, while on the rolls and employed by a labour intermediary or a smaller IT firm.

Integration Engineer, Large American IT firm)

There were sharp differences in the wages between the regular workers and contract workers, even though they were doing similar work. Worker 21 (quoted above) elaborated that such contract workers were paid around half to one-third of the salary of regular employees doing the same work. Not only were contract workers paid much less than the regular staff for doing the same work, but they also received fewer employment and social security benefits such as Provident Fund (PF), gratuity, medical insurance or other bonuses. The experience of working as a contract worker underscores the resentment against the manner such workers were treated, with worker 21 later highlighting that this was the main reason why he eventually quit from that job. Despite being highly qualified, similar to regular workers<sup>9</sup>, their working conditions were significantly different.

Though a majority of the Indian IT industry appears to comprise of formal employment, the workers' accounts of contract employment provides a hint of the social structure of the Indian IT industry. Though this is not the explicit focus of this study, it was considered appropriate to broach this here — albeit lightly and not in any detail — given its importance. It is known that IT workers are from relatively elite sections of Indian society, largely from distinctly upper/middle classes and castes<sup>10</sup> (D'Costa 2011; Upadhyaya 2007). This resulted in a skew in the workforce socially and a highly differentiated treatment of the workers on the premises of the IT firm.

This may not be relevant from a strictly work perspective, but the IT industry is not inclusive in any way, especially on caste. From an IT industry perspective, I think we need to have some kind of reservation<sup>11</sup> [affirmative action] — we need this for backward classes and we also need this for women. My experience in my firm is

---

<sup>9</sup> He was a certified professional in the area of networking, with an industry certification called Cisco Certified Network Associate (CCNA), given out by the networking firm, Cisco.

<sup>10</sup> Indian society, for the most part, is segmented into a form of 'social' division of labour, with a hierarchical order of communities. These communities are called castes and this organisation of society is called the 'caste system'

<sup>11</sup> In India, government/public sector jobs have caste-based affirmative action, through the 'reservation' of jobs for members of castes that have been economically and socially disadvantaged historically. Such affirmative action, however, does not extend to the private sector.

that the workforce is just purely upper caste and the marginal classes are being left out of it ...this is well known. The number of women in my company is also low, and there are no improvements on that. (Manager 03, Senior Project Manager, Small Indian IT firm)

When I was employed as a contract worker, I was made to follow several procedures, such as daily security checks, that regular employees did not have to go through. This [poor] treatment was reserved for us [contract workers] and for other temporary, support and maintenance staff that worked on the premises. (Worker 21, Senior Network Integration Engineer, Large American IT firm)

Labour in India is segmented in several ways: these include not only the universal segmentation along lines of gender, linguistic and ethnic groups, but also the India-specific segmentation of caste. These segmentations are also found to manifest in the composition of the IT workforce. IT sector 'core' workers who enjoy far better terms of employment are also largely drawn from 'upper' caste/class groupings, compared to the 'peripheral' support staff who come from relatively backward/disadvantaged social groups (Upadhyaya 2007; Beerepoort and Kumar 2015). It is pertinent to note here that almost all peripheral work — such as maintenance, running cafeterias, security etcetera — is sub-contracted out by these offshore IT firms. The possibility of the influence of several social characteristics such as race, gender or religion influencing the division of labour have been long argued in labour process literature (refer Edwards 1979), and in India, we find an additional segmentation in the form of caste.

The idea of the 'core' and 'periphery' of the firm's employment mix was originally conceptualised to identify peripheral functions, such as support services, in a firm and hiving them off in order to focus on the core strengths of the organisation (see Atkinson 1984). But, in ITS work — particularly seen through the use of contract workers — this idea or understanding can be seen to begin permeating into core work and the core workforce as well. However, the actual extent of contract workers in the IT industry is not clear and there is little information on such multi-employer, fragmented arrangements. Interviewed workers provided widely varying estimates of the extent to which contract workers were being employed within their own firm. Some workers reported a high

number of contract IT workers being used in their firm — as high as one-third — while others said that their offices did not have any such workers at all. Managers were able to provide better insights and explanations on the actual extent to which IT firms used contract workers.

It is a fabulous thing [contract workers], for established companies. The reason is that if you suddenly get a project and need people, it is like a well-oiled machine...these contract employees will be fully available at your disposal. There are these contracting companies that specialise in this: in the sense, they have the people and they will supply them. With this, contracting and sub-contracting has taken root, very firmly, now in the firm. It's not growing as such; it's stable. (Manager 05, Vice-President - HR, Large Indian IT firm).

[C]ontract employees are picked up for a lot of support functions such as finance, HR and all that. But we will sometimes go for contract resources, even for delivery [IT work]. For example, if you take [the job profile of] SAP consultant, often it is difficult to find and pay a high salary for someone full-time. [Moreover], the employee will only be required for a short period. So then we hire a contract employee. (Manager 09, Senior Associate Lead – HR, Large Indian IT firm).

Based on the interviews, there appears to be an element of skill-set differentiation amongst the contract workers. In the case cited by manager 09 (quoted above), firms may use contract workers for short-term projects where it lacks the in-house expertise to do the work i.e. to address a skills gap in the firm. In such instances, the contract workers employed are often highly paid consultants who are specialists with niche creative skills that are difficult to find in the market, but which were also needed only once in a while or at a particular stage of the implementation of the project. This included skills such as those of UX/UI designers (interview with Manager 07, Chief Technology Officer, Small Indian IT firm); or SAP consultants (interview with Manager 09, Senior Associate Lead – HR, Large American IT firm). These exceptions could also be made when a worker possesses the right skill sets, but does not fulfill the firm's minimum qualification requirements (for example, not being a graduate) (interview with Manager 01, Associate Service Delivery Manager, Large IT firm). Specialist IT workers, who were highly skilled in their areas of specialisation, could only be afforded by the firm — particularly in the case of small IT



firms — on short assignments due to the high fees they charge, somewhat akin to the highly skilled itinerant experts (see Barley and Kunda 2004; Saxenian 1996). Such contract workers are paid very high wages and can dictate their working conditions, and most firms acquiesce to their demands. In other words, what we find is that specialist, highly-skilled and highly-paid contract workers are often deployed along with contractors who are used for day-to-day or routine ITS work as well. This makes it difficult to paint any uniform picture of the working conditions of contract IT workers.

On the other hand, several managers saw no need to use contract workers. The over-supply in the labour market of qualified graduates was so great and the number of job openings so few that they found workers who were willing to work under any conditions.

For the entry level, there are so many people outside. For example, I have an M.Tech<sup>12</sup> guy who joined me three years ago, for a remuneration of Rs 8000 per month [around US\$ 130]. Of course, over these years, his salary has increased...but the point is that he was willing to join for such a low salary. This is mainly because there are too many engineering colleges, creating an over-supply of such graduates. (Manager 03, Senior Project Manager, Medium Indian IT firm)

We don't have any concerns when it comes to recruitment and finding workers. We are able to backfill [or recruit] with the right type of candidates at any time of the year. (Manager 01, Associate Service Delivery Manager, Large Indian IT firm)

Several managers found no need to hire workers on differential arrangements because the labour market was such that it allowed them to recruit regular employees at relatively low wage costs. As a result of the large number of graduates (around 10 million graduates a year) churned out by the Indian education system every year, there was effectively a “buyer's market” for the employers and they could offer any wages and working conditions and they could still find qualified workers. (Manager 03, Senior Project Manager, Small Indian IT firm).

---

<sup>12</sup> M.Tech stands for Masters in Technology, and is a post-graduate degree in engineering.

In sum, an assessment of the nature of employment contracts in the IT sector presents us with a picture of largely formal, regular and permanent employment, but with significant pockets of non-standard employment as well. It has been established that contract workers are utilised for core ITS work, however such workers are often underpaid and denied important employee entitlements/benefits. At the same time, there is an element of skill-based differentiation amongst the contract IT workers themselves, and this makes it difficult to paint any generalised picture about the nature and extent of contractual labour in the industry. For the purposes of this study, the largely formal nature of employment relationships, whether in permanent or contract arrangements, serve to emphasise the largely formal nature of the industry and build the analysis that follows.

## 6.2

### **Evaluation Systems: Promotions, Rewards and Discipline**

The previous section showed how a majority of ITS workers are in formal employment and so governed by the formal rules governing their work. This involves rules which are set up to form the basis for promotions and rewards as well as dismissals and layoffs. Edwards (1979: 139) argues that the main manner by which the deficiencies of technical and simple controls are overcome, is through the integration of a series of bureaucratic controls into the structure of the firm. These are operationalised through a combination of monitoring, evaluation, reward and punishment mechanisms. This section largely focuses on the manner of evaluation.

All the interviewed ITS workers attested to processes of regular evaluations by their managers. These evaluations would be carried out against a set of targets that are set up for each worker. Individual targets are set up during meetings with managers at the beginning of the (financial) year. The workers are then evaluated against these targets in the following year. Such metrics were often, though not always, based on aspects that could be measured and a collection of several such metrics formed the basis for the workers' evaluation. There would be quarterly or semi-annual meetings that reviewed the worker's progress against their targets. Some of the common types of targets and goals that were utilised were: the fulfillment of monthly/weekly/daily work quotas, percentage of work completed

on time, the number of new technical certifications completed over the past year, attendance, leaves, and so on.

Though the type of metric is usually fixed and common across teams and departments, it was their level that was manipulated and varied for each worker. In this, the manager exercises a form of direct, simple control and can be seen to play a central role through her/his personal intervention. The manager exercises a form of simple control in the act of personally setting up and approving the goals and targets for each worker. As a result of this customisation, members of the same team can potentially have the same metrics set at widely varying levels, which would require similarly varying effort.

As per our roles, we have pre-defined metrics set by the company. For example, there could be 20-25 points. Of that, we can select and set the goals on a maximum of 8 to 10 points. Based on this, we can focus on our work. These will be sent to the manager and he will validate whether the goals we have selected are appropriate and valid. Once, he approves, it will come back to me again and I will start working and focusing on it. These will be reviewed after the 10 or 11 months and it will go for appraisal...So, it is we who are setting the goals and usually most of it is achievable. (Worker 13, Systems Analyst, Large Indian IT firm)

The setting up of highly individualised targets plays a key role in subverting any possibility of collective grievances forming over the effort bargain. The subsequent evaluations are also personally conducted by the managers against targets that have often been suggested and agreed to by the workers themselves. Managers meet the workers individually and give a score based on their performance against the targets that had been set up in the previous year. This score is known by various terms such as 'buckets', 'ratings', 'Key Performance Indicator (KPI)', 'Key Result Area (KRA)', 'Personal Business Commitment (PBC)', and so on. For example, one manager explained:

We have an internal rating system here. We rate them [workers] from 1 to 5 based on their performance. Anyone that gets 3, 4 or 5 will get salary hikes as per company policy. But those with rating 1 or 2 will not get any hike. We basically consider 3-5 as good employees, as in, a person who is performing their roles. We

have KRAs which measure them across the year. (Manager 01, Associate Service Delivery Manager, Large Indian IT firm)

It is on the basis of the manager's scores that workers become eligible for promotions and bonuses. The higher the rating, the better the workers' chances for advancing. But these same scores could also be used to penalise 'low performing' workers. Usually, this involved putting them on a probation period in some form of a formal performance improvement programme. Such probations usually lasted between 1 to 6 months and such workers are given a revised set of targets with a roadmap to achieve them called a Performance Improvement Plan (PIP). If the low scoring workers did not manage to bring their performance up to the level requested by the manager, then they could be dismissed, transferred or asked to leave the firm. While this was the standard procedure for removing non-performers, it must be emphasised that such procedures are not followed if the IT firm was facing financial or performance issues or was looking to layoff people in large numbers for any other reason.

In the previous chapter, it was shown how work target inflation was an integral *tendency* to technical controls in ITS work. However, these increases in work targets take place during annual evaluation and target-setting meetings between the individual workers and managers. Thus, technical controls regarding the pace of work are often directly related to bureaucratic mechanisms governing evaluation thus making them difficult to isolate (Callaghan and Thompson 2001). Workers did not report any dissatisfaction with the increase in their work targets with every passing year despite its implications for work intensification and most of the workers said that they could not fault this practice as it was logical to expect increasing workloads with every year of experience (and dexterity) that they gained.

The large number of job stratifications, categorisations and, in this case, the proliferation of highly individualised targets all play an important role in ensuring that workers in the same team are doing entirely different amounts of work. This also means that workers could be on varying salaries even though they are in the same team doing the same work. Not only are salary-related aspects based on experience and skill levels, but also on the

level of individual targets. IT firms demand secrecy and confidentiality from the workers, and this serves to add to the segmentations between workers: work targets and salaries are legally considered to be confidential information and the workers are forbidden from discussing such aspects, thus constituting a significant barrier for forging common grounds with their colleagues and fellow workers.

I'll give you an example: when you join a company and get an offer letter, then it will say that your salary is confidential information. If you cannot even legally discuss your remuneration with your colleagues, then you cannot have this as a major issue. In all other places, like in a factory, I will know that my colleagues are more or less at the same level of salary. Knowing that allows me to talk freely about my salary; it also allows me to get together with these colleagues and maybe demand for more. But here there are so many variable components in our salaries... performance bonuses, benefits etcetera. (Manager 08, Senior Consultant, Large American IT firm)

ITS workers generally perceived bureaucratic evaluation procedures to be fairly systematic and impartial, as they were being evaluated against a set of mutually agreed targets that had been set for them at the beginning of the year. A large portion of the workers said that their managers generally followed these processes and awarded scores and ratings on the basis of actual performance. Yet, the same workers perceived managerial discretion and subjectivity when the highest and best ratings were awarded; this was a key misgiving articulated repeatedly across interviews with ITS workers. That is, a worker could get good to middle level ratings for satisfactorily completing their work and fulfilling their work quotas, but receiving the best and highest ratings was an altogether different ballgame. The awarding of the 'best' ratings were also closely linked to the selections for promotions and bonuses, and these were often perceived to be biased.

In my experience, there is always some level of politics done by the manager where they might favour certain people... due to various reasons they may give more credit to some. Some of us also challenge this by complaining formally about it. The manager can do anything if he doesn't like you, right? So, then what we can do is go to the higher level [to complain], but it is also well known that this process takes

time and, normally, it won't help. One person complaining will not help anything, will it? (Worker 26, Senior Engineer, Large American IT firm)

This performance appraisal is a big concern. In most companies, they say that it is a process that is completely transparent. But in reality, it is not transparent. Even if you meet the goals which have been set for you, it purely depends on your manager what are the kind of promotions that you get. It really depends on the rapport of the employee with his manager. That is obviously there and it is clearly visible. I have seen it 'n' number of times. Even though they say that it is transparent and that it is on a proper evaluation, it doesn't always work like that. I've worked in several companies and I have never seen any of this transparency in practice. This is actually the main issue that most employees face in big companies. (Worker 05, Senior Consultant – Databases, Large Indian IT firm)

The manner of awarding the highest scores and ratings reveals to the workers the subjective elements in what they had previously perceived to be objective mechanisms. In order to address such issues, there are usually formal procedures in place involving taking up issues to second-line managers or higher management. All the interviews workers testified to an awareness of such grievance redressal mechanisms with their IT firms<sup>13</sup>. The existence of such avenues were however not viewed as genuine options as most workers reported largely negative experiences with how this worked in practice; workers were not positive regarding using these options to correct what they perceived as 'unjust' decisions.

There is a grievance redressal mechanism. I think if you face discrimination or any such issues, there is a committee that includes senior management and HR. I once raised an issue with the appraisals as I thought that I had met all my targets and was not happy with my appraisal. I contacted the HR but it was not addressed properly in the sense that they said that they cannot do anything. These committees can't do anything about such issues. (Worker 05, Senior Consultant –

---

<sup>13</sup> The formation of grievance redressal committees was one of the conditions that was placed on IT firms when they were granted certain exemptions from labour laws. Condition II of Notification No. LD 53 LET 2013 dated 25.01.2014 (Government of Karnataka). Available at - <http://labour.kar.nic.in/GOVT-ORDERS/LD%2053%20LET%202013,%20DT%2025-01-2014.PDF> (Last accessed 20<sup>th</sup> October, 2018)

Databases, Large Indian IT firm)

In other words, workers saw few genuine options before them if they had any grievances with their evaluations. In fact, almost all the interviewed workers who were part of the study said that despite being aware of the existence of such mechanisms, they had never used them as they saw little point in doing so.

Managers generally agreed with the workers' assessments about the lack of objectivity in evaluations related to promotions and ratings. However, they perceived this and justified the subjective decision making as an important and critical managerial task that they carried out and not something that contradicts with the idea of an objective procedural system.

It [eligibility for promotions and raises] is purely the manager's discretion. Yes, it can be biased sometimes. Upto Team Lead, there is no such authority in our company. But the moment you become Project Manager, or next level, then you can have the power to make such decisions and it is important to select the right people for such roles. (Manager 03, Senior Project Manager, Medium Indian IT firm)

The handling of promotions, rewards, bonuses and benefits, and the subjective judgments to be made therein, were central to the manager's responsibilities. This makes their subjectivity built into a bureaucratic system that is otherwise touted as 'objective' and this affirms the workers' perception/grievance regarding the subjective nature of the 'promotion and rewards' ecosystems. The lack of avenues for genuine redressal within the firm and the individualised nature of their grievances add to the complexity of this terrain and determines how workers deal with such issues. How the workers deal with such issues will be explored in the following sections.

Overall, this section highlighted the nature and manner of bureaucratic evaluation systems in ITS work. It showed how evaluation systems are integral to the processes that result in work target inflation (discussed in chapter 5), therefore combining with technical control

elements governing the pace to give rise to blended systems of managerial controls (see also Callaghan and Thompson 2001). Workers participate in the decisions regarding increases in their own workloads during annual evaluation when they are demanded to continually show improvements in their productivity. But even after working to fulfill their targets and accomplishing them, they find that this is often not sufficient to get raises or promotions. Such aspects of bureaucratic evaluation systems as well as its high individualisation are firmly kept within the grasp of managements who exert a form of simple control in retaining a large element of subjective judgements in making such decisions. This gives rise to discontent with such decisions amongst the workers, but it must be emphasised these discontents are also highly individualised in nature. Though workers are provided with avenues to address such issues through organisational grievance redressal mechanisms, they do not perceive such options as genuinely capable of addressing their misgivings.

### **6.3**

#### **At the Margins of the Firm: Conflicts around Attrition and Dismissals**

In the previous section, we saw how workers who were dissatisfied or had grievances with work-related issues found few options to genuinely address their grievances within the firm. Workers saw little hope in bureaucratic appeals or in the grievance-redressal mechanisms in place in such firms. It can then be argued that the inability to address their grievances contributes in no small amount to decisions to move out their firms. Nearly half of the interviewed workers had changed jobs recently (within the past one year) and were found to be in varying stages of transition (also refer Appendix D). It is fairly well known that the workers in the Indian IT industry are highly 'mobile' and high attrition rates in the industry have long been known to be a major challenge for managements and HR departments (see Budhwar et. al. 2006; Deery et. al. 2013; Sengupta and Gupta 2011). Where managements see attrition as a significant problem, in this study, it is seen as evidence of the exercise of the mobility power of workers and a form of resistance by them. This issue is therefore examined in greater detail.



### 6.3.1

#### Attrition and Stemming its Consequences

The total number of workers leaving a firm in any given year is termed as ‘attrition’; it is expressed numerically as the total number of employees who leave the firm as a percentage of their total employee strength per year. To understand the extent of the phenomenon, the annual reports of Indian IT firms were examined. Table 6.1 collects data from the annual reports of the four largest Indian IT firms and shows how, over time, they have grappled with annual attrition rates in double digits.

**Table 6.1 — Attrition Rates in Top 4 Indian IT firms (by size of employment) 2000-2015**

	<b>TCS</b>	<b>Infosys</b>	<b>Wipro</b>	<b>HCL</b>
<b>2000</b>	-	-	-	-
<b>2001</b>	-	-	-	-
<b>2002</b>	-	6.2	-	-
<b>2003</b>	-	6.9	-	-
<b>2004</b>	-	8.79	-	-
<b>2005</b>	8.06	8.69	-	20.4
<b>2006</b>	2.84	9.85	-	-
<b>2007</b>	14	12.36	17.4	-
<b>2008</b>	12.28	12.26	18.5	15.2
<b>2009</b>	11.3	10.29	13.2	13
<b>2010</b>	13.34	13.02	13.6	15.7
<b>2011</b>	15.86	15.67	24.1	16.5
<b>2012</b>	12.75	23.1	17.5	-
<b>2013</b>	11.63	28.03	13.7	-
<b>2014</b>	12.29	18.64	15.4	-
<b>2015</b>	14.99	18.9	-	-
<b>AVERAGE</b>	<b>11.75</b>	<b>13.76</b>	<b>16.65</b>	<b>16.16</b>

Source – Author, calculated from respective annual reports.

Note - Years for which data is not available marked by ‘-’

Table 6.1 shows that some of some of the largest, well-known and prestigious IT firms in India have faced double digit attrition rates for a fairly long period of time. Considering the fact that all of these firms have over 100,000 employees, such rates of attrition would constitute a rather large turnover of workers (around 10,000 to 15,000 employees per year). In the case of smaller firms, the share of workers leaving a firm in a year can go much higher, sometimes going up to fifty percent or roughly half of all employees moving out of the firm every year (interview with Manager 03, Senior Project Manager, Medium IT firm). Interviewed managers also repeatedly highlighted how attrition was a central cause for concern for them.

So in my organisation, the primary challenge is attrition. Attrition has always been there in the IT industry. So we are finding it difficult to control attrition; there are reasons for this that you can't do anything about. There are other related problems due to this. One is hiring costs — because you [the firm] hire freshers [fresh graduates], and then there is constant attrition among these junior resources. Typically, companies like ours invest our money in hiring, then we invest our time and resources in training them with a proper curriculum and everything. Then when attrition happens, it is a big problem for us. (Manager 09, Senior Associate Lead – HR, Large Indian IT firm)

We are always focusing on upgrading the workers' skills, but then we find that the workers start looking for opportunities elsewhere once they have gained skills and experience. Attrition is always a concern and it is difficult to strike a balance on that. It's never been resolved anywhere I guess...attrition is a major problem. (Manager 01, Associate Service Delivery Manager, Large Indian IT firm)

The numbers and examples give some indication of the seriousness of the issue. However, the statistics on attrition must be probed further, particularly if they are taken to be as a proxy for what we understand to be workers' mobility. Given that the statistic measures the number of workers who left a firm in a given year, it also includes workers who may have been dismissed (or laid off). As a result, this statistic alone cannot give an accurate picture of the proportion of workers who are moving out of an IT firm 'voluntarily', for it

also includes those who may have been forced to leave. Following on from this understanding, it is possible to differentiate the total number of workers who left an IT firm into two major types/categories of attrition: Voluntary Attrition (VA), through voluntary resignations; and Involuntary Attrition (IVA), equivalent to dismissal or retrenchment. It is obvious that the two are completely different processes and are examined separately, with the former discussed in this section and in section 6.3.2, and the latter is examined in section 6.3.3.

As Table 6.1 demonstrated, for a significant part of the past two decades, Indian IT firms have been dealing with high attrition rates. This poses a major challenge for HRs and managements in IT firms and the magnitude of this challenge may be inferred from the diverse and multiple policies that have been introduced by HR departments to tackle this and to retain workers for longer periods of time. Some of the more dramatic policies include giving employees a host of luxury gifts, ranging from expensive gadgets to cars and all-paid international holidays, as part of annual bonuses (see Firstpost 2015). Some IT firms also offered special bonuses and other benefits to employees who married their colleagues within the same firm in the belief that this would re-inforce the worker's loyalty to the firm (Outlook 2006). However, these and other routine initiatives have been largely ineffective in stemming the attrition (Noronha and D'Cruz 2010: 94). What is being emphasised here is that the wide prevalence of such strategies indicate that workers voluntarily moving out of organisations indeed contribute to a large part of the attrition statistics, i.e. to the Voluntary Attrition (VA).

Managers usually anticipate or factor in the reality of high attrition levels in their planning. Typically, IT firms kept a set of workers as 'buffer' or on 'bench', in order to ensure that they can survive rapid attrition of workers (interview with Manager 02, Project Manager, Large Indian IT firm). By implication, most Indian IT firms almost always had more employees than they needed at any given point in time, and these buffer workers would just replace the employees as soon as one set of workers is about to leave.

I don't have an issue with attrition. What we do is every 6 months, we take 3-4 guys. Because we are a small company, we can't compete with the big guys. We know that

in some way, freshers see us as a training centre; and after one year, at least 50 percent of employees will jump ship. So we plan and we are prepared for attrition. The only reason we can afford to do that is because of the labour arbitrage. The new employee gets hardly 10,000 rupees [around US\$ 150]. If I can bill him even for 3 days, I can recover his cost...that's what it looks like, in purely number terms. (Manager 03, Senior Project Manager, Medium IT firm)

Much of the attention on attrition has been focused on the challenges it poses to IT firms and managements, but it is also important to analyse the phenomenon of mobility for what it indicates about the workers. It has been argued in literature that the mobility of workers may also be seen as evidence of an important type of resistance by them (Bain and Taylor 2000; Mulholland 2002). For whatever reason they may leave a firm, the voluntary attrition of ITS workers could be seen as an exercise of their 'mobility power' (see Smith 2006, 2010). Apart from the potential disruption in services, the mobility of IT workers also poses a challenge in terms of control over knowledge which could be lost with these workers; some of the complexities of which had been discussed in the previous chapter.

The loss of highly skilled and trained workers poses a major challenge for any management. Such workers are not easily replaceable and may possess a high degree of tacit knowledge based on a combination of their skills and work experiences. Moreover, the mobility of the workers also poses a threat to the smooth delivery of services, as well as the retention of organisational and work-related knowledge. Here, ITS managements can be seen to ensure that services are not disrupted due to worker mobility by adopting a variety of strategies. Central among these strategies is the attempt to ensure that exiting workers are prevented from leaving the firm suddenly or, in other words, reduce their mobility. The main way by which this is ensured is by making sure that the exiting workers complete three months at the firm as part of a 'notice period' to be served before moving out of a firm. This notice period was not only to ensure that the departing workers transferred their responsibilities to their replacements, but also to ensure that they codified and transferred as much of their knowledge as possible; a process that was usually termed as 'Knowledge Transfer' or KT (interview with Manager 02, Project Manager, Large Indian IT firm).

Employers in the IT industry utilise a three-month notice period to reduce the potential negative effects of the mobility of ITS workers. The official explanation for the three months period is that it is the time a firm requires to find and train replacements. But this industry-wide practice is examined here because it stands out as being unusual. This is because the applicable law, the (K)SCE Act, 1961 (s39), requires firms to only provide a one-month notice period; however, Indian IT firms prefer to have a longer one. It is well known that the Indian labour market offers a surplus of qualified graduates and, as shown earlier, Indian IT firms too routinely maintain a certain number of workers as a buffer internally. It is then reasonable to surmise that the three-month notice period is not the time required to find a suitable replacement candidate but rather to ensure that managements can retain the same level of control over the work and the service delivery, because such mobility has the potential to genuinely disrupt the services being provided by IT firms.

A Bravermanian deskilling involving the appropriation of knowledge, the fragmentation and standardisation of work is then not only for managements to generate additional surpluses from the labour process but also to ameliorate the risks arising from worker mobility. Here, it could be argued that the notice period and the KT process are crucial to the IT firm to retain knowledge about the work. Even though firms try their best to codify knowledge of the work, there still remain several aspects of the practical execution of the work that is not documented, codified or made explicit. Needless to say, exiting workers also have little incentive for transferring their knowledge once they have put in their resignations. European firms are known to address this by paying highly generous settlement packages in return for ITS workers to properly train their replacements and ensuring a comprehensive KT (Flecker and Meil 2010: 688). However, the large scale of attrition in Indian IT firms makes it unviable for firms to offer similar options to remunerate the exiting workers. Rather, IT firms resort to various other methods to coerce the exiting workers into transferring their knowledge properly and training their replacements. Resorting to such methods indicates a lack of control (of management) over a detailed knowledge of the day-to-day work (aspects of which had also been discussed in the previous chapter in section 5.6).

ITS work, owing to its knowledge-intensive nature, also often involves a high degree of tacit knowledge. Skills and knowledge about multiple complex computing systems need to be combined with a degree of knowledge about how to fix and maintain such systems. This requires a degree of tacit knowledge that is largely known only to the workers who are familiar with these systems and this gets reflected in the firm's need to get the workers to train their replacements. But, in the case of offshored IT work, it has been shown that the absence of firm knowledge could be also due to the knowledge conflicts that arise from the extended chains of managerial controls (see section 5.6). Offshored Indian ITS firms often have complicated relationships over the ownership and control of the knowledge of the work, directly stemming from the nature of the client-vendor relation. The resulting inability to control knowledge of work results in the managements in Indian IT firms to place singular focus on reducing the mobility of workers by enforcing notice periods in order to ensure that the replacements can be brought up to a similar operational level as the departing worker. The enforcement of the notice period and a comprehensive KT is then a key means through which IT managements prevent major disruptions to IT services and ensuring that most of the exiting worker's knowledge and experience transferred. It is here that various managerial control strategies that attempted to insulate the firm and its services from the mobility power of the workers came to the fore, such as in the case of workers trying to leave the firm without completing the KT. Managements and HR personnel are known to pressurise or coerce in various ways to do so, sometimes withholding the final wage settlement or refusing to provide experience letters or threaten to provide negative recommendations to future employers (interview with General Secretary, ITEC, Worker's Association). In using such strategies, managements continue to exert control even after the workers have left a firm.

Workers come to us with issues about background verification. For example, the previous company would have given negative inputs, even though they would have performed well at the company. They give negative feedback in the background verification process which can affect their prospects. Some workers were also denied the relieving letter.

In one specific case, there was one woman employee who had health issues and she took leave for a month. The company did not like that. Once she came back from the sick leave, she wanted to quit. Later, they were not ready to give her the

experience letter. We got involved in this issue and managed to secure full benefits for her. (Representatives, FITE<sup>14</sup>, worker's association)

The widespread use of such strategies and its justification is perhaps best illustrated by the employers' association (publicly available) statement regarding the manner in which each worker's background is verified when they join an organisation.

“As the country does not have a central and public database of its citizens it is difficult to collect and verify information about the credentials of any employee. The Indian industry has met this concern partly by adopting security practice of engaging third party entities to conduct background check on persons selected to be employed in the industry. There is no standard practice used for background checks and information history and reference data is not developed over the career cycle of an employee so that with each change in employment all his/her information needs to be collected and verified again.”

**Source** – National Skills Registry (NSR) official website. Available at - <https://nationalskillsregistry.com/nsr-context.htm>. [last accessed 04 October, 2018]

The IT industry's employers' body, the NASSCOM, has evolved a standardised procedure for extensive background verification of each worker hired in the industry. Such background verifications is common practice in the industry and every job is predicated on clearing the background verification process. The threat of not providing recommendations or providing negative recommendations from the previous employer can then potentially have a strong effect on the worker's chances of getting their next job. Thus, if the workers moved out of a firm without fully complying with the management's requests (whether it be regarding the notice period or the KT), then there remains a possibility that managements may discipline these workers, even though they have technically left the organisation.

---

<sup>14</sup> The newly formed trade-union, FITE, was an informal association at the time of this study's field-work, but subsequently formally registered as a trade-union (in Sep-Oct 2017) about six months after the fieldwork ended.

Such threats, of providing negative recommendations and denying experience letters/certificates, results in the workers usually have to oblige the demands of management. The influence of such factors plays some role in instances where workers write out their resignation letters themselves even while being forced out of the firm. In such instances, the line between what is VA (or a genuine exercise of mobility) and IVA then becomes blurred and unclear.

Now if we want somebody to leave, then we ask them to resign. Because that eternal threat is there that you won't get a proper relieving letter. They will succumb to the pressure and they will write it [the resignation letter]. (Manager 03, Senior Project Manager, Medium Indian IT firm)

Workers' associations pointed that there also existed strategies for disciplining workers at the industry level such as placing them on a 'blacklist' via the National Skills Registry (NSR)<sup>15</sup> (interviews with representatives, FITE and ITEC, workers' associations). The NSR represents a fairly unique employers' initiative. It is an online database created and operated by the employer's organisation, NASSCOM, which records the biometric and professional details of all IT workers that are registered on their database. Subscribing firms can get their employees registered and the details of these employees verified by professional background verification (described earlier in this section) firms that have been enlisted especially for this. On its public website about this initiative, the employer's association stated that it has:

...taken up the Industry initiative of developing a national database of registered and verified workforce for its member companies as "National Skills Registry (NSR)". NSR seeks to develop a life-time permanent profile for each person working in the industry. Such profiles will be uniquely identified based on biometrics and will hold credible data about each industry employee including results of background check conducted by a professional third party on the information of such person. NSR is a web-based system hosting a fact sheet of information

---

<sup>15</sup> See Deccan Herald 2009 for example. Workers have often brought this up on HR forums to confirm whether such threats by managements carry any weight. An example from one such HR community forum called CiteHR.com can be found here: <https://www.citehr.com/543157-blacklist-nsr-not-joining-company.html> (Last accessed 11 September, 2017)



about existing and prospective employees of Indian IT & ITeS / BPO industry. This can be used by the IT & ITeS / BPO industry and its clients as a credible source of information about the registered professionals.

**Source** – National Skills Registry (NSR) official website. Available at - <https://nationalskillsregistry.com/nsr-context.htm>. [last accessed 10 September, 2017]

As on May 2017, when the fieldwork for the study was completed, around 220 IT firms had registered and were subscribing to the NSR's services. The database itself contained records with the personal, biometric and professional details of over 2.24 million IT workers (NSR 2017). The enormity and size of the database can be grasped when one considers that the total industry employed just over 3.5 million IT workers in 2017. In other words, roughly two-thirds of all the IT workers in the industry were registered on the database. Though the official and public reason for the database's existence was to identify and ensure that workers do not provide fraudulent educational qualifications and thereby reduce the scope for commercial fraud in the Indian IT industry (Noronha and D'Cruz 2009: 141), the workers' associations perceived the NSR database as a tool that was used by managers to threaten workers who did not comply with managerial requests (interviews with representatives, FITE, IT worker's association; General Secretary, ITEC, worker's association).

Deployed in this manner, the NSR becomes a modern, digital version of a traditional blacklist. The potential and power of blacklisting then grows more detailed (due to its biometric nature) and global (due to its digital nature). Though fears of such a blacklisting are arguably overblown, that a blacklist could be imposed at a national (and even international) level with relative ease makes even the highly skilled ITS workers hesitant about crossing paths with managements. Such fears of potentially being blacklisted and their careers restricted was cited in several online forums as a reason for the workers obeying the management's demands. Unlike strategies of employer collusion — such as non-poaching agreements, oligopolistic agreements or modifying the labour market — the use of blacklists evidently constitutes a disciplining strategy. Such tools have the potential to transcend the workplace and extend into realms outside the workplace and even operate

at the level of the industry. While it was not entirely clear whether the employers or employers' bodies can genuinely blacklist workers or whether such actions have been carried out in the past, the clear potential to do so is enough to create doubts amongst the workers. The prospect of being locked out of most of the major firms could be seen as a severe setback, if not an end to their professional career; a fear several workers articulated in interviews. This is no small threat, the magnitude of which is viewed as being able to genuinely deflect any conflict, if not suppress it altogether.

In sum, this section has shown how voluntary attrition constitutes a genuine problem for IT firms and managements. This is not overcome even after the introduction and deployment of several HR benefit/incentive strategies. As a result, IT firms have to also resort to various tactics to reduce the worker's mobility as well as coerce them to do the management's bidding. This has been shown through examples of extended 'notice periods' as well as coercive practices during a worker's background verification process. Such practices are often approved and sometimes even deployed at the level of the industry through employer's representative body. As a result, workers recognise the power of such oligopolistic practices and have to often cede to managerial pressures and demands.

### **6.3.2**

#### **The Reduced Mobility of ITS Workers and its Discontents**

The three-month notice period and IT firms' attempts to restrict worker's mobility emerged as a major issue of contestation for the workers. Workers found such practices highly restrictive and desired a reduction in the notice-periods to shorter time-frames.

[T]he three month notice period is too much. I mean if someone is really fed up with the company and he really does not want to work with that company any more, it's too much to expect them to stay on for three whole months. Because of this, I recently signed a petition online, on Change.org. [appealing to the government minister to stop this practice]. (Worker 21, Senior Network

Integration Engineer, Large American IT firm)

This was echoed by several interviewees and was apparently a topic of intense discussion in online communities of IT workers. Illustrating this, during the period of the fieldwork, two separate petitions were launched online (on the petition website - [www.change.org](http://www.change.org)) – just to reduce the length of notice periods from three months<sup>16</sup>. The titles of these petitions were:

i) *“Regulate the cap on Notice Period for working class”*

(petition started in December, 2016)

ii) *“Stop Indian IT companies from forcefully holding employees with 3 months' notice period”*

(petition started in February, 2017)

These petitions quickly garnered over 30,000 and 50,000 online signatures respectively within a couple of months. Based on the large number of signatures that the online petitions managed to gather, it would be reasonable to say that a fairly significant number of IT workers shared this sentiment. At first glance, such a demand by the workers — for a reduction of the notice period — appears to make little sense, or even counter-intuitive. Why would workers want shorter notice-periods and separation times given this could lead to an increase in the precariousness or uncertainty in their employment? For the interviewees, the demand originated due to the prospect of losing fresh opportunities and, by extension, their very chance at exercising mobility. Interviewees attributed their support for such petitions due to the fact that most Indian IT firms required new hires to join almost as soon as the job was offered and were often not ready to give them three months' time to join.

---

<sup>16</sup> These petitions were launched online on a popular 'petition' website called Change.org - and they quickly garnered 30,000 and 50,000 signatures respectively within a few months. They are available through these links -

1) <https://www.change.org/p/ministry-of-labour-and-employment-regulate-the-cap-on-notice-period-for-working-class> (launched on December, 2016)

2) <https://www.change.org/p/ministry-of-labour-and-employment-to-stop-indian-it-companies-from-forcefully-holding-employees-with-3-months-notice-period> (launched on February, 2017).

Both last accessed on 10<sup>th</sup> September, 2017.

The main concern I have with this industry — in fact, the only thing that I would suggest needs to go — is the notice period. Three-months or four-months' notice period is too much. Because it is very difficult to get a new job. In most companies, the requirement will be urgent. If you have three months notice period to serve, then it's very difficult to get a new job or to make a move. One month is fine. (Worker 07, Technology Analyst, Large American IT firm)

There is an inconsistency in the industry; firms demand those whom they offer jobs to join immediately even as they themselves enforce the three-month notice period on those who seek to exit. Both emerge as prevalent — albeit contradictory — practices in the industry; not just putting workers in a tough spot but also nudging them towards opposing what essentially would be seen as a safety net. Another such contradiction, which some workers highlighted, lay in the fact that the three-month notice period was usually only observed when the workers put in their resignation, but was not invoked if s/he was being dismissed or laid off by the firm. This was also perceived as unfair by the workers:

When they lay off people they only pay the basic component, which is not even close to the actual salary. They pay some money, but it is hardly of any use — when they decide to fire someone, they should at least give three-months' notice so that he can search for a job outside. If it is expected that we serve our notice period when quitting then it should also work the other way round. If the company can sack us overnight, then we should also have the right to do the same. (Worker 14, Senior Analyst - Networks, Large European IT firm)

Overall, IT workers do not see the three-month notice period as being beneficial to them or working in their interest. A majority of workers identified a level of precariousness in their employment, in that they saw it as a distinct possibility that they could be sacked or laid-off at any time with little by way of compensation. The three months' notice period did not protect them from this precariousness as, in practice, the notice period was not a reciprocal arrangement, thus making it appear as an unfair imposition and something to be done away with.

It is pertinent to note that workers, both during interviews and in the petitions that were signed by substantial numbers employed in the sector, addressed their petitions (to reduce the duration of the notice period) to the state. Rather than addressing it to the well-known employers' association, NASSCOM, or for that matter prominent IT firms, the petitions both appealed for state intervention; this choice is significant in that it shows employees organically viewing the state as the mediator in such practices of employers and firms. Both of the petitions listed earlier were addressed to the central government's Ministry of Labour and the Minister in charge, seeking regulatory intervention for the practice of extended notice periods. That the workers and workers' association turn to the state — be it through online campaigns discussed earlier or in the more formal collectivised action — resonates with Edwards' (1979: 161) observation that workers had long "...turned away from unions and looked instead to government to regulate, protect, and provide". The demand by workers to seek regulation rather than negotiate with employer organisations forms an important aspect in discussions around the connections between managerial controls and with labour regulations that will be explored later (in section 6.4).

The demand for the reduction of the notice period is not without legal basis, or rather it is supported by the law that pertains to employment in the industry. As pointed out earlier, the Karnataka SCE Act, 1961 (s39) requires only a minimum one-month notice period. But one HR manager explained, this was not applicable in the case of worker's resignations.

The government has nothing to do with this. From the terms and conditions of employment on the HR side, one month notice is the period to be given [by the company]. Some organisations give two months, some organisations give three months. The government has no role because there is no regulation as such [for voluntary separation]. For firing, there is some regulation. If you want to fire somebody, then you have to give one month notice or based on the terms and conditions in their contract. (Manager 05, Vice-President – HR, Large Indian IT firm)

Without the presence of any regulatory constraints, it becomes evident then that Indian IT firms utilised a three-month notice period to reduce the risks posed by the mobility of

these workers. Jacoby (1998) and Smith (2006) termed this ‘mobility power’ — or the worker’s ability to move out of an employment relationship within the capitalist labour market — a ‘second indeterminacy’ of labour that managements have to contend with. From the range of empirical data presented in this section, including worker interviews, it is clear that workers viewed it as a way of restraining their mobility and preventing them from moving between firms whenever they wanted to (also see Taylor et al. 2008: 43). How the contestations and conflicts around these issues regarding separation manifest themselves are examined in the next section.

### 6.3.3

#### **Dismissals and Layoffs: Fundamental Conflicts and the Emergence of Resistance**

In the earlier sections, it was shown how workers attempt to exercise their mobility power and the manner in which managements sought to blunt the risks that this posed through various mechanisms. However, not all the workers who move out of a firm in any given year are doing so out of their own accord. The remaining workers that make up the attrition statistics would be those who have been dismissed, sacked or coerced into submitting resignations. These constitute the ‘Involuntary Attrition’ or IVA of the firm. One of the reasons for the strong demands of the reduction in the notice period by the workers was the fact that firms required a three-month notice period when workers resigned from a firm, but dismissals and layoffs would seldom follow the same protocols. As a result, workers felt that they were in insecure employment:

Here, you really can’t predict what will happen the next day or the next moment after you logout from office. Job insecurity is huge. My friend in the team faced this issue earlier and the way it happened was really scary. One day she was working as normal, she completed her shift, she went back home...later in the day she was just called by the manager and told: “you’re being fired; tomorrow come, surrender your laptop and go”. She was not even given a day’s notice. This happens very often and in many companies in this industry — it’s just hire and fire and there is no concept of job security. There should be some limits on how

companies can do this. There should be at least some proper communication and notice for the employee so that they can find their next job. (Worker 27, Principal System Administrator, Large American IT firm)

In the case of the Indian IT industry, dismissals and layoffs have been noted as a prominent flashpoint between workers and managements (see Phadnis and Ayyar 2017). During the period of this study's field-work, in the first half of 2017 in particular, there were continuous reports of IT firms laying off workers in large numbers. Though the actual extent of these layoffs was contested by employer representatives<sup>17</sup>, it was clear that layoffs were occurring to some extent, and often in numbers substantial enough to warrant media attention. The issue of large-scale layoffs in the IT industry in India is not new but what is being highlighted through the layoffs is that the workers belief that the three-month notice period was not reciprocated. Firms and management did not extend similar protections to them in the case of dismissals and layoffs:

'There are many ways by which a firm can fire an employee. I must admit that even I've been part of that. In 2009, when this recession happened, I literally called people to my room and said 'take 3 month's salary, please don't come from tomorrow'. I have also had to people to leave even in one month, and in some cases even in 15 days — they were not even given three months' notice and in some cases, not even any compensation. It also matters what kind of work profile the employee is in: if it's just an ordinary guy, then we can send him out in 15 days. (Manager 03, Senior Project Manager, Medium Indian IT firm)

For Littler (1990: 67), "the ultimate form of managerial control is the power to threaten loss of employment — a relation which, in part, defines the nature of wage labour". And in an industry with a wide range of practices around dismissals, the interviewed workers had identified this insecurity as introducing a significant element of 'risk' in their work

---

<sup>17</sup> The local labour department in the neighbouring Indian state of Telengana summoned the officials of IT firms to clarify the extent of these layoffs. Refer: <http://economictimes.indiatimes.com/news/politics-and-nation/telangana-labour-department-calls-cognizant-to-discuss-layoffs/articleshow/58601969.cms> [last accessed 8 September, 2017] The employer's body denied that such layoffs were taking place. See- <http://www.thehindubusinessline.com/info-tech/nasscom-rejects-layoffs-in-it/article9707224.ece> [last accessed 8 September, 2017]

lives. Some firms did provide three months' salary as compensation for the notice period, however, the compensation is often stripped of variable components of the salary or incentives which typically form the bulk of the remuneration workers' receive (interview with Worker 14, Senior Analyst - Networks, Large European IT firm).

Layoffs in IT firms in recent years have been attributed to business challenges, largely owing to difficult external markets and the macro economy, resulting in a slowdown in the growth of the industry and in an overall tightening of the labour market. As IT firms reduce hiring, finding new jobs also becomes tougher for the workers, thereby reducing their mobility power. Figure 6.1 examines the data on employment in the Indian IT industry and shows how there has been a decline in the rate of growth in employment in the Indian IT industry over time.

**Figure 6.1 – Annual growth in employment in the Indian IT industry (2000 – 2015)**



Source – Table 4.2

Figure 6.1 clearly illustrates how employment growth in the industry has significantly slowed after 2008, the year of the global economic crisis and has not recovered since. This has meant that in the period since, marked by decline and stagnation in employment, overall hiring has slowed down significantly, both in terms of fresh graduates and lateral hires. Typically, the impacts of trends in global macro economy are not restricted to just



the financial health of companies but can also exert pressures on managements to change the manner in which work is organized within their firms (Kelly 1985; Taylor et al. 2014; Roy et al. 2017). Adverse market conditions compel firms and managements to explore new methods to increase productivity and a significant strategy is to deploy new technologies such as automation. The management-led deployment of automation and its diffusion into the ITS work process was discussed in detail in the earlier chapter — this type-case was characterised as ‘automation from above’ (section 5.5.1). Rapid advancements in new technologies — such as Machine Learning, Automation, Cloud Computing and Artificial Intelligence — mean that work can be reorganised and several sub-processes automated; naturally, this has had implications for the nature of work and the number of jobs in ITS work as well. Managers, who utilised automation saw a negative impact of such technologies on job creation in ITS work (interview with Manager 06, Chief Technology Officer, Large Indian IT firm).

The tightening of the local labour markets (see table 6.1), competition from other geographies, protectionism and a move to improve efficiency and productivity in the sector have all significantly impacted the mobility power of the IT worker. This is seen to lead to conflicts over separations between workers and IT firms. The layoffs since 2015 have been perceptibly distinct from earlier years because workers have resorted to a variety of public methods to resist dismissals and layoffs by IT firms. For example, during the fieldwork period, workers resorted to clandestinely recording conversations with HR personnel and releasing them online; one such instance caused significant backlash against the manner of dismissals and elicited a public apology from the CEO of a top Indian IT firm<sup>18</sup>. Other methods included going to the media with such instances, creating online petitions, filing of legal cases of ‘unfair dismissal’ against employers and going through with industrial arbitration and dispute resolution procedures (interview with Representatives, FITE, worker’s association). However, most of these methods and issues were highly individualised and therefore tended to be limited in scope.

---

<sup>18</sup> The chairman of the fifth largest Indian IT firm Tech Mahindra was forced to issue a public apology due to the way that the HRs handled the sacking. Refer to link - <http://www.ndtv.com/india-news/tech-mahindra-bosses-apologise-over-manner-of-techies-firing-1722041> (last accessed 10 September, 2017)

In general, workers in the Indian IT industry are known to be reluctant to collectivise and unionise (Noronha and D'Cruz 2009: 111; Sandhu 2006). To some extent this can be explained by the fact that the IT industry in India is relatively 'new' in terms of its history, with little by way of unionisation and collectivization in its past (Doellgast and Pannini 2015). As a result, the formation and operation of collective organisations in such industries becomes much more difficult than in other industries with a longer history of such organisations because they need to be built up from scratch. Further, managerial strategies contribute to a high degree of individualisation of the work effort (discussed in section 6.2) and this reduces the scope for any collective grievance formation within workplaces. In instances where collective grievances arise, IT firms actively attempt to address them using various internal HR mechanisms that incorporate the workers' demands.

We've actually increased the night shift allowances last year. They were increased from Rs. 160 per night to Rs. 210 now. And they also introduced coupons for employees who work in the nights. This means that the person is actually getting benefits worth of Rs. 250 per night in addition to monthly pay. These was [introduced] following *open house* sessions that the HR had with the employees across the organization. So, when this was brought up, they decided to increase it by 'x' percent. (Manager 01, Associate Service Delivery Manager, Large IT firm)

Along with such factors, the reluctance to collectivise was also seen to depend on concrete conditions of demand and supply in the labour markets affecting the worker's bargaining power.

Initially, it was an employee's market. There weren't enough IT workers as the industry needed. So it was easier for the workers to get what they want...rather than organise. But slowly, this situation has been changing. It is now an employer's market...the structure of the IT industry itself makes collectivisation or the formation of unions very difficult. (Manager 08, Senior Consultant, Large American IT firm)

All of these factors play a role in discouraging collectivisation and unionisation amongst IT

workers. Attempts at collectivisation and unionisation in the Indian IT industry had failed to gain wide traction and gradually petered out (Noronha and D'Cruz 2013). However, contrary to expectations, in the years since 2015, the industry has seen the formation of several workers' associations and trade-unions. Workers especially find common ground over concerns of job insecurity, seen as an issue affecting all workers. Though this was by no means a new issue to IT workers, the escalation in the frequency of dismissals and layoffs provided a common cause (Representative of FITE, Workers' association). This issue also appears to present workers with a major threat, unlike the more 'everyday' concerns — such as long working hours, unpaid overtime, women's safety, increasing contractualisation, decreasing benefits, declining wages etcetera — that earlier collectivisation attempts revolved around. An example of this is seen in a prominent flashpoint over the issue of large scale layoffs and terminations in 2015, when the Indian IT major TCS attempted to lay off a large number of workers. This was contested through several high visibility campaigns by the then freshly-formed association, FITE, (quoted below); these campaigns were able to secure the reinstatement of some of the laid off workers. The success of these campaigns, although partial, also received wide coverage in news media.

We came up with the idea of forming an association during the mass layoffs that took place in TCS [in 2015]. At that time, our membership was at its peak. Over a short period of time, we saw more than a thousand members joining us, and getting registered with us. (Representatives, FITE, worker's association)

Around this time, several fresh attempts to collectivise were also forged: apart from FITE (quoted above) which set up its Bengaluru chapter with this campaign, other new associations of IT workers include New Democratic Labour Front (NDLF) and the Karnataka IT Employees Union (KITU) which were formally registered in 2017. Notably, though KITU and its members largely operated as an informal organisation but it was only post 2015-16 that it was able to build enough support within its members to go the trade-union route (interview with General Secretary, KITU, Trade Union).

IT workers associations and trade unions have faced significant difficulties in growing their membership in the past (Noronha and D'Cruz 2013; Sandhu 2006). IT workers often

perceive unions as organisations that can address their personal grievances rather than for collective participation and so IT industry-based unions have traditionally found it difficult to retain members (interview with acting-General Secretary, UNITES, Worker's association). However, the current growth of collective organisations appears to indicate some change in the nature of contestations and conflicts between IT workers and firms. It is pertinent to note that the type of organisations seen emerging here draws members not from single workplaces — that is, by creating workplace collective bargaining organisations — but rather draw members from across the industry. Such organisations also appear to leverage the power of the state to regulate employers rather than bargain individually with employers. This is explained by the fact that the issues that these workers collectivise around (such as dismissals and layoffs) manifest themselves across firms in the industry rather than single workplaces, and so are broad industry-level issues.

The emergence of collective organisations in recent years could perhaps be read as representing a break from the perceived failures/shortcomings of individualised methods of resistance — even those directed at the State, for instance, in the form of individual disputes raised with the State Labour Commission — have created the ground for collective action. The impetus to collectivise at this stage also comes from issues that are industry-wide, be it the slowdown in the sector or technology-induced trends such as automation. But, analytically, this underscores the earlier point that it is tougher to find common ground among workers within a single workplace. This was attributed to the fragmented nature of employment in these workplaces and bureaucratic control strategies that deploy a large degree of stratification in jobs, working conditions and benefits resulting in a heterogeneity of work, work targets, working conditions and benefits; but crucially, also preventing the rise of any common grievances amongst the workers (Edwards 1979: 133). But here, it is important to understand that this heterogeneity in work and effort bargain is not incidental, in that it is strategically managed through a logic of homogenisation and standardisation in the work output. Conversely, this implies that it is easier for workers to form associations or unions at the level of the industry rather than at the workplace-level or firm-level.

Dismissals and separations, and the rules around them have strong political and regulatory dimensions (Jacoby 1998; Smith 2010). The managerial power to dismiss workers is blunted to an extent through national institutions systems utilising a combination of strong

regulations around unjust dismissals and unemployment insurance policies (Emmenegger 2014). But, in the case of the IT industry in India, the general lack of the existence/enforcement of such regulations and a low awareness about existing provisions means that managements retain significant power when exercising such controls. Formal and informal strategies that avoid or obfuscate regulatory connections (Noronha and D'Cruz 2009: 44) only serve to further uncertainties in the minds of workers or aggrieved employees about challenging managements and employers. This obfuscation at the regulatory level can also be evidenced in the fact that various courts and local/federal offices of the Labour Commissioner have to periodically issue formal clarifications that basic labour laws **do** in fact apply to IT industry and its workers<sup>19</sup>; government labour officials also attest to the lack of awareness among IT workers as a challenge they face in being able to play a more effective role (interview with Government Official 01).

## 6.4

### **The Other Boundary of Labour Processes: Connections between Managerial Controls and Labour Laws and Regulations**

In the beginning of this chapter, it was shown how the Indian IT industry is largely comprised of formal employment. This was done for two reasons. Firstly, this is in stark contrast to the largely informal nature of the majority of employment in India. Due to the largely informal nature of the Indian economy, the IT industry is one of the few generators of formal and regular employment and the industry encouraged by the both local and national governments (Barnes 2013; James and Vira 2010). Secondly, and more relevant for this study, its largely formal nature serves to emphasise the fact that the IT industry is governed by formal labour laws and regulations. Though, in general, it is understood that labour regulations affect employment and work in a variety of ways, it was shown earlier (in section 2.5) how there is relatively less clarity on the manner in which labour processes are connected to and affected by the wider political economy, in particular with the

---

<sup>19</sup> In 2016, in the neighbouring State of Tamil Nadu, the Labour Commissioner's office needed to issue an elementary clarification based on a petition submitted to the High Court about the applicability of labour laws to the IT industry and the fact that IT workers are allowed to form unions. Link: <http://timesofindia.indiatimes.com/business/india-business/Techies-can-form-unions-at-workplace-Tamil-Nadu-government/articleshow/52664642.cms> (Last accessed 10 September, 2017)

institutions that govern work and employment (Elger and Smith 2005; Smith and Meiskins 1995; Storey 1985a; Thompson 2003; Vidal and Hauptmeier 2014).

In order to discern such connections with labour processes, Thompson (2013) suggests that external spheres should be treated distinctly from the labour process and then connections sought to be identified. The economic logics that underpin regimes of accumulation, financialisation and economic regulation (such as those related to inflation, credit creation/allocation, consumption, value chains etcetera) were outside the practical scope of this study. Rather, the field research focused on the institutions that directly regulate employment locally and govern the point of production; specifically systems of labour laws and regulations that govern employment and work in the IT industry. While much of the background theorisation for these explorations were discussed in chapters 2 and 4; the logic of the analysis itself was developed from a crucial, but relatively less-explored, observation made by Edwards regarding how labour regulations potentially impinge on managerial controls (1979: 162). As a result, managerial controls and the control imperative were utilised as the theoretical basis from which links between work organisation, labour processes and larger regulatory mechanisms around work could be built (also see Storey 1985b). The field interviews sought to building an understanding of the complex — and in parts, apparently contradictory — relationship between labour regulations and managerial controls. Thus, the analysis in this section examines the different aspects of managerial controls that interact with aspects that are regulated.

Interviews with government officials from the office of the Labour Commissioner (who governed industrial relations in the IT sector) confirmed that IT firms in Bengaluru were covered by 27 labour laws (interview with G01, Government official). Of these, 4 were federal State-level laws (the State of Karnataka in this case), while 23 were National labour regulations. Details regarding these laws, as well as some pertinent related issues have been discussed in depth in chapter 4 (section 4.3). This elementary fact had to be verified because of the general lack of clarity about the applicability of labour regulation to this sector, both among the interviewees (predominantly among workers, but also managers) and noted in scholarship (refer Noronha and D'Cruz 2009: 45). Government officials alluded to how the widespread confusions or misconceptions were counterproductive to

the welfare/interests of workers in the sectors (interviews with G01 and G02, Government officials). However, these officials also pointed out that local-federal governments were in general not keen on enforcing many of the regulations and, in parts, had exempted IT firms from some of the applicable regulations (also see chapter 4). Unlike factories and workplaces in more ‘traditional’ industries, IT firms were largely only required to self-certify their compliance with work regulations; this implied that procedures that are routine in most other industries, such as labour inspections, are not carried out. Government officials interviewed expressed knowledge of multiple transgressions as far as employee rights were concerned, however, they also held the view that IT firms were relatively “low-risk”, when compared to other production or services units in the Indian economy which might pose physical dangers to the workers.

‘Though all the labour laws are applicable to the IT sector, there is very little inspection and direct enforcement. We know that there are many issues like sexual harassment, long working hours, no rotations, layoffs, delayed payments etcetera. But the problem is also because none of these employees are willing to file complaints and take it to a [legal] case. Because of this, we also cannot do anything. There is also the perception that most of the labour standards will be met in these companies. (GO01; Government official, Bengaluru)

Almost all the interviewed workers responded in the negative when asked if they were aware of any regulations that their employment was governed by. Workers generally believed that there were no regulations around most aspects of their work such as hours of work, work timings, layoffs and dismissals, minimum wages or the kind of benefits that they should be receiving. The only labour regulation on which there was some degree of awareness amongst the workers was regarding the main social security benefit system, the Provident Fund (PF) — provided as part of the Employees PF Act, 1952. This familiarity was due to the monthly deduction that shows up on their payslips. As far as the workers were concerned, the only rules that existed or governed their employment were the rules of the firm and those in their employment contract. Workers judged the quality of their working conditions by comparing it with those of their friends as the reference (interview with Worker 20, Senior Technical Lead, Large American IT firm). This general lack of awareness becomes critical because many of the grievances the workers articulated —

around working hours, leaves, notice periods, employment contracts, discrimination and their other demands — are all matters that are within the ambit of regulation.

Labour laws and regulations can act as constraints on firms and managements (Storey 1980, 1985a; Streeck 1997) and managements and employers are known to regularly complain about interference and demand deregulation. Managers who were interviewed were asked whether and how labour regulations were restrictive and how they would like to modify these regulations. Oddly, the interviewed managers felt that there were no regulatory restrictions (regarding labour) that they could think of or would want removed (interviews with Manager 04, Manager 05 and Manager 09). This was at odds with general employer demands for dilution and flexibility in labour laws and regulations. The HR managers expressed general satisfaction with the state of employment regulation and reiterated that there was almost no regulation for most aspects of IT work.

The government has gone out of the way to accommodate everybody and created a very good ambient atmosphere in the IT industry. The reason is that they don't really understand what this whole technology is about. That's a blessing actually [for companies]...It [the state] is also creating special vehicles, helping startup hubs...the government sees and has always seen the potential to create employment and so has always tried to facilitate this industry. (Manager 05, Vice President – Human Resources, Large Indian IT firm)

Rather than day to day issues of labour, the question of regulation evoked completely different issues than those dealt with in this study. Core issues of concern related to international protectionism and freedom of movement. Managers, perhaps surprisingly, required intervention from the government not in local labour regulation, but in international interventions due to the risks arising from trade and labour protectionism.

The government always has a role to play in this, whether they appear to be active or not. In a free market, I think the industries can work by themselves, working with businesses, building businesses, tapping into talent and all that. But when protectionism starts, I think that the policy-makers will have to come together and



put together some broad framework...There is a lot of protectionism starting in the US, Europe, Singapore and so on — which could be detrimental to the interests of Indian IT. (Manager 06, Chief Technology Officer, Large Indian IT firm)

If you take the overall industry, in the recent past, the primary challenge has been that of visas related to US. There is a lot of uncertainty. Although, the bill has not been passed in the US [legislature] yet, Indian IT companies are very concerned about it. Because most of the IT companies have their major clients in the US. So now, unless and until we get more US visas, it would be difficult for us to place our workers in the US. So, the plan is to hire more locals and then apply for less number visas for our Indian folks. That is one of the primary challenges we have been facing in the recent past. (Manager 09, Senior Associate Lead – HR, Large Indian IT firm)

On the other hand, some beleaguered HR managers under pressure from the constant attrition and mobility (both national and international) of the IT workers, viewed international restrictions as having caused a decline in the mobility of these workers and therefore as something that served to reduce the pressure on HR departments. However, this too serves to show the extent of the issue of reduced labour mobility.

When we talk about my company, it [visa restrictions] has been a boon. So, it is routine for people to turn down our offers as they would have received an ‘onsite’ [international] opportunity in another company, which is valued by people in this sector. But after such issues [around immigration] have cropped up, I had a couple of people contacting me again and asking if there were opportunities in our organisation. So for my company, and in my experience, this has been a boon. (Manager 04, HR Manager – Recruitment and Training, Large Indian IT firm)

In sum, we find that managers expressed the little concern as far as local labour regulations were concerned and worker interviews reflected a sense of uncertainty and confusion,

amidst a lack of awareness about the extent of regulation in the sector. Government officials were particularly insightful in clearing the air about the extent and nature of applicability of labour regulations in the IT industry in Bengaluru. But, this rather raised questions about why managements did not find local labour regulations to be impinging on their imperative for control. This is examined in greater detail in the following sub-sections.

#### **6.4.1**

##### **Institutional Avoidance and The Shaping of Labour Regulatory Frameworks**

The IT firms and managements' lack of complaints regarding the domestic regimes of labour regulation can be, to a large extent, explained by how the regulatory environment has been moulded over time to fit the needs of the industry. While all the relevant labour regulations are indeed applicable to the industry, a series of regulatory gaps, loopholes and exemptions have been granted by the state, both at the national and federal levels (Noronha and D'Cruz 2016; Penfold 2009). It is argued here that these constitute a deliberate institutional avoidance strategy deployed by the IT industry. The informal obfuscations about the applicability of labour laws to the sector contribute to further these strategies. Together, these contribute to an impression among workers — empirical evidence of which was laid out earlier in this section — about a lack of institutional support or options for redressal (Noronha and D'Cruz 2009: 44). Overall, these form a part of a broader 'institutional avoidance' strategy that attempt to formally and informally bypass existing rules and regulations around how labour is to be employed or can be deployed (see Doellgast et al. 2009; Morgan and Hauptmeier 2014). This section narrows down the discussion to the question of its implications for the labour process. In order to do so, the discussion uses the notion of managerial controls as a 'bridging concept' between these various aspects governing work (see Storey 1985b).

In the case of the Indian IT industry, institutional avoidance strategies can be seen to be operationalised through two main methods. The first is in the manner in which a relatively 'new' IT industry deliberately utilises certain employment and industrial classifications that minimise regulatory coverage. The Indian IT industry's early growth came about through a

restructuring and consolidation of traditional, scattered IT departments; much of this occurred over the 1990s. In order to register themselves as firms, Indian IT firms could only register under the Factories Act, 1948 or the SCE Act (various years for various States) and be governed by the system of labour regulations connected to these two laws. Here, what is important to note is that neither of these laws were conceptualised or designed keeping the working conditions of the IT industry in mind (because the industry emerged much later). Indian IT firms chose to register under the SCE Acts, which was relatively relaxed when compared to the more complex and detailed Factory Acts. It must be noted that the (K)SCE Act's (1961) preamble states that it is a law meant for "shops, restaurants, hotels, theatres and places of public amusement or entertainment" and the services workers employed therein. But its definitions also included "office work" and this gave Indian IT firms the legitimate option to register their organisations under the act. The generic working conditions that this law was formulated for engendered considerable flexibility in the IT industry's workplace rules and this is central to the manner in which managerial controls themselves were subsequently structured. Whether it was the rules around hours of work, leaves, holidays or dismissals and layoffs, managements now had significantly greater maneuverability while formulating their bureaucratic rules or 'laws of the workplace' (refer Edwards 1979: 21).

The second major institutional avoidance strategy adopted by the industry is through the direct introduction of specific exemptions and dilutions to the applicable labour laws and regulations. Indian IT firms enhance their flexibility to shape their own workplace rules by directly obtaining exemptions from several labour laws or from certain specific clauses. While the IT industry in Karnataka is wholly exempted from the IE(SO) Act, 1946 (Noronha and D'Cruz 2016), it also brought about specific amendments to the relatively weak (K)SCE Act, 1961 that exempted it from several regulations around working hours and days (Penfold 2009). In the case of the former, Karnataka's IT industry first obtained a wholesale exemption from the IE(SO) Act, 1946 in the year 1999 and has been receiving regular extensions since then for two and five-year periods at a time; this is reportedly managed by lobbying the federal-state government through the industry's employers' associations. That the exemption can be viewed as a direct result of the demands by employers is illustrated in the statement put out by them shortly after receiving a five year

exemption in 2014:

Previously standing order exemptions were extended for a period of 2 years till August 2011. Thereafter, NASSCOM with support from Industry members was in close discussion with the Government for an extension and also development of a sector specific model standing order for the IT sector.....NASSCOM members were at the forefront in discussions with the Government and Industry and representations on this issue. We are indeed delighted that our request for an extension has been considered. We are grateful to the Government of Karnataka for being sensitive to the needs of the Industry.

Source - NASSCOM (2014). *Information Technology Sector in Karnataka exempted from Standing Orders Act*, Available at -

[https://www.nasscom.in/sites/default/files/policy\\_update/IT%20Sector%20in%20Karnataka%20exempted%20from%20Standing%20Orders%20Act.pdf](https://www.nasscom.in/sites/default/files/policy_update/IT%20Sector%20in%20Karnataka%20exempted%20from%20Standing%20Orders%20Act.pdf). [last accessed March 27, 2018]

Exemptions from the IE(SO) Act, 1946 allows IT firms in Karnataka to avoid formally and publicly announcing their workplace rules. This also allows them to avoid a specific clause in the IE(SO) Act that requires such a document (regarding workplace rules) to be approved by “employees or a representative of employees”. While the legislation per se does not mention unions or union activity, industry representatives feared that this could be a provision that allows for or encourages trade union activity in the sector (interview with government official GO2)<sup>20</sup>.

In the case of the (K)SCE Act, 1961, the IT sector obtains industry-specific exemptions, regarding working hours and leaves as early as 2001 i.e. very early in the industry’s history. It must be admitted that some exemptions (regarding working hours) from the (K)SCE Act, 1961 were probably necessary for the industry’s functioning, affording firms the

---

<sup>20</sup> Also refer The Hindu (2012). “IT industry to lose blanket exemption from labour laws”. Available at - <https://www.thehindu.com/todays-paper/tp-national/tp-karnataka/it-industry-to-lose-blanket-exemption-from-labour-laws/article12545751.ece> [last accessed March 27, 2018]

flexibility to run their operations 24x7, throughout the year, including weekends; the global nature of the Indian IT industry, where it caters to clients located in various parts of the world, operating in different time zones, means that it requires flexibility in terms of working hours as well as days. The toll that such odd timings take on health is obvious and inadvertently, it was this prevalence of work requirements at widely varying hours that also meant that it was the female employees who often found it the most difficult to adjust to such timings.

It's quite difficult for women to work in this industry. This is because of the night-shifts and the stress and personal commitments. I just had a baby and returned to work after 5 months. I just worked two days in night-shift and now I'm already ill...In my previous project and in my current project, there were only one or two women. In my current project, I'm the only woman. (Worker 27, Principal System Administrator, Large US IT firm)

When we examine the industry's avoidance strategies, we find that industry and capital are also aided considerably in their demands by the fact that national and federal governments are under continuous pressure to show high rates of economic growth and job creation, this is especially true in developing or under-developed countries. Such pressures are evidenced in policies that create and facilitate the operation of semi-autonomous economic zones such as Special Economic Zones (SEZs) and Software Technology Parks of India (STPI). Most Indian IT firms are also located in such zones because they offer a wide range of benefits and exemptions with regard to multiple aspects of business such as taxes, infrastructure, environmental laws, and crucially, labour regulation (D'Costa 2011). Such zones are considered to be equivalent to 'public utilities' (Mazumdar, 2001), making it illegal to resort to any collective strike action as they are considered to be 'essential services' (Murayama and Yokota 2008). Workers in such zones do not possess regular employment rights as labour is governed by the SEZ commissioner and not by the labour commissioner as it is for regular workers (interview with G02, government official) It is then worth asking whether the reticence of IT industry workers towards organising — highlighted in many studies (refer Noronha and D'Cruz 2013; Sandhu 2006; Sarkar 2008; Taylor et al. 2008) — can be attributed to some intrinsic nature of the Indian IT worker but rather to the structure of labour regulations and institutions that workers in the industry find themselves in.

In other industries workers readily come to us with their disputes and there are established procedures for this; they also have unions that are politically connected or affiliated, so often politicians may also get involved on behalf of the workers. But, in the IT sector, there is foremost an awareness problem...most of them don't even know that there is some such thing as a Labour Commissioner whom they can approach. Often they go to the police before coming to us. It is not that there are no problems, or even violations, in the sector — we get complaints regarding arbitrary dismissal, sexual harassment or not providing transport to employees working late shifts. (G02, Government official)

Pressures for insitutional convergence can be observed in the pursuit of official exemptions from labour regulations and relaxations which was attributed largely to foreign IT MNCs, for whom labour violations potentially posed a larger threat to their reputation (interview with G01, Government official). The government official felt that Indian IT firms were not sophisticated enough to coherently argue for policy changes or suggest alternate labour regulation systems and obtain exemptions. Such processes give some evidence of the possible pressures that can be exerted by international firms and the mobility of capital — or the potential flight of capital — on local governments. But at the same time, the demands for exemptions also highlights the risks associated with operating in such locations for international firms — where violations of local regulations and working conditions can pose significant reputational risks. As a result, international firms appear to attempt to reduce the risks posed by local labour regulations as far as possible. The international nature of IT firms and their threat of capital mobility (and employment) ensures that they can exert significant influence over governments on aspects of regulation (see Harvey 2001). However, it is beyond the scope of this study to gain an understanding of how or what were the processes that led to the exemptions themselves because it would involve those who were part of the discussions related to policy formulation; but this remains an avenue for understanding how the politics of production and its institutions themselves can come to be shaped.

It is not just the spatial mobility of capital that exerts pressure on States. India's transition to a neoliberal/neoclassical, market-oriented and liberalised economic regime in the 1990s

contributes to a lack of motivation to regulate relatively new and emerging forms of work. Workers and trade-unionists who had tried to enlist state support for worker issues felt that the state was generally reluctant and there was very little assistance from the state to genuinely address workers' issues and demands.

When we raise an issue and approach the government, they always appear to have cold feet. They don't support them [the companies] openly, nor are they willing to take them on. Increasingly, we have lost hope that anything can be done by approaching the government. We can file a complaint at the Labour Commissioner's office, but nothing is going to be done. They will only give you endorsement...[I]n legal channels too, there is no support or encouragement. There's one guy who has been fighting a case in the labour court for more than 5 years and the case is still pending. (Acting-General Secretary, UNITES, Trade union)

The use of contract workers in all sectors is increasing, even in the government. So most of the BBMP [local municipal body] workers are contractors. They are filing cases, fighting against the government to take them on as full-time workers. Unless the government itself stops using such contract workers, how will the government act against these IT companies? (Worker 24, Senior Engineer, Large Indian IT firm)

Institutional and regulatory avoidance mechanisms are encouraged by significantly weakened enforcement that are at least in part influenced by the neoliberal approach adopted by the Indian state (Jaerling and Mehaut 2012; Shyam Sundar 2015). Federal-states are locked in a race to the bottom in order to attract firms when it comes to sectors such as IT, creating an environment where the states are unwilling to push for regulation lest they lose out on potential investments.

[F]rom the government's side there is not much political will to make this industry comply with labour laws. There are reasons for this. First, it is not top priority for us because we see that though a lot of issues exist in this sector, these employees are also well-off and often don't need our help. Second, the IT industry is

influential and has big government connections — they won't take our 'interference' lightly and they don't like having to deal with us. For the government it is an important industry because it creates jobs for graduates and is associated with Bangalore's international image. They don't want to displease them [industry], or they may just decide to set up the next facility in Chennai or Hyderabad! (G02, Government official)

The state can have several motivations to limit capital and employers. But workers in other sectors — where there is a longer history of collectivising and of affiliation to political organisations — may be in a better position to make the state work in their favour because even if there are various labour regulations and legislations, there can be little enforcement without inspection or the participation of the workers themselves who can influence its degree of implementation (Edwards 1979: 162). Overall, the avoidance and exemptions from labour regulations allow several aspects of the workplace and bureaucratic elements of the labour process to be modified and changed according to managerial requirements. This gives employers and managers an expanded scope to shape their workplace rules and managerial controls as they wish, which in turn affects the manner of work organisation and eventually the labour processes in these workplaces.

#### 6.4.2

#### **Bureaucratic Controls and their Relationship to Regulation**

Our earlier examination of the structure of labour regulations institutional avoidance strategies by managements in Indian IT firms reduces regulatory constraints allowing them to frame workplace rules as per their requirements. Workers voiced several aspects of their workplace that they would prefer to be brought under the ambit of regulation. A common theme that emerged pertained to the length of the work day and how working hours in IT firms ought to be regulated in some form. Section 5.3 had shown how increased work targets and workloads led to extended work hours and unpaid overtime. In fact, managers themselves admitted how work hours had been increasing over time and how work-related flexibilities that were previously viewed as benefits were now being used against workers.



Now as the pressure increases, automatically regulation has to come into the picture. Slowly, without even our knowledge, the Indian IT services industry has increased the working hours. Initially, when I joined, the norm was eight hours. Then they increased it to 8.5, then to 9 hours. This type of slow pilfering is happening right under our nose. Look at things that were earlier thought to be really useful to workers, such as flexibility, Work From Home options etc. Now that the pressure is increasing, these are all being used against the workers...all of these are slowly contributing to an extension of the workday — it's so bad that an average IT guy is probably working 10 to 11 hours per day. (Manager 08, Senior Consultant, Large American IT firm)

Incidentally, two completely unrelated interviewees cited working hours in France as their ideal form of standard work hours (interviews with Worker 12, Senior Associate Consultant, Large IT firm; Manager 04, HR Manager – Recruitment and Training, Large IT firm). They believed that in France, the workers only worked for eight hours a day and no more. This, according to them, was a practice the Indian IT industry needed to adopt. Another worker demanded a change in the working hours in such a way that it adhered to those of Indian government offices, which supposedly followed precise eight-hour workdays (interview with Worker 07, Technology Analyst, Large American IT firm).

In order to understand the problem of working hours, it is necessary to understand the local regulations that govern this aspect. The (K)SCE Act, 1961 (s.7) that governs working conditions in the IT industry stipulates that work should be carried out for no more than nine hours a day with at least one break of one hour after any five hours of work (and a maximum of a 48-hour work week). IT firms appear to utilise a conservative interpretation of these regulations by not including break as hours of work. Thus, a nine hour workday will become a ten hour shift including the breaks. Further, none of the interviewed IT workers were aware of these regulations and so demanded regulation under the belief that there were no regulations governing their work hours.

Upon consideration, there are indeed some genuine difficulties in regulating working hours in the Indian IT industry. The global nature of the provision of the industry's services means that work needed to be carried out round the clock and there was little that could be done from a regulatory standpoint about this. There are also pressures to finish projects and tasks within set deadlines, and some of the delays in completion could also owe to coordination problems as teams are located in geographies across time zones. To an extent, the extensification of work hours was attributed to the result of inter-firm competition, where sales teams make unrealistic promises in terms of the work that their firm would carry out in order to secure contracts.

Getting people to do the work is not really a challenge. We don't find it to as a major stumbling block. There would be of course, a few people, who don't do the work, but they are taken care of as per company policy. But there have been instances when the work itself is impossible. The sales team just promise too much...it's not that the work is technically complex. The problem is over-committing and then realising that we should not have promised so much at this rate. (Manager 01, Associate Service Delivery Manager, Large Indian IT firm)

Inter-firm competition amongst services suppliers generates pressures that are transferred downstream through to workplaces. The SLAs that are agreed upon and promised by sales teams of IT firms are then transmitted to offshored ITS managers and workers, who are left to deal with the pressures of delivering projects against these agreed deadlines at those price points. In section 5.6, we had observed how control over the knowledge of the work ensures that clients retain significant power over contract negotiations due to the vendor and locational independence that this provides them. This control results in intensified pressures on IT service firms every time contracts come up for renewal as they spur inter-supplier competition. Clients would naturally demand better products, services while at the same time demanding higher productivity every time they spend on such services. It must also be emphasised here that the pressures generated by these contracts and SLAs, and the stiff penalties contained therein, cause the primary focus of IT managements to shift to the completion of projects and timely delivery of services. In meeting these targets and expectations, managements effectively relegate concerns about adhering to regulations about working hours and workers' rights as secondary concerns.

For collective organisations and trade unions, women's working conditions was a major area that required regulatory intervention and this has also served as a rallying point around which workers' organisations mobilized significantly (interview with Representatives, FITE, Worker's Association). Nearly one third of the industry comprises of female workers (NASSCOM 2014). Some of the key aspects of working conditions in IT firms that are already tightly regulated in a gender-sensitive and industry-specific manner included issues relating to women's safety whilst working late at night, workplace sexual harassment guidelines and the provision of maternity benefits. For one worker's organisation, significant mobilisation was achieved in guaranteeing the provision of free transport facilities for women workers and countering industry attempts to externalise the transportation costs of women workers (interview with General Secretary, ITEC, worker's association). The organisation explained how the (K)SCE Act, 1961 places the responsibility for the safety and security of female employees, if they work after 8 p.m., on the employers. In adhering to this clause — and also due to the general lack of public safety for women in India and poor public transportation infrastructure — IT firms provide free transportation facilities to women in order to ensure that they reached their homes safely. In 2013, the employer's association NASSCOM tried to amend the (K)SCE Act, 1961 to extend the legal deadline from 8 p.m. to 10 p.m.. This move would have impacted all female workers who finished work between these times. The organisation's campaign, which was directed at the state and invoked public support including intervention from quasi-judicial bodies such as the Karnataka State Women's Commission, was able to block attempts to change the law (interview with General Secretary, ITEC, worker's association). In this instance, employers sought to reduce staff costs indirectly — here, that of transportation and security, but was thwarted by the worker's organisation. This contestation illustrates the implications of even minor dilution to existing regulations governing the work. The presence of protective legislations and regulations can then be viewed to genuinely affect bureaucratic controls that govern workplaces within an industry.

The presence of protective legislation and regulations are not sufficient to ensure favourable outcomes for the workers for whom those are intended. In fact, as some

managers explained, the presence of protective regulations could dissuade firms and managements from employing female workers.

When I look at the work teams in my office, I can see that the number of female employees is decreasing. I think managers don't want women on their teams because it is the manager's responsibility that they have to leave before 8 p.m. and reach home safely. This is an added pressure. I can't speak for the whole industry, but in my company the number of women is generally on the decline. The general approach of managers itself is negative. (Manager 03, Senior Project Manager, Medium Indian IT firm)

A recent amendments to the law governing maternity benefits — the Maternity Benefit Amendment Act 2017 — sought to increase paid maternity leave from 12 to 26 weeks for women working in registered, formal organisations. This was also highlighted as an example of a broadly beneficial regulation that could be counterproductive for women workers as it discouraged employers from hiring them.

While maternity leave is a benefit women workers enjoy, and one that has been expanded by the state recently, this [expansion] brings with it a certain level of disadvantage too. It will certainly increase the risk for an employer to hire females. When we hire we do a lot of filtering at the initial level; and we weigh several factors against each other... though this cannot be admitted publicly, this will be something we will have to consider and it is more than likely going to introduce a bias going forward. It is not like the company is going to tell us officially 'look for this' or 'don't look for this', but these things are understood and part of business rationale. (Manager 04, HR Manager – Recruitment and Training, Large Indian IT firm)

Managers thus based hiring decisions, at least for female workers, by strongly factoring in additional costs that arise due to the nature of regulations governing the work. In this, work organisation can be seen to be restricted by the nature of industry regulations, which they have little chance of modifying themselves. Such regulations can also be seen to clearly increase the costs of carrying out the same work because these costs do not appear

in the case of male workers, therefore resulting in additional profit/cost considerations.

Not all workers looked towards increased regulation or even collectivisation as a solution to the problems of the IT industry. Workers are known to internalise notions of professionalism (Noronha and D'Cruz 2009) in Indian call centres and similarly IT workers, by virtue of being “educated, skilled and qualified professionals” argued that they could retain some degree of co-determination in their conditions of work.

I think, because we are engineers, engaged in engineering work with high skill-sets....I don't think there should be much regulation...so that more companies come and more jobs are there, and there is healthy competition in the market. It is different in the BPO [call centres] sector where there is a lot of pressure on workers, and where some regulation of employment is perhaps needed. For us, it [labour regulation] can be relaxed. IT workers should be able to take care of themselves. (Worker 19, Team Lead – Integration, Large American IT firm)

This highlights how different sub-segments of the Indian IT industry could have completely different dynamics and perhaps issues of state regulation could be sensitive to the unique dynamics of these segments.

Overall, this section (section 6.4) and its sub-sections have highlighted how labour regulations and workplace managerial controls may interact with each other. For this, we explored their inter-connections by focusing on bureaucratic controls and the relationships with the relevant labour regulations. The selection and type of management controls that are found in workplaces cannot be explained in isolation from the regulations that govern the work. From the perspective of managements, the extent of labour laws and regulations is the boundary where their control over the workplace ends. As a result, managements were found to attempt to avoid the constraints placed on them by regulations by utilising various ‘institutional avoidance’ strategies (section 6.4.1) in order to expand the set of available control strategies. Section 6.4.2 showed how regulations affect management decisions and how workplace bureaucratic controls are closely explained by the structure of regulations.

## 6.5

### Discussion and Analysis

All the ITS workers who were interviewed as part of this study were found to be in permanent, regular, formal employment and this stands in stark contrast to the informal nature of much of the broader Indian economy. But, it has been noted that there are a mix of employment contracts being utilised in the IT industry. IT workers employed through agencies and intermediaries — as well as other peripheral, support contract workers — were all present in Indian IT firms and found to be paid significantly lesser salaries, have precarious employment contracts and receive fewer benefits when compared to regular IT workers. This segmentation within the workforce and use of contract IT workers in core work peripheralises portions of the core workforce and also diffuses the boundaries between IT workers and other support functions. At the same time, contract IT work also displays a degree of diversity in that it could also include highly skilled experts who command high salaries and demand certain work conditions, and whose terms of work do not resemble that of regular contract workers in any way.

The prevalence of elaborate evaluation procedures in ITS work indicates the use of highly evolved bureaucratic control mechanisms (Edwards 1979: 112). However, workers largely perceive these evaluation systems as objective, in the sense that they are a set of mutually agreed discrete, quantified work-related targets against which their work would be evaluated at the end of the year. Given that evaluations are carried out against a range of technical targets based on pace and quantity, such bureaucratic controls are seen to be blended with technical controls (Callaghan and Thompson 2001). Evaluations and appraisals also serve as instances where technical work targets are inflated thus automatically intensifying the mental work, and this also results in a highly individualised/personalised set of work targets. These also highlight how managers utilise methods of simple and direct control in the management of knowledge intensive work which provides them with the space to exercise personal discretion and subjective decision-making. For the workers, the manager's powers manifest most clearly in the case of the highest performance scores and internal promotions; workers' perception of this

managerial subjectivity in an otherwise rules-bound process emerges as a point of conflict between managers and workers and this constitutes a source for major grievances. Formal avenues for the redressal of grievances are found to be standard industry practice, but this is only due to this being statutorily required in exchange for other legislative exemptions. Regarding issues concerning managerial bias — such as over pay, promotions or other work conditions — such mechanisms were seen as dead end or unsatisfactory by the workers. As a result, rather than voicing their concerns, the principal means through which IT workers expressed dissatisfaction with the perceived shortcomings in their employment was by exercising their ‘mobility power’ and moving out of the firm altogether (*cf.* Smith 2006). This manifests itself in the high attrition levels characteristic of the Indian IT industry and corroborates the argument that the mobility of workers is important evidence of dissatisfaction and resistance by them (refer Bain and Taylor 2000; Mulholland 2002).

Smith (2006, 2010) argues that this ability of workers — to move between organisations within capitalist economies — constitutes a significant power that they possess and a major indeterminacy that managements have to deal with. Management strategies to ameliorate the impacts of this worker mobility are diverse. In the previous chapter, it was shown how managements coerce departing workers to codify or transfer their tacit knowledge of the work. The managerial drive to capture knowledge of the work (Braverman 1999: 77) is then not just in order to fragment and intensify production but is also a way for minimising their dependence on these ‘mobile’ workers and minimising any potential interruptions in the provision of services. The findings in this chapter contribute to this by showing how, in addition to such strategies, managements can also seek to reduce the mobility of labour through oligopolistic labour market practices through industry associations as well as by adopting tactics that can discipline recalcitrant workers even after these workers have left the firm. Here, the potential for ‘digital blacklisting’ is especially noted for the influence and disciplinary power that it can exert over workers well after they have left the boundary of a firm. While fears of such forms of blacklisting are perhaps overblown, private databases and digital blacklists are identified as being potentially very powerful as modern, digitally-enabled disciplining devices for ITS workers.

The main strategy deployed by ITS managers to diffuse the negative effects of the 'mobility power' of workers is by enforcing a three-month notice period; this is highlighted because it exceeds the legally stipulated notice period, which is only of one month. This is attributed to the imperfect knowledge that such IT firms and managements have about the conception and execution of the work (discussed earlier in section 5.6) rather than the lack of replacement workers who are available in plenty in a labour surplus economy such as India's. Workers serve the notice period under conditions that are evidently coercive (such as the threat of denial of experience or relieving letters, or even final wage settlements), or worse, using direct threats of providing negative recommendations in future background verification processes. Such strategies clearly coerce workers into fulfilling employer demands such as transferring their tacit knowledge to replacements or codifying it in the firm's knowledge databases. Workers reported discontent with these methods, particularly so because the same firms when hiring were often unwilling to wait for three months after offering a job and wanted new hires to join immediately. Significantly, the same firms also did not follow the same three-month notice period during dismissals or lay-offs nor compensate the workers in such instances. This was, understandably, perceived by workers as duplicitous. As a result, the three-month notice period was not perceived as a source of security, but rather, it was perceived as an impediment to the worker's mobility.

The ability to dismiss a worker or end the employment relationship forms one of the most important ways by which the managerial power to discipline is exercised (Jacoby 1998; Littler 1990). Dismissal and separation is traditionally noted as a major terrain for worker grievances with little possibility for remedy within the firm itself (Edwards 1979: 63). Countries typically have strong protective measures and constrain managerial powers around dismissal, but even those that do permit employer practices of dismissals or layoffs have usually developed supplementary systems of social protection for the workers (Emmenegger 2014). This is not the case in India where such social security benefits are almost non-existent (Papola and Pais 2007). As a result, ITS workers function under the permanent risk of job loss and related insecurities, with little by way of social security or social protection available.



The formal nature of employment in the Indian IT industry implies that most employment is covered by formal work-related rules and regulations. However, this chapter has presented evidence on how IT firms can both avoid and dilute labour regulation at the regulatory level in order to avoid its constraints. Thus, employers' strategies (especially through industry bodies and pressure groups, here NASSCOM) for reducing (labour) costs and creating surpluses can also include institutional changes, such as through the dilution of existing labour regulations. Based on this, it is also argued that the degree of control that managements have over creating workplace rules, especially bureaucratic ones, are predicated, to an extent, upon the extent and structure of labour laws and regulations. It is to avoid such constraints that employers continuously seek to try and achieve greater flexibilities over working conditions so that they can modify, dilute and avoid existing regulations and create 'despotic' workplaces as per their own requirements. Both formal and informal employer strategies attempt to avoid or obfuscate the extent of such regulations (Noronha and D'Cruz 2009, 2016) and this serves to mitigate worker opposition.

At the highest level, strategies of institutional avoidance and regulatory dilution can be clearly observed in the exemptions sought by employers' associations to labour legislations such as the (K)SCE Act, 1961 and the IE(SO) Act, 1946. In pursuing and obtaining these respective exemptions, employers reveal its stipulations to be interfering in their ability to formulate or reformulate workplace rules. The latter exemption — from the IE(SO) Act, 1946 — exempts firms from even the basic act of formalising and fixing their workplace rules, thus allowing firms to operate with rules, but ones that did not have to be declared publicly to the workers or to the state increasing the potential to modify them anytime. Thus, the IT industry's attempts to secure exemptions to such laws reveals how labour regulations indeed have the power to regulate/curtail the ability of IT firms and managements to create customised workplace rules. This forms an important, albeit relatively less-explored, constraint on management and on their ability to create their workplace controls and therefore labour processes.

Workplace rules represent a codification of the status of the negotiated powers of the workers and managements (Edwards 1990: 132). Similarly, the macro regulation of labour,

much like contestations around workplace controls, may be viewed in terms of a capital-labour dialectic (Poulantzas 1978, cited in Jessop 1990). State legislations can have direct implications on the shape of bureaucratic workplace rules and managerial controls, and this can be viewed, at least in some part, to be an extension of the workplace conflicts that are engendered as part of the extraction of labour from the labour power of workers. The complexity of the causality behind the creation and enforcement of beneficial labour legislations serve to reinforce workers' bargaining positions, but, at the same time, is also often a product of the bargaining power of the workers (also see Williams et al. 2015).

ITS workers often address their grievances by being mobile, however, given the recent economic slowdown and tightening of labour markets, workers are increasingly resorting to collective action and demanding greater regulation of employer discretion — through formal ones such as through workers' associations and trade unions and less formal ones, such as online petitions — to regulate firm behavior in matters ranging from notice periods to ensuring fair practices of dismissals/layoffs. For the purposes of this study, such actions underline and reinforce two crucial points: firstly, in many respects, employer and managerial control strategies that operate across an industry are often best countered by utilising the powers of the state to legislate, regulate and limit such types of managerial strategies (also refer Edwards 1979: 161; Storey 1980: 75). Secondly, IT workers also perceive and experience the oligopolistic structure of IT services markets and the tacit understanding/co-operation between firms. As a result, they recognise their own weakened position in bargaining with the more organised forces of employers. Faced with such a formidable array of factors, it is understandable that they resort to the state to restrain employers (Edwards 1979: 46-47). Improvements in working conditions are then sought not through bargaining with the employers, but through the State, which is seen to possess the ability to regulate employers.

## 6.6

### Conclusion

This chapter conducted a detailed examination of how bureaucratic controls are

operationalised within ITS work. This objective was guided by Edwards' (1979) analytical framework parsing various bureaucratic elements of managerial controls; involving systems of monitoring and evaluation, as well as systems of rewards and punishment. At the outset, ITS workers were found to be in regular and formal employment in order to emphasise how they are covered by bureaucratic regulations and procedures as well as local labour regulations. As part of these bureaucratic systems, IT firms were found to have evolved elaborate evaluation procedures. Not only are these evaluations designed in such a manner that workers participated in their own target-escalation and work-intensification, but it's mechanisms also play a significant role in individualising and atomising the effort bargain amongst the ITS workers; this prevents them from finding common ground over the work itself. This underlines the importance of bureaucratic control elements in fragmenting the work effort and also how they are often closely related to simple, direct controls as well as the technical aspects of work.

The chapter makes some important connections between bureaucratic workplace rules and labour regulations, and regulations are shown to affect labour processes as well. The extent of labour laws and regulations can be viewed as the boundary where managerial control over the workplace and firm rules ended. It is entirely possible that this is somewhat unique to countries such as India where workers have a stronger tradition of depending on umbrella legislative protections rather than collective bargaining. In order to bypass the constraints raised by such labour regulations, employers adopt a range of avoidance strategies. Despite this, whether marked by its presence or absence, state legislations are found to have direct implications for bureaucratic managerial controls and, to a lesser extent, on technical controls. The connections between labour regulations and bureaucratic rules become particularly clear in aspects related to dismissals and separation. The power to dismiss a worker from employment forms a significant power possessed by managements, but this has been reduced over time through a combination of strong regulations around unjust dismissals and unemployment protections. However, in the case of the Indian IT industry, the lack of the existence of such regulations and protections means that managements can still wield significant power in such decisions. The resulting imbalance in power relations between the workers and managers around issues of dismissals and separation constitutes a major sources of discontent for the ITS workers.

## Chapter Seven

### Conclusion

This final chapter synthesises the main empirical and theoretical contributions of this study. This is presented along with an introspection on its implications and also explores some possible avenues for future research and theorisation. Broadly speaking, the objective of this study was to understand the nature of managerial control over knowledge-intensive work and probe how labour processes are transformed and modified to assist production and profit generation. In order to do this, the study carried out a detailed examination of labour processes and work organisation in ITS work within the IT industry in India. This was analytically approached through the notion of management control. The study advanced these conceptualisations further by examining how managerial control may itself be structured through the political apparatuses of production, labour-specific regulation in particular. The primary research question that guided this study was: *How is managerial control extended over knowledge intensive work in the Indian IT Services industry?*

Using this primary research question as a guide, the study utilised Edwards' (1979) notions of 'technical' and 'bureaucratic' controls, which made it possible to systematically analyse a wide range of managerial control strategies. Here, the labour process, or the process of the transformation of labour power into *actual* labour at the point of production was privileged as the focus of empirical scrutiny. Changes to the labour process and workers responses were examined through field research involving interviews with ITS workers, IT managers, trade unions and government officials. The study was located in Bengaluru (formerly known as Bangalore) in India and the fact that much of this location's ITS work is outsourced and offshored presented added complexities owing to the lengthening of the management chain which resulted in extended managerial hierarchies and additional control mechanisms. The study tried to incorporate a few of these aspects, but its findings and analysis are restricted by the practical and geographical limitations of the study. The study also sought to identify connections between labour processes and labour-specific regulations, and how these may impact or structure managerial controls. The findings of the study were presented and analysed in the previous two chapters (chapters 5 and 6).

This chapter is organised in the following manner. Section 7.1 summarises, synthesises and discusses some of the key insights and findings that emerged out of the fieldwork. In section 7.2, these findings are made to converse with extant literature; drawing these wider connections help elucidate how this thesis' findings contribute to a broader theoretical understanding of labour processes and managerial controls. The final section, 7.3, dwells on some of the limitations of the study and provides some directions for future research that seek to build on these ideas or to overcome said limitations.

## 7.1

### **Synthesis and Discussion of Research Findings**

This study builds an understanding of how work and labour processes are controlled in knowledge-intensive services work within capitalist firms. In doing so, it adds to the relatively sparse extant literature on the labour processes and on management control strategies in ITS work (refer Trusson and Woods 2017: 544). The study also contributes to a body of literature that critically appraises some of the optimistic arguments about transitions to services work (see Nolan and Wood 2003; Thompson and Smith 2010; Warhurst and Thompson 2006; Warhurst, Thompson and Nickson, 2008). However, this study's basis is not predicated on highlighting the low-skilled or deskilled nature of many emerging forms of services work (for example Leidner 1993; Taylor and Bain 1999). Rather, this study has shown how forms of knowledge-intensive 'mental' work too are subjected to the same principles and strategies of managerial controls that were applied to manufacturing work.

At the outset, ITS workers are largely in formal, permanent employment; however, IT firms do utilise a variety of employment contracts and managers attested to utilising a mix of contracts whilst hiring workers (refer section 5.1). The working conditions of IT workers hired on non-regular terms of employment was substantially inferior to that of the regular, permanent workers — both in terms of wages, benefits and their general treatment — despite them doing largely identical work. However, it is important to note the difficulty in making any generalisations about the condition of contract IT workers because the IT industry also often utilised the services of highly skilled, highly paid consultants on

short-term project-based contracts (refer section 6.1). This also indicates how ITS work and its occupations are characterised by a relatively higher degree of heterogeneity: in the kind of work that is done, the types of skills required to do them and the complexity of its work and tasks (Flecker and Meil 2010; Trusson and Woods 2017). Managements handle this heterogeneity by fragmenting and standardising the various types of work and rating each of these fragments in terms of complexity and time. For the actual execution, the work was usually organised using ticket-based or project-based systems (or a combination of both). This results in both complex tasks and large projects being fragmented into small, discrete pieces and standardised. These fragments are then distributed amongst a 'team' of workers who would however work individually, but simultaneously, to complete the task allotted to them within the stipulated time limits (see section 5.1). The IT industry in India has been noted for an exaggerated drive for standardisation in its workflows and work processes (Feuerstein 2013), though, this was largely due to the Indian IT industry's need to gain the confidence of international clients who wanted to offshore work to India (Balakrishnan 2006; Hirschheim et al. 2004). However, as a direct result of this, a large number of Indian IT firms standardised their work processes as far as possible and doing so also enabled these firms to secure international certifications that attested to the standardisation of work processes and workflows, and thus gain the confidence of clients to offshore.

The pace of work, i.e. the speed with which this highly fragmented and standardised work is to be completed has two distinct elements: the pace of allocation and the pace of execution. In the former, it is shown that the manner in which work is allocated to ITS workers has implications for the degree of autonomy that workers experience. The autonomy that ITS workers experienced in the selection of tasks and the time allowed for their selection contrasted with what is known about the kind of monitoring and rigidity inherent to the relentless ACD systems seen in call centres, which is a key segment of the IT industry. Because workers could take their time to select the next task that they would like to work on, it was the pace at which the work needed to be *executed* that was found to be more integral to its control. Each task or discrete unit of work was associated with a pre-determined time-frame and these time-frames had to be strictly adhered to without which severe penalty clauses would be invoked on the IT services firm. As a result, the ITS workers were under constant pressure to complete each of the varied 'mental' tasks within

the standard time limits proscribed for the task. The decision regarding the pace at which the work can be carried out is thus dissociated from the worker. Whether and if they can work at that pace or not is no longer a decision in the hands of workers but rather in the hands of managements. Whether the workers would be able to cope with the pace or not is then relegated as a secondary issue, with the lack of being able to keep up with the designated pace often conveniently characterised as a workers' 'soldiering' (see also Braverman 1999: 68).

The focus of managements on completing work according to certain 'objective' timeframes pressures ITS workers to appear and feel incompetent if, and when, they are unable to meet those timelines; this nudges them towards *voluntarily* working additional hours — doing what is basically unpaid overtime work — in order to be able to complete their work within the requisite timelines. Barrett (2004) highlights how time-based managerial control strategies in IT work echo of older, direct and simple forms of control. Such controls can be seen clearly in the case of small firms where managements directly control most aspects of both the labour process and employment (see section 5.3). In such firms, there are few bureaucratic procedures and HR plays a compliance related role primarily. In larger firms, though managerial control appears obfuscated to workers, we observe how the management's 'structural' hand can be observed in the manner degrees of complexity are allocated to the work — and significantly, in framing both of these as apparently objective standards. By arriving at the decisions regarding speed of work (at which the work is to be completed) and integrating them into the rules of the project contracts, managements effectively appropriate decisions regarding the execution of the work very early into the work contract. Thus, decisions of the pace with which the work can be carried out are dissociated from the workers long before they reach the worker (see sections 5.1 and 5.2).

Managements attempt to increase the productivity of workers using simple and direct control mechanisms of inflating work targets for the workers. This was found to be done with the express consent of ITS workers, usually secured during their annual reviews and appraisals (refer sections 5.2 and 6.2). Workers reported dissatisfaction with the continually increasing workloads, however, they rationalised it as logical that with greater work

experience, and with every passing year, they are expected to make gains in ‘mental dexterity’ and take on more work. The highly individualised and personalised allocation of work targets is a key responsibility of managers whereby they exert direct control over the workers, and it is argued that this plays an important role in fragmenting any commonalities or grievances amongst the workers over the effort bargain and wages (see section 6.2). The combination of managerial individualisation, technical work targets and bureaucratic evaluation procedures also serves to highlight how such controls may be integrated and are often indistinguishable (refer Callaghan and Thompson 2001; Thompson 1989). Overall, we find that managerial control over ITS work appears to be primarily exerted through the manipulation of targets and outputs leading to an ever increasing intensification of labour required to complete the work.

This continuous escalation of work targets serves to highlight a key oversight of TSM-based strategies from an industrial engineering perspective. Along with its tendency to reduce human workers to a mechanistic component of production, it also did not grasp the nature of capitalist production with its inherent drive to continually increase productivity *every year* in order to obtain surpluses. Thus, scientific management techniques are not something that is meant to be implemented once, as imagined by Taylor (1914), and obtain the highest possible efficiencies and output. Rather, it transforms into a technique that has to be repeated again and again in order to cater to the profit motive inherent to capitalism. Taylorist and other industrial engineering prescriptions of SM largely do not foresee that even after the highest possible work rate and efficiency has been achieved and profits made out of it, employers and managements would still need to show more profits the following year and this would provide the imperative to repeat the same process again and intensify the work further. This intrinsic profit motive built into the capitalist organisation of production results therefore in a continuous escalation in work rates and targets, often going far above what is physically or, as in this study’s case ‘mentally’, possible for a majority of the workers. That workers were often doing unpaid overtime in order to complete their ever expanding work quotas — thus participating voluntarily in the extensification of their work — explains, to an extent, why workers increasingly sought labour regulations particularly on the issue of hours of work (refer sections 5.2 and 5.3 and 6.4).



The IT manager's tendency to constantly increase workloads to increase productivity in ITS work raises more questions than answers about the fundamental nature of 'mental' work itself, especially in terms of its *limits*; and of how much and how fast mental work can be carried out by ordinary workers. While there are genuine limits to the amount of physical effort and dexterity that can be continuously exerted by human workers and this is something that is readily visible to external observers (see also Braverman 1999: 67; Taylor 1914) — such as through time and motion studies — such limits are *invisible* in the case of mental work. Therefore, unlike physical work where a worker's maximum abilities can be viewed and the body's limits are fairly clear, 'mental' labour offers little by way of clarity or tangibility in terms of limits to managers or other external observers. Here, mental work is distinguished from manual work because, for all practical purposes, its speed is potentially infinite. Therefore, it follows that the indeterminacy of 'mental' labour is also potentially infinite. A continuous expansion of workloads — as observed in ITS work — may go on without managements noticing or discerning when its limits have been breached, thus leading to the kind of unchecked increases in work pressure that workers reported.

The rather elementary and direct managerial focus on output and targets has several important implications on the organisation of work and indirectly affects workers' time as well. Though ITS workers are afforded a degree of autonomy in their work and monitoring or surveillance of their work was minimal (refer section 5.4), their autonomy operates only in a restricted sense, in what Barrett (2004: 82-3) terms "time-constrained autonomy", where there are strict guidelines for the timelines within which the work is to be completed but not on the manner in which it is to be completed. Workers also generally disapproved of attempts to monitor their work, surveillance or other attempts at micro-management; often, such strategies were formally, and in some cases, collectively resisted (refer section 5.4).

The focus on output and targets in ITS work leads to the creation of very specific and detailed procedures for evaluating workers against these targets. A high degree of individualisation and differentiation is central to the target-setting process (see section 6.2), thus resulting in each ITS worker effectively working towards completely different sets of

targets. Bureaucratic evaluation systems are thus combined with variegated technical targets (observed earlier in section 5.2 and 5.3) to defuse the prospect of any collective grievance formation over the effort bargain. Workers are then *individually* evaluated by the managers and these evaluations form the basis for rewarding or disciplining them. Even though workers identified these processes as fairly objective, the according of top grades and rewards was viewed to be subjective and mired in managerial bias; this perceived subjective element in evaluation procedures was a widely-articulated worker grievance. Legal regulations have stipulated IT firms to create formal grievance redressal mechanisms which were present in the firms, however, workers reported these to be largely dysfunctional or ineffective (see section 6.2).

It has been noted how the operationalisation of TSM principles such as fragmentation and standardisation of the labour process often involves a significant appropriation of knowledge about the work by managements (Braverman 1999: 77). The contestations that can arise over managerial attempts to control knowledge perhaps are more central to management control when the work itself is knowledge-intensive. In the case of ITS work in India, gaining such control over the work's knowledge is complicated by its overall organisation, which, to a large extent, involves an element of internationalisation. Typically, any such offshored and outsourced work undergoes extensive modularisation and standardisation *before* its international relocation (Flecker and Meil 2010; Meil 2012). Subsequently, local managements in IT services firms continue to attempt to appropriate elements of knowledge of the work and its output *after* offshoring has taken place (see section 5.6). However, management chains are now extended to comprise of both the immediate employer as well as lead clients. Both the managements are involved in taking decisions related to the pace at which the work is to be executed through service agreements, such as SLAs, thus taking away the workers' ability to decide on such matters much before it reaches the worker. This arrangement also leads to complications over the control of knowledge. Lead client organisations usually attempt to retain most of the knowledge of the work in order to avoid dependencies, and maintain a degree of vendor and locational independence (refer also Rubery and Earshaw 2005). In doing so, they also attempt to capture any new knowledge that was produced by the workers employed by the services firms. Thus, not only was knowledge separated from the ITS workers through its codification, but it was also separated from the offshore IT firm employing those workers

thus ensuring a ‘double separation’ of knowledge. Such attempts at knowledge capture are necessarily incomplete and therefore both managements retain an imperfect understanding of the work. This appears to then contribute, to some extent, to the rather elementary nature of direct and simple management strategies of target inflation, autonomy and job enlargement in offshored ITS work.

The IT industry is not immune and has also been affected by the rapid advances to computing and digital technologies over the past decades. The managerial drive to increase productivity was found to result in the introduction of several emerging computing technologies — such as automation, machine learning, artificial intelligence and cloud computing. Such technologies affected ITS work in various ways notably in the intensification of work as a result of managerial over-estimation of the benefits of such technologies (see section 5.5 for examples). In many ways, automation of ITS work or small segments of such work reflects the culmination of processes of fragmentation and standardisation of the work. In the case of services, high level programming languages now allow for the construction of logical machines or programs (and even evolutionary machines, such as those using AI) that can carry out complex work tasks and operations. And this means that automation and robotisation are no longer issues restricted to manufacturing work. However, automation has to chart uniquely complicated terrains in knowledge work. Managements, in their search for productivity gains through such technologies, often simultaneously engage in workforce reduction along with the introduction of new technologies. In a substantial number of cases, managements were found to over-estimate the gains made by these technologies. The result of this was that the workforce reduction was often far greater than the gains achieved through the introduction of automation. As a result, the two simultaneous processes — of automation and workforce reduction — often led to increased pressures and intensification of work on the remaining workers (see section 5.5.1). Thus, even though portions of the work were automated, it did not ease the workload for the ITS workers whose work had seen such changes. Faced with ever-expanding quotas of work, ITS workers were found to have negative job-to-home spillovers and often voluntarily undertaking unpaid overtime work. This is especially true of smaller IT firms where ITS workers are often the only personnel responsible for certain devices, as a result of which, they are often requested to put in additional work or never take leaves (see section 5.3). Rather interestingly, some workers

(in both small and large firms) resorted to utilising technologies in order to adapt to increased workload pressures by clandestinely automating their work (see section 5.5.2). Technology, in such cases, presents itself as a potential tool that workers could subversively utilise for their own ends and use to decrease the pressures that they face at work. This, however, it must be emphasised, is only observed in a minority of cases as a majority of workers function under increasing workloads/targets often leading to job-to-home spillovers and extensification of their working hours.

In contrast to much of the wider Indian economy, the formal nature of work and employment in the IT industry meant that it is governed by both workplace/firm rules as well as broader labour laws and legislations. Workplace rules or the firm's rules — such as working hours, leaves, holidays, social security benefits etcetera — are 'structured' by labour regulations and legislations that comprise the mode of production. It is well known that these can act as constraints on managements and employers. But the study finds that employers and managements to avoid regulatory structures or move firms outside its purview using various strategies (refer section 6.4.1). The aspects where regulations and management control over the labour process intersect most clearly were found in issues concerning separations (whether initiated by workers or managements). In the absence of effective grievance redressal mechanisms within the firm, workers sought to address their workplace problems by deploying their 'mobility power' and moving out of the firm altogether (refer section 6.3). Issues of separation — both resignations and dismissals — emerge as sites of major contestation between ITS workers and management, as managements use a variety of formal and informal means to curtail this 'mobility power' of the workers. Formal bureaucratic strategies to curb the effects of the mobility of workers involved using long notice periods and continuous codification of the worker's knowledge. Related informal practices included coercing the worker's to do the management's bidding by threatening to withhold or deny letters of work experience, and even threats of negative recommendations to future employers: strategies which appear to discipline workers even after they have left the boundary of their firm (refer section 6.3). To this end, the utilisation of 'digital blacklists' and biometric databases highlight how oligopolistic firms may utilise modern technologies to discipline workers and clamp down on their mobility power at the level of the nation or industry. That workers, as a result, have to often acquiesce to the management's terms and conditions, contributed to their resentment

resulting in a key demand, of a reduction in the three-month notice-period. The workers' propensity to not view the three-month notice period as a source of security owed largely to the fact that such rules regarding separation were often not followed when the separation is initiated by the firm i.e. when the workers were dismissed (see section 6.3.2).

Several aspects of separations are closely regulated by the state through the stipulation of compulsory notice-periods, procedural requirements to prevent arbitrary dismissals and complementary social security provisions. In the case of the Indian IT industry, the rules, or their lack of, around unfair dismissals and coercive disciplining serve to bring the workers together, especially around issues of job security, leading to the formation of several workers' associations and unions between 2015 and 2017, a period when pressures on profit margins in the IT sector appeared to have intensified. Significantly, almost all collective appeals by ITS workers — whether through online petitions and, more formally, through trade union activities or protests — were directed to the state and do not expressly look to negotiate with employers and firms. Workers, whether individual or collective, do not appear to believe that they can exert influence over the actions of firms and rather look to the government to exert pressure. This brought into focus the issue of labour regulation and institutions, and how they interact with managerial controls (here, around the elements of discipline and punishments). The detailed connections between regulations and managerial controls (refer section 6.4), such as those around dismissals or grievance redressal, serve to highlight how 'structural controls themselves are structured' by the prevailing apparatuses of production. Conflict over workplace rules — hitherto between workers and managements — then moves to the arena of the state, especially in countries where workers have little local bargaining power, thus generating different approaches to struggles. Workers genuinely possess the ability to alter labour processes and one route to do this is to modify managerial controls through the state which can "...[alter] the rules under which bureaucratic control operates" (Edwards 1979: 162). As Edwards (1979: 202) notes, the resulting contestations between labour and capital over state policy then becomes both more critical and more uncertain, and even though democratic states nominally claim democratic ideals, they often end up in situations that are in opposition to the interests of labour, thus "...in effect continuing to support the form while abandoning the content of modern democratic government".

## 7.2

### Some Theoretical and Conceptual Contributions

This study was based on an analytical framework that foregrounded the labour process and sought to examine the various means of its control by capitalist employers and managements. This section discusses some of the key insights that were gained from the study, its theoretical contributions and also some possible ways to approach and advance the current understanding of the inter-relationships between labour processes and institutions that regulate work.

A majority of the ITS work carried out in India is offshored and outsourced. As a result, such work is carried out under extended layers of management and controls (Flecker et al. 2013; Marchington et al. 2005). This gives rise to various conflicts over the control of the work between the client managements and the ITS service firm managements (Rubery and Earnshaw 2005). Clients attempt to reduce their dependencies on specific vendors and try to spur inter-firm competition in order to reduce costs, but, IT service-provider firms attempt to strengthen the very same dependencies in order to stabilise and increase their own revenues and profits (Boes and Kampf 2007; Flecker and Meil 2010; Marchington et al. 2005). In studies that focus on offshored and outsourced IT work, it was understood that SLA-based contracts (Bain et al. 2002; Rubery et al. 2005; Taylor 2010) or forms of identity regulation (Noronha and D'Cruz 2009; Upadhy 2009) were the primary means by which lead clients exercised control over the offshored work. This study advances the above observations in two ways. *First*, it uncovers and emphasises the role and significance of knowledge and its control within such offshored and outsourced relationships when governing fragmented knowledge-intensive work (also see Valenduc et al. 2008; Ramioul and Vroom 2009). Further, any new knowledge produced is twice separated due to the extended management layers: not only is knowledge of the work codified and separated from the worker, but it is also separated from the IT service-provider firm who is the immediate employer of the ITS worker. This leads us to a *second* point, about the consequence of such work organisations and relationships on work and skills. Early capitalist production viewed the subcontracting of work as preventing the ability of capitalist employers to deskill the work or deploy direct controls over the workers (see

Braverman 1974; Clawson 1980; Littler 1982). With the current rise of outsourcing, workers are found to work in multi-employer configurations and additional managerial hierarchies (Grimshaw et al. 2005), we observe how control over knowledge is mostly exercised by client organisations while local services firms/managements resort to strategies of direct or simple forms of control (see section 5.6). Contradictions and contestations over dependencies between the clients and services firms then also spill over into who controls the work and knowledge of the work. The result is that neither the immediate ITS vendor firms nor the lead client organisations possess a complete picture of the labour process. Thus, such multi-organisational relationships can simultaneously also decrease the possibility of developing a comprehensive understanding of the work and therefore a separation of its conception and execution.

Managements in IT firms have sought to reduce labour costs of ITS work through full or partial automation of work (section 7.1 and section 5.5.1). This study's finding that workers also automate portions of their work of their own accord in order to deal with increasing workloads has implications for how the phenomena of automation and technology can be viewed and approached. The introduction of automation-related technologies are visualised in two forms. First, as worker-initiated, bottom-up automation or '*automation from below*'. Or secondly, as top-down, management-driven '*automation from above*', commonly initiated by employers and managements to reduce labour costs and improve productivity. The latter is the dominant conceptualisation of automation (and its impact) especially in narratives of technological determinism and how technologies are deployed. Approaches to automation have viewed it singularly, as an extension of techniques deployed by managements, leading to reduced autonomy and skills of the workers (Braverman 1999; Smith 2016; Thompson 1989). However, technologies such as automation can also be utilised in order to increase the autonomy of workers and reduce their workloads. Workers — in a clandestine manner, without the knowledge of managements — are seen to leverage the unfamiliarity of managements with the precise technical and specialised inner workings of the labour process and utilise technologies for their own purposes. This dual conceptualisation of the impacts of automation on the labour process — where the role of automation is unpacked to understand it: one curbing worker autonomy and the other enhancing it — is another conceptual contribution of this thesis as it questions unidirectional notions of technologies. This contribution is further



apposite given that automation has emerged as a significant trend in several occupations at large, and the Indian IT industry in particular, as firms seek to integrate automation into their business models leading to important ramifications for not just the labour process but also the very future of work.

This study sought to develop an understanding of the labour process that was not divorced from the apparatuses and institutions that govern labour in production. For this, the labour process was visualised as being ensconced within a larger network of employment relations and labour regulations (Burawoy 1983, 1985; Smith and Meiskins 1995; Storey 1985b; Thompson 2003). The research was approached through the analytical lens of ‘managerial controls’ (Edwards 1979) and while this in itself is not a novel approach to understanding the effects of state institutions on labour processes — distinctly proposed by Storey (1985b) — this study demonstrates a potential path to operationalise and apply such a theoretical approach. The labour process literature has often argued that the labour process possesses a ‘relative autonomy’ from national institutional dynamics based on the observations of similar labour processes in (ex)-communist states (see Edwards 1990; Smith 2008; Thompson 1989; Thompson and Smith 2009). And Thompson (2010: 12) argues that “...such institutional logics have limited explanatory power with respect to labour process dynamics”. However, this study finds several important linkages between managerial controls and the nature of labour regulations, especially in the case of bureaucratic control mechanisms and these have been seldom explored in labour process literatures. These interconnections it is held, based on this study’s empirical findings, are not tenuous and in fact fairly direct and tangible in their relationship to controls and the control imperative. While, dissimilarities in the manner of the labour process across different sites may occur due to a host of factors, several management control mechanisms can only be explained by examining the manner in which national or local institutions that govern the industry or location are structured. One of the study’s consistent attempt over two empirical and analysis chapters (chapters 5 and 6) was to draw out these connections, both between technical and bureaucratic controls, especially the latter, and significantly, their relationships with regulation. In several instances, the nature and selection of managerial controls is found to be closely linked to the shape and extent of regulatory institutions of labour or the ‘political apparatuses’ of production (see also Burawoy 1983, 1985). Thus, it is argued that the ‘relative autonomy’ of the labour process exists only in a



restricted sense, but to understand it comprehensively requires the incorporation of wider labour institutions. Based on the evidence from the empirical data, some of the strongest linkages between regulatory apparatuses of labour and managerial controls over the labour process can be found in aspects that regulate the employer's and manager's ability to discipline and punish workers (which forms a core element of Edwards' [1979] bureaucratic controls); and this is particularly evident in the governance of dismissals. This study has therefore argued in support of a theoretical position that views management controls and therefore labour processes are strongly influenced by systems of national institutional and their configurations. Examples in the IT industry in India include the coercive management strategies due to extant dismissal regulations and unique institutional avoidance strategies that attempt to expand managerial discretion over workplace rules. It is admitted that perhaps the ability to make such connections — between the 'apparatuses' or regulatory institutions — might have been possible due to the fact that they are perhaps clearer in industries where there is little tradition or prevalence of collective bargaining mechanisms in any substantive way or in countries and locations such as India where there has traditionally been a greater dependence by workers on protective legislation rather than local bargaining with employers. Overall, we find that different national institutional configurations of production apparatuses can result in entirely different work organisation and labour processes in the same industry (see Batt et al. 2009; Burawoy 1983, 1985). The nature of regulatory frameworks and labour institutions related to labour affect the selection and form of managerial control strategies resulting in distinctive national or local patterns of production (Vidal and Hauptmeier 2014: 19).

The findings, conclusions and analytical arguments, presented in chapter 6 and revisited above, have implications for the manner in which the state and its role in production is approached. Traditional characterisations of the state sought to view it as being captured by capital and being shaped to support capitalist accumulation (Braverman 1999: 197). But this study reiterates the potential for changing state regulations and rules in favour of workers, especially in "...altering the rules under which bureaucratic control operates" (Edwards 1979: 162). By implication and inference then, labour regulations too are a site for contestation between capital and labour especially in deciding the overarching, common rules that all production must be carried out within. This too arises out of a capital-labour dialectical relation rather than simply being viewed as a location of monist

control by capital. This means that the state can and does indeed present itself as a means for employers and capitalists to control workers, but at the same time, as the study showed (see section 6.3) how the workers organically view the state as possessing the power to control and constrain employers (also *cf.* Dukes 2014; Jessop 1990; Streeck 1997); this latter approach was also the dominant expectation of the workers, manifesting both in informal and formal demands (for regulation) directed to the state. It is then entirely plausible that workers utilise the state to change the manner of the operation of managerial controls and then turn “to bureaucratisation of the workplace to codify and thereby defend their negotiated gains” Edwards (1979: 132). Such scenarios are not entirely impossible within democratic political and economic systems. It was really the profoundly undemocratic and unitarist nature of TSM that sought to bypass any such possibilities, for it was always “...in spirit and results, undemocratic in so far as we associate industrial democracy with labour organization and collective bargaining” (Hoxie 1916: 849). Thus, the forging of these empirical connections — between the labour process and state regulation — is an important contribution of this thesis. While this is not a new or fresh theoretical contribution *per se*, it operationalises such a theoretical approach and shows a potential path for a more integrated and comprehensive examination of labour processes. The attempt to build such connections in the study of the labour process — through the analysis of practices around bureaucratic management controls — lead to a more comprehensive understanding of the relationships between the labour process and the institutions that regulate labour.

### 7.3

#### **Limitations of the Study and Avenues for Further Research**

This section presents the limitations of the study, thus providing space for introspection on improvements as well as avenues for future research. As noted in section 3.3, a principal drawback of the study occurred rather early in the course of the fieldwork when the researcher was unable to secure formal access to ITS workplaces; it is widely recognised that offshored workers and workplaces, especially in India, are often out of bounds to researchers (see for example Taylor and Bain 2005; Noronha and D’Cruz 2009). Access to offshored and outsourced workplaces is usually difficult to obtain not only due

to client requirements for confidentiality and security, but also due to the firms' inclination to not reveal their management practices and work strategies. Moreover, the study's focus on managerial control strategies made it inappropriate to approach the IT firms through management contacts in a top-down manner as it had the potential to affect workers' responses. Overall, the inability of the study to observe and focus attention on a single workplace — which could potentially have provided a detailed picture of the dynamics of the relationships between workers and managers, in line with the more classic labour process tradition of 'core LPT' (Jaros 2010) — is probably the study's single largest drawback. However, it is held here that the research benefited from becoming a wider and generalisable study due to the wide heterogeneity of the interviewees in terms of size and type of employers, levels of seniority/experience, and the types of work. In taking this route for the study, there remains an important pathway for future research that can add value to the contributions developed here by focussing on a single workplace and directly observing such work and its management.

There were some practical limitations in terms of time which prevented putting together a larger sample of interviewees as well as conducting repeat interviews. The limitations of time were not as much from the researcher's side — though indeed the motivation to complete the research within a reasonable timeframe cannot be denied — as much as from that of interviewees who often found it difficult to make time out of their busy schedules making repeat interviews a difficult prospect. It has been established in the study that ITS workers work typically long hours often running into weekends (section 5.3). The difficulties in coordinating to find a convenient time for the interviewees — compounded by localised difficulties that increased travel time and distance in the fairly large city of Bengaluru — meant that a few of the interviews had to be conducted via video-conference or via telephone as per interviewee preference/request. Not only can a study benefit from the direct observation of workers by accessing their work locations but also by utilising a larger sample that reflects the composition of firms in the industry by size as well as some of the key segmentations of this workforce.

This study was not designed to explore the effects of various types of labour segmentations, both internal and external. This includes not just pervasive social

segmentations such as gender or ethnicity, but also some of those that are unique to India such as caste or other linguistic/regional groupings. The field research also indicated segmentations within employment such as contract-work or specialist consultant work: but due to the fact that the study was not designed specifically to incorporate and study the conditions of work of such workers, none of the interviewed workers were in such non-standard employment, though some of them had worked as contract IT workers previously. The study has highlighted the widespread use of contract IT workers in the industry, though the extent of contractualisation and the relative inequities in their working conditions remains relatively unknown. An examination that incorporates both the varied social segments and contract workers in core IT work offers a significant pathway for future research, including through comparative studies.

The study sought to understand managerial controls and for this it interviewed a range of people involved with the industry. This involved workers, trade unionists, managers and government officials. While interviews with the workers and trade unionists were comprehensive, the study was largely unprepared for the heterogeneity of managers. First-line managers, technical managers, middle managers, HR managers, senior managers and executive management all have different and unique views and perspectives of the industry and how the work is being carried out within it. Even though the interview schedules were subsequently customised to accommodate the different types of managers and the heterogeneities therein, it was felt that this was insufficient. Future studies on managerial controls can benefit by designing the study with specific types or levels of management in mind from the very beginning, as each of the levels have unique views on issues of control and work-related challenges.

This study attempted to build theoretical and empirical connections between labour regulations and labour processes. Consolidating and building such connections arguably poses the most significant challenge for any future research. The current understanding of labour processes is restricted by its lack of understanding of the context within which production takes place (Vidal and Hauptmeier 2014). As a result, making and identifying these connections forms a significant area for advancement in the study and understanding of the labour process. Not only is this question rife with problems of 'boundaries' and

‘connectivities’, but it is also complicated by the various ‘levels’ and ‘circuits’ of analysis. These complications imply that any research project that incorporates or combines these aspects will require the deployment of theoretical resources as well as insights that are currently spread across a wide range of disciplines. In elementary terms, this study took an approach that approached the labour process through the lens of managerial controls and then combined these controls with the concept of production politics. This is one approach to analyse and understand labour processes, but there can be several others well; and uncovering such pathways arguably forms the most important area for improving our understanding of the world of work. Such attempts inevitably to run into questions about the nature of the state and the manner of its involvement in production and while tackling issues of the state involves a most complex understanding of capital-labour relations, the author believes that it constitutes a most interesting path to develop a greater understanding of what is really a perennial contestation between the state, capital and labour.

# Appendices

## Appendix A – Sample Information Sheet

### Information Sheet

**Title of Research Project:** Control of knowledge work: IT work in India

**Researcher:** Secki P. Jose (Doctoral Researcher, School of Business, University of Leicester)

**Purpose/Aim of data collection:** PhD (Management) Dissertation

**Brief Description of Study:** This is a part of research that attempts to understand how knowledge-intensive workers are managed by a firm. The study relies on interviews with people currently associated with the Information Technology industry.  
An interaction will comprise of one interview lasting about 20-30 mins.

**Confidentiality:** All the interview data will be stored anonymously without any form of personal identification and used only for the purposes of research. The data folders would be also be encrypted, kept in a password protected file and on offline systems. Access to the data will be available only to the researcher and his Supervisors. The anonymised data would be used as part of a thesis, and may also be used for writing relevant reports and publications. No names or identifying details would be used in any of these instances unless permitted by the interviewee.

**Participation:** Participation in this research is completely voluntary. The interviewee has full freedom to withdraw from being a part of the study at any time without being subject to any prejudice or negative consequences. Participating in the study or refusing to participate in the study will not affect the interviewee in any way.

**Contact Information:** The researcher can be contacted at – [spj15@le.ac.uk](mailto:spj15@le.ac.uk)  
In case you need to report the researcher, the researcher's Supervisors may be reached here -

Dr. Glynne Williams ([gw67@leicester.ac.uk](mailto:gw67@leicester.ac.uk))

Dr. Nikolaus Hammer ([nh80@leicester.ac.uk](mailto:nh80@leicester.ac.uk))

The University of Leicester can be contacted through any of the means listed on its website – [www.le.ac.uk](http://www.le.ac.uk)

## **Appendix B – Table of Labour Legislations: IT Industry in Karnataka, India (2017)**

### **State (Karnataka)**

The Karnataka Shops and Commercial Establishment Act, 1961

The Karnataka Industrial Establishments (National & Festival Holidays) Act, 1963

The Karnataka Labour Welfare Fund Act. 1965

The Karnataka Subsistence Allowance Act, 1988

### **National**

The Minimum Wages Act, 1948

The Payment of Wages Act, 1936

The Payment of Bonus Act, 1965

The Payment of Gratuity Act, 1972

The Equal Remuneration Act 1976

Employees Provident Fund and Miscellaneous Provisions Act, 1952

Employees State Insurance Act, 1948

The Contract Labour (Regulation & Abolition) Act, 1970

The Industrial Employment (Standing Orders) Act, 1946

The Inter State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979

The Child Labour (Prohibition and Regulation) Act, 1986

The Maternity Benefit Act, 1961

Industrial Disputes Act, 1947

Trade Union Act, 1926

The Employees Compensation Act, 1923

Labour Laws (Exemption from Furnishing Returns and maintaining registers by certain establishments) Act, 1988

The Employment Exchanges (Compulsory Notification of Vacancies) Act 1959

Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013

The Apprentices Act, 1961

Plantations Labour Act, 1951

The Motor Transport Workers Act, 1961

The Building and Other Constructions Workers' (Regulation of Employment and Conditions of Service) Act, 1996

The Building and Other Constructions Workers' Welfare Cess Act, 1996



## **Appendix C – Interview Schedules**

- 1. Appendix C1 – Interview Schedule – Workers**
- 2. Appendix C2 – Interview Schedule – Managers**
- 3. Appendix C3 – Interview Schedule – HR Managers**

### **Appendix C1 - Employee Questionnaire**

Date:

#### **PART I. PERSONAL DETAILS**

Name -

Age -

Education -

Job Position -

Years of Total Experience -

Years of Current Experience -

#### **PART II. WORK DETAILS I**

**1.** Describe the standard workflow of your usual day.

**1a.** How does the work get assigned?

**1b.** What are the steps involved in deciding the assignment of work?

**2.** Is there any way to get 'easy' work?

**2a.** How did you learn the work itself? Details.

**2b.** What are the different sources from where you learnt your work or that you need to refer to?

**3.** What are the quality parameters for your work?

**3a.** How is the quality of the work monitored?

**4.** How much work is expected on a usual day? Is there some metric for this?

**4a.** Has there been any change over the last one year?

**5.** Does the work involve overtime?

**5a.** Details – workload wise. In comparison to the quantity of usual work.

**5b.** Is there any spillover of the work into breaks or other time outside of your office hours?

**6.** How many different teams do you have to formally interact with?

**6a.** Have the number of teams increased over the past year/s?

**7.** Has the amount of work you do been reduced/increased over the past years?

**7a.** Has it been transferred to/from another team/department/organization?

**7b.** Have you taken any steps to change the quantum of your work? Detail.

**8.** Is the work automatically recorded? How does documentation take place?

**8a.** How frequently does documentation need to be done for the work?

**8b.** Who are the top-level owners of the USUAL documents?

**9.** Do you have authority to modify 'Process' documents?

**9a.** How frequently do the process documents need to be revised? Has the frequency of the updation to usual and process documents changed over the past year/s?

**9b.** What is the procedure involved?

**9c.** Who are the top-level owners of the process documents?

**10.** What is the amount of customer interaction required of you? (Daily, Weekly, Monthly) – Length.

**10a.** How integral are these interactions for your daily work?

### **III. WORK DETAILS II**

**11.** What is the type of employment contract that you have signed with the firm? (Permanent, Fixed Term-contract, Contractor, Project etc.)

**11a.** Did you have a similar contract in your previous job role? Details

**12.** How is 'performance' decided in your department? Are there any specified metrics for this?

**12a.** Do you find the metrics easy to achieve? Details. Have they changed recently?

**13.** How are promotions and rewards decided in your department? Is there some formal procedure for this with unbiased indicators?

**14.** How is disciplinary action decided in your department? Is there a formal procedure for this, which you are aware of?

**14a.** How strictly are breaks, leaves and timings enforced? (Likert)

**14b.** Do you fully adhere to them? Is there any way to get around them? Details.

**15.** Is there a grievance redressal mechanism in place that you are aware of?

**15a.** Does the chain involve the Management or is it through the HR?

**15b.** Have you felt the need to or used this mechanism?

**15c.** Have you had the need to contact the HR for any reasons related to work? Details.

**16.** What would you point out as serious issues that need to be addressed with regard to the ITes industry?

**16a.** Is there a need for any group, organization to raise such issues about the workplace/industry? Details

**17.** Are you aware of any labour laws which your work/industry falls under?

**17a.** Have you had the need to have work-related interactions with any government agencies (apart from taxes) in the past? Details.

**18.** Do you believe that there is a need for the government to increase/decrease regulation over some aspect of your work? For Eg: Timings, Work contracts, Dismissal, Unions. Elaborate.

## **Appendix C2 - Manager Questionnaire**

Date:

### **PART I. MANAGER'S DETAILS**

Name -

Age -

Education -

Job Position -

Years of relevant Experience -

### **PART II. WORK DETAILS I**

1. What would you rate as the biggest challenges facing your team currently?

Projects, Quality Targets, Timelines - SLAs, Cost Overruns, Employee Related, Automation, Others (specify) - Discuss.

1a. Are these the same issues that you think your organization is also facing?

2. How do you maintain the quality/standard of work in your firm?

2a. Are you able to maintain your targets in the face of attrition and changing personnel?  
To what extent are they maintained?

3. How quickly would you be able to ramp up/down if there is a change in the size of the project?

3a. Do you find it easy to hire/remove employees in the Indian labour market? Details

4. What are the main issues that you have to face on the employees side?

5. What are the aspects where productivity has been increased in your Department over the past year? How was this achieved?

5a. Has there been an increase/decrease in the need for highly qualified (or experienced) workers for the same level of work? Details.

6. Do you think that you and your firm's management have achieved overall control over

the technical aspects of the work? How have you managed to achieve this? For eg. Technical solutioning, Process Flowcharts, etc. Explain.

**6a.** If not, what are the reasons that prevent you from doing so?

**6b.** What are the different methods that you have deployed to ensure that greater control is achieved over the technical aspects of the work? Expand on Answers.

**7.** Do you think that you have achieved a fair degree of control over the 'delivery' aspects of the work? For eg. Adhering to SLAs, Providing agreed services. Elaborate

**7a.** If not, what are the reasons that prevent you from doing so?

**8.** Does your team need overtime to finish work? Explain.

**8a.** How often is overtime availed by your employees? Has there been a decrease /increase of it? Is this remunerated?

**9.** How important are documentation/solution databases for your Work/Department? Do you retain copies of the databases of tickets or Changes?

**9a.** How often is it done? Has its frequency changed over time?

### **PART III. WORK DETAILS II**

**10.** Have there been any significant changes introduced to any aspect of employment contracts over the past year?

**10a.** Do you employ workers on contract? Is it easier/difficult to work with contractors? Details.

**11.** Do you find that the employee wages have been under control?

**11a. (Optional)** What is causing the increase/decrease/stagnation with regard to the skills you need?

**12.** Has there been any increase/decrease in the number of rewards and benefits that are available for your employees?

**12a.** What is the process by which this is decided in your organization?

**12b.** Are there any standardized metrics for judging the performance of workers?

- 13.** Is there a sufficient supply of skilled workers in the economy? Tier I/II/III comparison. Issues between Tier I vs Tier II/III
- 13a.** Are there any other serious differences between Tier I vs Tier II/III which require addressing?
- 13b.** How easy/difficult would it be to transition to a Tier II/III city? Elaborate
- 13c.** What aspects around the IT industry require more attention from a policy perspective?
- 14.** With regard to the regulatory environment, has it become more easier/difficult to increase/decrease employment? Elaborate
- 14a.** Are there any aspects of the regulatory environment of employment that you think needs changing and/or requires to be modified?
- 15.** Are there any aspects of the educational/skilling regulatory environment that you think needs changing and/or requires to be modified?
- 15a.** Is there sufficient educational capacity in India – Quantity and Quality-wise? Details.
- 16.** Are there any aspects of the regulatory environment around infrastructure that you think needs changing and/or requires to be modified? Explain.
- 17.** Are there any other aspects of the regulatory environment that you think needs changing and/or requires to be modified? Ones that we have not discussed? Elaborate.

## **Appendix C3 – HR Manager Questionnaire**

Date:

### **PART I. MANAGER'S DETAILS**

Name -

Age -

Education -

Job Position -

Years of relevant Experience -

### **PART II. WORK DETAILS I**

1. What would you rate as the biggest challenges facing your organisation currently?

Attrition, Retention of existing, Hiring, Cost (Salary) Overruns, Automation, Regulatory, Others (specify) - Discuss.

1a. Are these the same issues that you think your organization is also facing?

2. Is your organisation able to retain clients/maintain your targets/deliverables in the face of attrition and changing personnel? To what extent are they maintained?

3. How quickly would you be able to ramp up/down if there is a change in the number of projects?

3a. Do you find it easy to hire/remove employees in the Indian labour market? Details

4. What are the main issues that you have to face from the employees?

5. Has there been an increase/decrease in the qualifications (or experience) of workers for the same level of work? Details.

6. Do you provide overtime to workers? Explain.

6a. Has there been a decrease /increase of it? Is this remunerated?

### **PART III. WORK DETAILS II**

7. Have there been any significant changes introduced to any aspect of employment contracts over the past year?

7a. Do you employ workers on contract? Is it easier/difficult to work with contractors? Details.

8. Do you find that the employee wages have been under control?

8a. (Optional) What is causing the increase/decrease/stagnation with regard to the skills you need?

9. Has there been any increase/decrease in the number of rewards and benefits that are available for your employees?

9a. What is the process by which this is decided in your organization?

9b. Are there any standardized metrics for judging the performance of workers?

10. Is there a sufficient supply of skilled workers in the economy? Tier I/II/III comparison. Issues between Tier I vs Tier II/III

10a. Are there any other serious differences between Tier I vs Tier II/III which require addressing?

10b. How easy/difficult would it be to transition to a Tier II/III city? Elaborate

10c. What aspects around the IT industry require more attention from a policy perspective?

11. With regard to the regulatory environment, has it become more easier/difficult to increase/decrease employment? Elaborate

11a. Are there any aspects of the regulatory environment of employment that you think needs changing and/or requires to be modified?

12. Are there any aspects of the educational/skilling regulatory environment that you think needs changing and/or requires to be modified?

12a. Is there sufficient educational capacity in India – Quantity and Quality-wise? Details.

13. Are there any aspects of the regulatory environment around infrastructure that you think needs changing and/or requires to be modified? Explain.



**14.** Are there any other aspects of the regulatory environment that you think needs changing and/or requires to be modified? Ones that we have not discussed? Elaborate.

## Appendix D – List and Details of Interviewees (ITS Workers)

Code	Age	Sex	Qualifications	Certifications	Designation	Work Experience (yrs)	Current Firm	Employer Type	Date of Interview
Worker 01	35	M	B.Tech (ECE)	RHCE, HPCSA	Senior System Administrator	12	0.2	Large American IT firm	28/01/2017
Worker 02	27	M	Masters (Electronics)	RHCE	System Administrator	4	2	Small Indian IT firm	05/02/2017
Worker 03	33	M	Diploma (Telecomm), BCA (ongoing)	RHCE, HPCSA, ITIL, Cloud	System Administrator	12.5	6	Large American IT firm	09/02/2017
Worker 04	30	M	PGDCA (MCA)	-	Technical Lead	9	0.5	Large Indian IT firm	14/02/2017
Worker 05	32	M	B.Tech	DB2	Senior Consultant (Databases)	9.5	9	Large American IT firm	18/02/2017
Worker 06	32	M	MCA	-	System Administrator	8.5	8.5	Large Indian IT firm	02/03/2017
Worker 07	27	M	BE (ECE)	RHCE, MCSE, Cloud	Technology Analyst	5	0.11	Large American IT firm	04/03/2017
Worker 08	26	M	BCA, D (ECE)	-	Support Engineer	8	2	Large Indian IT firm	20/02/2017
Worker 09	31	F	MSc (CS)	MS Dynamics	Senior Functional Consultant	6	5	Medium Indian IT firm	06/03/2017
Worker 10	30	M	MBA	-	Senior Functional Consultant	6	4	Medium Indian IT firm	10/03/2017
Worker 11	28	F	MCA	MCSF, VMS	Domain Specialist	7.5	0.4	Large American IT firm	11/03/2017
Worker 12	30	M	BE (ECE)	MCSF	Senior Associate Consultant	8	2	Large American IT firm	02/04/2017
Worker 13	38	M	BE	Total 6 certifications	System Analyst	13	0.6	Large Indian IT firm	22/03/2017
Worker 14	26	M	BE (EEE)	CCNA (RS), CCNA (S), CCNP (R), JNCIA	Senior Analyst (Networking)	4	0.4	Large European IT firm	15/03/2017
Worker 15	24	M	BE (ECE)	CCNA, JNCIA	Senior Network Engineer	2.9	2.9	Large Indian IT firm	16/03/2017
Worker 16	26	M	B.Tech (IT)	CCNA	Senior Network Integration Engineer	4.5	0.3	Large American IT firm	23/03/2017
Worker 17	23	F	BE (ECE)	JAVA	Software Engineer	2.5	0.1	Large Indian IT firm	21/03/2017
Worker 18	28	F	BE (CS)	CCNA	Senior Network Integration Engineer	4.5	0.3	Large American IT firm	27/03/2017
Worker 19	26	M	B.Tech (ECE)	CCNA	Team Lead - Network Integration	6	0.6	Large American IT firm	01/04/2017
Worker 20	37	F	B.Tech	-	Senior Technical Lead	15	2	Large American IT firm	28/03/2017
Worker 21	28	M	Diploma (ECE)	CCNA, JNCIA	Senior Network Integration Engineer	7	0.2	Large American IT firm	30/03/2017
Worker 22	24	M	BE (CS)	-	Senior Engineer	2.5	2.5	Large American IT firm	24/03/2017
Worker 23	37	M	MCA	-	Support Analyst	13.5	2.5	Medium Indian IT firm	02/04/2017
Worker 24	31	M	BE (CS)	-	Senior Engineer	7	0.3	Large Indian IT firm	29/03/2017
Worker 25	36	M	Msc (IT)	Windows 2000, NCSE	Systems Management Specialist	17	8	Large American IT firm	19/04/2017
Worker 26	34	M	B.Tech (ECE)	-	Senior Engineer	12	10	Large American IT firm	16/04/2017
Worker 27	38	F	MCA	RHCE, Solaris	Principal System Administrator	15	10	Large American IT firm	18/04/2017
Worker 28	41	M	BE	-	Devops Manager	17	0.7	Small Indian IT firm	12/04/2017
Worker 29	44	M	BE	-	Senior Architect	18	6	Large American IT firm	30/01/2017
Worker 30	30	F	B.Tech (EEE)	-	Senior Engineer	6	3	Large American IT firm	26/03/2017
Worker 31	29	M	B.Tech	CCNA	Senior Engineer	5	3	Large Indian IT firm	28/03/2017
Worker 32	31	F	BE	-	Senior Systems Analyst	8	0.9	Large Indian IT firm	26/03/2017
- None									

## Appendix E – List and Details of Interviewees (Managers)

Code	Age	Sex	Qualifications	Designation	Work Experience (yrs)	Current Firm	Employer Type	Date of Interview
Manager 01	42	M	MMS	Associate Service Delivery Manager	16	3	Large Indian IT firm	27/02/2017
Manager 02	36	M	MBA	Project Manager	14.5	1	Medium Indian IT firm	12/03/2017
Manager 03	51	M	MA	Senior Project Manager	25	6	Small Indian IT firm	18/03/2017
Manager 04	38	M	MBA	HR Manager (Recruitment and Training)	10	2	Large Indian IT firm	24/04/2017
Manager 05	57	M	-	VP -HR	-	-	Large Indian IT firm	27/04/2017
Manager 06	56	M	-	Chief Technology Officer	-	-	Large Indian IT firm	30/03/2017
Manager 07	44	M	-	Chief Technology Officer	22	-	Small Indian IT firm	10/04/2017
Manager 08	48	M	BTech	Senior Consultant	23	13	Large US IT firm	22/04/2017
Manager 09	28	M	MA	Senior Associate Lead - HR	5	2	Large US IT firm	15/04/2017
Manager 10	62	M	-	Mentor	-	-	Large Indian IT firm	19/04/2017
- <sup>1</sup> Not Known								

## References

- Abbott, A. (1988). *The system of professions: An essay on the division of expert labor*. Chicago: University of Chicago Press
- Ackroyd, S. and Fleetwood, S. (2000). *Realist Perspectives on Organisation and Management*, London: Routledge.
- Agarwala, R. (2008). Reshaping the social contract: emerging relations between the state and informal labor in India. *Theory and Society*, 37(4), 375-408.
- Aglietta, M. (1979). *A Theory of Capitalist Regulation: The U.S. Experience*, Trans. By David Fernbach. London: Verso.
- Ahluwalia, M. S. (2002). Economic reforms in India since 1991: Has gradualism worked? *Journal of Economic perspectives*, 16(3), 67-88.
- Alvesson, M. (2001). Knowledge work: Ambiguity, image and identity. *Human relations*, 54(7), 863-886.
- Alvesson, M. (2004). *Knowledge work and knowledge-intensive firms*. Oxford: Oxford University Press.
- Alvesson, M., and Kärreman, D. (2001). Odd couple: making sense of the curious concept of knowledge management. *Journal of management studies*, 38(7), 995-1018.
- Alvesson, M. and Willmott, H. (2002). Identity regulation as organizational control: Producing the appropriate individual. *Journal of management studies*, 39(5), 619-644.
- Armstrong, P. (1989). Management, labour process and agency. *Work, Employment and Society*, 3(3), 307-322.
- Arora A., Arunachalam, V.S., Asundi, J. and Fernandes, R. (2001). The Indian Software Services Industry. *Research Policy* 30, 1267-87.
- Aspray, W., Mayadas, F. and Vardi, M. (2006). *Globalization and Offshoring of Software: A Report of the ACM Job Migration Task Force*. New York: ACM.
- Athreye, S.S. (2005). The Indian software industry and its evolving service capability. *Industrial and Corporate Change*, 14 (3), 393-418.
- Atkinson, J. (1984). The flexible firm and the shape of jobs to come. *Labour market Issues*, 5, 26-29.
- Autor, D. H. (2003). Outsourcing at will: The contribution of unjust dismissal doctrine to the growth of employment outsourcing. *Journal of labor economics*, 21(1), 1-42.
- Bain, P., and Taylor, P. (2000). Entrapped by the 'electronic panopticon'? Worker resistance in the call centre. *New technology, work and employment*, 15(1), 2-18.

- Bain, P., Watson, A., Mulvey, G., Taylor, P. and Gall, G. (2002). Taylorism, targets and the pursuit of quantity and quality by call centre management. *New Technology, Work and Employment*, 17(3), 170-185.
- Bair, J. (2008). Analysing global economic organization: embedded networks and global chains compared. *Economy and Society*, 37(3), 339-364.
- Balakrishnan, P. (2006). Benign Neglect or Strategic Intent? Contested lineage of Indian Software Industry. *Economic and Political Weekly*, 9 Sep 2006 (Special Issue), 3865-3872.
- Barley, S. R. and Kunda, G. (2004). *Gurus, Hired Guns, and Warm Bodies: Itinerant Experts in a Knowledge Economy*. Princeton: Princeton University Press.
- Barnes, T. (2013). The IT industry and economic development in India: A critical study. *Journal of South Asian Development*, 8(1), 61-83.
- Barrett, R. (2004). *Management, Labour Process and Software Development: Reality Bytes*. New York: Routledge.
- Batt, R., and Moynihan, L. (2002). The viability of alternative call centre production models. *Human Resource Management Journal*, 12(4), 14-34.
- Batt, R., Holman, D., and Holtgrewe, U. (2009). The Globalization of Service Work: Comparative Institutional Perspectives on Call Centers. *Industrial & Labor Relations Review*, 62(4), 453-488.
- Beerepoot, N., and Kumar, R. (2015). Upgrading service delivery and employment conditions through indirect insertion in global value chains. *Competition & Change*, 19(5), 374-389.
- Bell, D. (1973). *The Coming of Post-industrial Society: A Venture in Social Forecasting*. Basic Books: New York.
- Beirne, M., Ramsay, H. and Panteli, A. (1998). Developments in computing work: control and contradiction in the software labour process. In Thompson, P. and Warhurst, C. (eds.) *Workplaces of the Future*, London: MacMillan.
- Bhaskar, R. (1978). *A Realist Theory of Science*. Hassocks: Harvester Press.
- Bhaskar, R., and Callinicos, A. (2003). Marxism and critical realism: a debate. *Journal of Critical Realism*, 1(2), 89-114.
- Bhattacharjea, A. (2006). Labour Market regulation and industrial performance in India: A critical review of the empirical evidence. *Indian Journal of Labour Economics*, 49(2), 211-232.
- Blackler, F. (1995). Knowledge, knowledge work and organizations: An overview and interpretation. *Organization studies*, 16(6), 1021-1046.
- Blau, F. D., and Kahn, L. M. (1999). Institutions and laws in the labor market. In *Handbook*

*of Labor economics Volume 3*, 1399-1461.

Blauner, R. (1964). *Alienation and Freedom*. Chicago: Chicago University Press

BLS (2016). *Occupational Employment Statistics*. Available at:

<https://www.bls.gov/oes/tables.htm>. Last accessed June 22, 2018.

Boes, A., and Kämpf, T. (2007). The nexus of informatisation and internationalisation: A new stage in the internationalisation of labour. *Work Organisation, Labour and Globalisation*, 1(2), 193-208.

Braverman, H. (1974). *Labor and Monopoly Capital*. New York: Monthly Review Press

Braverman, H. (1999). *Labor and Monopoly Capital: 25<sup>th</sup> Anniversary Edition*. New York: Monthly Review Press

Bryman, A. (2012). *Social Research Methods*. Oxford: Oxford University Press.

Bryman, A. and E. Bell (2011). *Business Research Methods*, Oxford: Oxford University Press.

Brynjolfsson, E., and McAfee, A. (2011). *Race against the machine*. Lexington, MA: Digital Frontier Press.

Budhwar, P. S., Luthar, H. K., and Bhatnagar, J. (2006). The dynamics of HRM systems in Indian BPO firms. *Journal of Labor Research*, 27(3), 339-360.

Burawoy, M. (1979). *Manufacturing Consent: Changes in the Labour Process under Capitalism*. Chicago: University of Chicago Press.

Burawoy, M. (1983). Between the Labor Process and the State: The Changing Face of Factory Regimes under Advanced Capitalism. *American Sociological Review*, 48, 587-605.

Burawoy, M. (1985). *The politics of production: Factory regimes under capitalism and socialism*. London: Verso Books.

Burgess, R.G. (Ed.) (1982). *Field Research: A Sourcebook and Field Manual*. London: Allen and Unwin.

Burrell, G. (1988). *Modernism, Post-modernism and Organizational Analysis 2: The contribution of Michel Foucault*. *Organisation Studies*, 9(2), 221-235

Callaghan, G., and Thompson, P. (2001). Edwards revisited: technical control and call centres. *Economic and Industrial Democracy*, 22(1), 13-37.

Castells, M. (1996). *The rise of the network society (Vol. 1)*. Malden, MA: Blackwell.

Castells, M. (2000). Toward a sociology of the network society. *Contemporary sociology*, 29(5), 693-699.

Castree N., Coe N.M., Ward K. and Samers, M. (2004). *Spaces of work: global capitalism and geographies of labour*. London: Sage.

Cattaneo, O., Engman, M., Saez, S., and Stern, R. (2010). *International trade in services: new*

- trends and opportunities for developing countries*. Geneva: World Bank.
- Census (2011). *Population Census of India*. New Delhi: Registrar General of India, GoI.
- Clawson, D. (1980). *Bureaucracy and the Labor Process: The Transformation of U.S. Industry, 1860–1920*. New York: Monthly Review Press.
- Coe, N. M., Dicken, P., and Hess, M. (2008). Global production networks: realizing the potential. *Journal of economic geography*, 8(3), 271-295.
- Constitution of India (1949). *The Constitution of India*. New Delhi: Government of India. Available at - <http://www.legislative.gov.in/sites/default/files/COI-updated-as-31072018.pdf>. Last accessed August 15, 2018.
- Chen, M. A. (2005). Rethinking the informal economy: Linkages with the formal economy and the formal regulatory environment. *United Nations University WIDER*, 10, 18-27.
- Collier, A. (1994). *Critical realism: An introduction to Roy Bhaskar's philosophy*. London: Verso.
- Corbridge, S. and Harriss, J. (2002). The shock of reform: the political economy of liberalization in India. In Bradnock, R. W. and Williams, G. (eds.) *South Asia in a Globalising World: Reconstructed Regional Geography*. Prentice Hall, Harlow; New York.
- Cortada, J. W., and Woods, J. A. (1999). The nature of knowledge and its management. *Knowledge Management Yearbook, 2000*. Boston: Heinemann.
- Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five designs*. New York: Sage.
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.) Thousand Oaks: Sage.
- Creswell, J. W. (2009). Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, 3(2), 95-108.
- Creswell, J. W. (2013). *Qualitative, Quantitative and Mixed Methods Approaches*. California: Sage Publications
- Crouch, M., and McKenzie, H. (2006). The logic of small samples in interview-based qualitative research. *Social science information*, 45(4), 483-499.
- Cusumano, M. A. (1991). *Japan's software factories: a challenge to US management*. Oxford University Press: New York
- Davenport, T. H., and Prusak, L. (1998). *Working Knowledge*. Boston: Harvard Business School Press.
- D'Costa, A. P. (2011). Geography, uneven development and distributive justice: the political economy of IT growth in India. *Cambridge Journal of Regions, Economy and Society*, 4(2), 237-251.

- D'Cruz, P. and Noronha, E. (2006). Being Professional: Organisational Control in Indian Call Centres. *Social Science Computer Review*, 24(3), 342-361.
- D'Cruz, P., and Noronha, E. (2013). Hope to despair: The experience of organizing Indian call centre employees. *Indian Journal of Industrial Relations*, 48(3), 471-486.
- Deccan Herald (2009). Skills registry ID to sniff out fake CVs. *Deccan Herald*. 21 February, 2009, Link - <http://archive.deccanherald.com/Content/Feb212009/business20090220119745.asp>. Last accessed 28 September, 2017.
- Deakin, S., Malmberg, J. and Sarkar, P. (2014). How do labour laws affect unemployment and the labour share of national income? The experience of six OECD countries, 1970–2010. *International Labour Review*, 153(1), 1-27.
- Debroy, B. and Kaushik, P.D. (eds.) (2005). *Reforming the Labour Market*. New Delhi: Academic Foundation.
- Deery, S., Nath, V., and Walsh, J. (2013). Why do offshored Indian call centre workers want to leave their jobs? *New Technology, Work and Employment*, 28(3), 212-226.
- Denzin, N.K., and Lincoln, Y.S. (1994). Introduction: Entering the field of qualitative research. In N.K. Denzin and Lincoln, Y.S. (Eds.) *Handbook of qualitative research*. Thousand Oaks, CA: Sage.
- Doellgast, V. (2010). Collective voice under decentralized bargaining: a comparative study of work reorganization in US and German call centres. *British Journal of Industrial Relations*, 48(2), 375-399.
- Doellgast, V., Batt, R., and Sørensen, O.H. (2009). Introduction: Institutional change and labour market segmentation in European call centres. *European Journal of Industrial Relations*, 15(4), 349-371
- Doellgast, V., and Greer, I. (2007). Vertical Disintegration and the Disorganization of German Industrial Relations 1. *British Journal of industrial relations*, 45(1), 55-76.
- Doellgast, V., and Pannini, E. (2015). The impact of outsourcing on job quality for call centre workers in the telecommunications and call centre subcontractor industries. In J. Drahokoupil (ed) *'The outsourcing challenge'*. ETUI: Brussels
- Dossani, R., and Kenney, M. (2003). "Lift and shift": Moving the back office to India. *Information Technologies & International Development*, 1(2), 21-32.
- Dossani, R. and Kenney, M. (2007). The next wave of globalization: Relocating service provision to India. *World Development*, 35(5), 772-791.
- Downing, J. R. (2004). "It's Easier to Ask Someone I Know" Call Center 'Technicians'



- Adoption of Knowledge Management Tools. *The Journal of Business Communication*, 41(2), 166-191.
- Drahokoupil, J. (ed.) (2015). *The outsourcing challenge: organizing workers across fragmented production networks*. ETUI: Brussels.
- Drucker, P. (1968), *The Age of Discontinuity: Guidelines to Our Changing Society*. New York: Harper & Row.
- Drucker, P. F. (1989). *The New Realities*. New York: Harper and Row
- Drucker, P. F. (1993). The rise of the knowledge society. *Wilson Quarterly*, 17(2), 52-71.
- Drucker, P. F. (1999). Knowledge-Worker Productivity: The biggest challenge. *California management review*, 41(2), 79-94.
- Dukes, R. (2014). *The Labour Constitution: The Enduring Idea of Labour Law*. Oxford: Oxford University Press
- Edwards. P. K. (1983). The political economy of industrial conflict: Britain and the United States, *Economic and Industrial Democracy*, 4, 461-50.
- Edwards, P. K. (1990). Understanding conflict in the labour process: The logic and autonomy of struggle. In Knights, D. and Wilmott, H. (eds.) *Labour process theory*. London: Palgrave Macmillan.
- Edwards, P. K. (2010). *Developing Labour Process Analysis*. In Thompson, P. and Smith, C. (eds.) *Working life: renewing labour process analysis*. Palgrave Macmillan: London
- Edwards, P. K. and Scullion, H. (1982). *The social organization of industrial conflict*. Oxford: Blackwell.
- Edwards, R. (1979). *Contested terrain: The transformation of the workplace in the twentieth century*. New York: Basic Books.
- Elger, T. (2001). Critical Materialist Analyses of Work and Employment: A Third Way? In *Between Sociology of Work and Organisation Studies: The State of the Debate in Italy and in the United Kingdom*, Presented in Bologna, 16–17 November.
- Elger, T. and Smith, C. (2005). *Assembling work: Remaking factory regimes in Japanese multinationals in Britain*. Oxford: Oxford University Press.
- Emmenegger, P. (2014). *The Power to Dismiss: Trade Unions and the Regulation of Job Security in Western Europe*. Oxford: Oxford University Press
- Esping-Andersen, G. (1990). *The Three Worlds of Welfare State*, Cambridge, Polity Press.
- Evetts, J. (2003). The sociological analysis of professionalism: Occupational change in the modern world. *International sociology*, 18(2), 395-415.
- Feenstra, R.C. and G.H. Hanson (1996). Globalization, Outsourcing, and Wage Inequality.

*American Economic Review*, 86(2), 240-45.

Fernie, S., and Metcalf, D. (1998). *(Not) hanging on the telephone: payment systems in the new sweatshops*. Centre for Economic Performance, London: LSE.

Feuerstein, P. (2013). Patterns of Work Reorganization in the Course of the IT Industry's Internationalization. *Competition & Change*, 17(1), 24-40.

Flecker, J. (2007). Network economy or just a new breed of multinationals? Relocation of eWork as a window to the restructuring of value chains. *Work organisation, labour and globalisation*, 1(2), 36-51.

Flecker, J., and Meil, P. (2010). Organisational restructuring and emerging service value chains: implications for work and employment. *Work, Employment and Society*, 24(4), 680-698.

Flecker, J., Haidinger, B. and Schonauer, A. (2013). Divide and Serve: The Labour Process in Service Value Chains and Networks. *Competition and Change*, 17(1), 6-23.

Fleetwood, S. (2004). The Ontology of Organization and Management Studies. In Fleetwood, S. and Ackroyd, S. (eds.) *Critical Realist Applications in Organisation and Management Studies*. London: Routledge

Frenkel, S., Korczynski, M., Donoghue, L., and Shire, K. (1995). Re-constituting work: Trends towards knowledge work and info-normative control. *Work, Employment and Society*, 9(4), 773-796.

Frenkel, S., Korczynski, M., Shire, K. A., and Tam, M. (1999). *On the front line: organization of work in the information economy*. Ithaca: ILR Press.

Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York: Macmillan.

Firstpost (2015). Reining in attrition: Infosys gifts iPhone 6s to staff, HCL Tech gives away Mercs. *Firstpost*, 10 January, 2015, Link -<http://www.firstpost.com/business/reining-in-attrition-infosys-gifts-iphone-6s-to-staff-hcl-tech-gives-away-merc-2033881.html>. Last accessed August 28, 2017.

Fournier, V. (1999). The appeal to 'professionalism' as a disciplinary mechanism. *The sociological review*, 47(2), 280-307.

Frey, C. B. and Osborne, M. A. (2011). *The Future of Employment*. Oxford Martin School Research Paper.

Friedman, A. L. (1977). *Industry and labour: Class struggle at work and monopoly capitalism*. London: Macmillan.

Friedman, A.L. and Cornford, D.S. (1989). *Computer Systems Development: History*,

- Organization, and Implementation*, Chichester: Wiley.
- Friedman, T. (2005). *The World is Flat: A Brief History of the World in the Twenty-first Century*. London: Allen Lane.
- GAO (2004). *Current Government Data Provide Limited Insight into Offshoring of Services*. GAO Report to Congressional Committees GAO-04- 932, Washington: Government Accountability Office (USA).
- Gereffi, G. and Korzeniewicz, M. (1994). *Commodity Chains and Global Capitalism*. Westport: Praeger.
- Gereffi, G., Humphrey, J., Kaplinsky, R., and Sturgeon, T. J. (2001). Introduction: Globalisation, value chains and development. *IDS bulletin*, 32(3), 1-8.
- Ghosheh, N., and Messenger, J. (2013). Job Quality In Offshored Business. In Bardhan, A., Jaffee, D. M., and Kroll, C. A. (Eds.). *The Oxford Handbook of Offshoring and Global Employment*. Oxford: Oxford University Press.
- Gopalakrishnan, V. and Shroff, V. (2012). *Information Technology and Software Development Companies in India Categorised as 'Factories'*. Available at - <http://www.nishithdesai.com/information/research-and-articles/nda-hotline/nda-hotline-single-view/newsid/1239/html/1.html>. Last accessed June 10, 2018.
- Gorz, A. (1967). *Strategy for Labor*, Boston: Beacon Press.
- Gramsci, A. (1971[1934]). Selections from the Prison Notebooks 1891-1937. Edited by Hoare, Q. and Nowell-Smith, G., London: Lawrence and Wishart.
- Granovetter, M. and Tilly, C. (1988). Inequality and Labor Processes. In N. Smelser (ed.) *Handbook of Sociology*. California: Sage Publications.
- Greenbaum, J. (1999). On twenty-five years with Braverman's Labor and Monopoly Capital (or, how did control and coordination of labor get into the software so quickly? *Monthly Review*, 50(8), 28-31.
- Guba, E. G. and Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies? In Fetterman, D.M. (ed.) *Qualitative approaches to evaluation in education*. New York: Praeger Publishers.
- Hall, P. A. and Soskice, D. (2001). An introduction to varieties of capitalism. In Hall, P.A. and Soskice, D. (Eds.), *Varieties of capitalism: The institutional foundations of comparative advantage*. New York: Oxford University Press.
- Hammer, N. and Riisgaard, L. (2015). Labour and segmentation in value chains. In K. Newsome, P. Taylor, J. Bair and A. Rainnie (eds.), *Putting Labour in Its Place. Labour Process Analysis and Global Value Chains*. London: Palgrave.

- Harvey, D. (2001). Globalization and the “spatial fix.” *Geographische Revue*, 2, 23–30.
- Harvey, D. (2007). *A Brief History of Neoliberalism*. Oxford: Oxford University Press.
- Heeks, R. (1996). *India's Software Industry: State Policy, Liberalisation and Industrial Development*. Beverly Hills, CA: Sage Publications.
- Heeks, R., Krishna, S., Nichol森, B. and Sahay, S. (2001). Synching or sinking: global software outsourcing relationships. *Software (IEEE)*, 18(2), 54-60.
- Held, D., McGrew, A., Goldblatt, D. and Perraton, J. (1999). *Global Transformations*. Cambridge: Polity.
- Hermann, C. and Flecker, J. (Eds.) (2012). *Privatization of public services: impacts for employment, working conditions, and service quality in Europe*. New York: Routledge.
- Highsmith, J. (2001). *Principles behind the Agile Manifesto*. Available online - <https://agilemanifesto.org/principles.html>. Last accessed July 05, 2018.
- Hijzen, A., Görg, H. and Hine, R.C. (2003). *International Fragmentation and Relative Wages in the UK*. IZA Discussion Paper No. 717, Bonn: IZA.
- Hirschheim, R., George, B., and Wong, S. F. (2004). Information technology outsourcing: The move towards offshoring. *Indian Journal of Economics and Business*, 3, 103-124.
- Hirschhorn, L. (1984). *Beyond Mechanization*. Cambridge, MA: MIT Press.
- Hislop, D. (2002). Mission impossible? Communicating and sharing knowledge via information technology. *Journal of Information Technology*, 17(3), 165-177.
- Hislop, D. (2013). *Knowledge management in organizations: A critical introduction*. Oxford: Oxford University Press.
- Hochschild, A. (1983). *The managed heart: Commercialization of feeling*. Berkeley: University of California Press.
- Holman, D., Chissick, C. and Totterdell, P. (2002). The effects of performance monitoring on emotional labor and well-being in call centers. *Motivation and Emotion*, 26(1), 57–81.
- Holman, D., Batt, R. and Holtgrewe, U. (2007). *The global call center report: International perspectives on management and employment*. Ithaca, NY: Authors
- Houlihan, M. (2002). Tensions and Variations in Call Centre Management Strategies, *Human Resource Management Journal*, 12(4), 67–85.
- Howcroft, D. and Richardson, H. (2012). The back office goes global: exploring connections and contradictions in shared service centres. *Work, Employment and Society*, 26(1), 111-127.
- Hoxie, R. F. (1916). Scientific management and labor welfare. *Journal of Political Economy*, 24(9), 833-854.

- Hsiao, R. L., Tsai, S. D. H., and Lee, C. F. (2006). The problems of embeddedness: knowledge transfer, coordination and reuse in information systems. *Organization Studies*, 27(9), 1289-1317.
- Huws, U. (2003). *The Making of a Cybertariat: Virtual Work in a Real World*. London: Merlin Press
- Huws, U. (2014). *Labor in the Global Digital Economy: The Cybertariat Comes of Age*, New York: Monthly Review Press.
- Huws, U. and Dahlmann, S. (2009). Global restructuring of value chains and class issues. In Pupo N.J. and Thomas M.P. (eds.) *Interrogating the new economy: Restructuring work in the 21st century*. Toronto: University of Toronto Press.
- Hyman, R. (1975). *Industrial Relations: A Marxist Introduction*. London: Palgrave Macmillan.
- Hyman, J., Scholarios, D., and Baldry, C. (2005). Getting on or getting by? Employee flexibility and coping strategies for home and work. *Work, Employment and Society*, 19(4), 705-725.
- Ilavarasan, P.V. (2008). Software Work in India: A Labour Process view. In Upadhyia, C. and Vasavi, A.R. (eds.) *In an outpost of the global economy*. New Delhi: Sage.
- ILO (2007). *Offshoring and the labour market: What are the issues?*. Economic and Labour Market Paper 2007/11, Economic and Labour Market Analysis Department, Geneva: ILO.
- Jacoby, S. M. (1998). *Modern Manors: Welfare Capitalism Since the New Deal*. Princeton: Princeton University Press.
- Jaehrling, K., and Méhaut, P. (2012). 'Varieties of institutional avoidance': employers' strategies in low-waged service sector occupations in France and Germany. *Socio-Economic Review*, 11(4), 687-710.
- James, A., and Vira, B. (2010). Unionising the new spaces of the new economy? Alternative labour organising in India's IT Enabled Services–Business Process Outsourcing industry. *Geoforum*, 41(3), 364-376.
- Jaros, S. (2010). The Core Theory: Critiques, Defences and Advances. In P. Thompson and C. Smith (eds.) *Working Life: Renewing labour process analysis*. Basingstoke: Palgrave Macmillan
- Jessop, B. (1990a). *State Theory: Putting Capitalist States in their Place*. Cambridge: Polity.
- Jessop, B. (1990b). Regulation theories in retrospect and prospect. *International Journal of Human Resource Management*, 19(2), 153-216.
- Jessop, B. (1996). Post-Fordism and the state. In Amin, A. (ed.) *Post-Fordism: A Reader*. Oxford: Blackwell
- Jessop, B. (2007). *State Power, A Strategic-relational Approach*. Cambridge: Polity Press.

- Jonas, A. E. G. (1996). Local labour control regimes: uneven development and the social regulation of production. *Regional Studies*, 30(4), 323-338.
- Kapur, D. (2002). The causes and consequences of India's IT boom. *India Review*, 1(2), 91-110.
- Kelly, J. (1985). Management's Redesign of Work: Labour Process, Labour Markets and Product Markets. In Knights, D., Wilmott, H., and Collinson, D. (eds.) *Job Redesign*. Aldershot: Gower.
- Keynes, J.M. (1963 [1930]). Economic Possibilities for our Grandchildren. In *Essays in Persuasion*. New York: W.W. Norton and Co.
- Kinnie, N., and Parsons, J. (2004). Managing client, employee and customer relations: constrained strategic choice in the management of human resources in a commercial call centre. In *Call centres and human resource management*. London: Palgrave Macmillan.
- Knights, D. and Wilmott, H. (1990). Introduction. In Knights, D. and Wilmott, H. (eds.) *Labour Process Theory*, London: Macmillan.
- Kochhar, K., Kumar, U., Rajan, R., Subramanian, A., & Tokatlidis, I. (2006). India's pattern of development: What happened, what follows? *Journal of Monetary Economics*, 53(5), 981-1019.
- Kochen, M. (1984). *A New Concept of Information Society* in B. El-Hadidy and E.E. Home (eds.) *The Infrastructure of an Informational Society*. Amsterdam: Elsevier
- Kohli, A. (2007). State, business, and economic growth in India. *Studies in Comparative International Development*, 42(1-2), 87-114.
- Kraft, P. (1977). *Programmers and Managers*. New York: Springer-Verlag.
- Kraft, P. (1979). The routinizing of computer programming. *Work and Occupations*, 6(2), 139-155
- Kraft, P. and Dubnoff, S. (1986). Job content, fragmentation, and control in computer software work. *Industrial Relations: A Journal of Economy and Society*, 25(2), 184-196.
- Kurup, D. (2009). For techies, the day just got a tad longer. *The Hindu*. January 07, 2009, <https://www.thehindu.com/todays-paper/tp-national/tp-karnataka/For-techies-the-day-just-got-a-tad-longer/article16346804.ece>. Last accessed 12 July, 2018.
- Kuruvilla, S., Das, S., Kwon, H. and Kwon, S. (2002). Trade Union Growth and Decline in Asia. *British Journal of Industrial Relations*, 40, 431-461.
- Kvale, S. (2002). The Social Construction of Validity. In Denzin, N. K. and Lincoln, Y. S. (eds.) *The Qualitative inquiry Reader*. Thousand Oaks: Sage Publications.
- Leidner, R. (1993). *Fast food, fast talk: service work and the routinization of everyday life*. Berkeley:



University of California Press.

Lipietz, A. (1988). Accumulation, crises, and ways out: some methodological reflections on the concept of “regulation”. *International Journal of Political Economy*, 18(2), 10-43.

Littler, C. R. (1982). *The development of the labour process in capitalist societies*. New York: Heineman.

Littler, C. R. (1985). Taylorism, Fordism and job design. In Knights, D. et al. (eds.) *Job Redesign: Critical Perspectives on the Labour Process*. Aldershot: Gower

Littler, C. R. (1990). The Labour Process Debate: A Theoretical Review 1974–88. In Knights, D. and Wilmott, H. (eds.) *Labour process theory*. London: Palgrave Macmillan.

Littler, C. R., and Salaman, G. (1982). Bravermania and beyond: recent theories of the labour process. *Sociology*, 16(2), 251-269.

Mallet, S. (1975). *The New Working Class*. Nottingham: Spokesman.

Marchington, M., Grimshaw, D., Rubery, J. and Willmott, H. (2005). *Fragmenting Work: Blurring Organizational Boundaries and Disordering Hierarchies*, Oxford: Oxford University Press.

Marx, K. (2010 [1887]). Capital Volume 1. New Delhi: Leftword.

Mazumdar, I. (2001). EPZs and Their Workers in India: A Study of the Noida Export Processing Zone. In Oberai, A.S., Sivananthiran, A. and Venkata Ratnam, C.S. (eds.) *Labour Issues in Export Processing Zones in South Asia: Role of Social Dialogue*, New Delhi: ILO.

Meardi, G., Donaghey, J., and Dean, D. (2016). The strange non-retreat of the state: implications for the sociology of work. *Work, Employment and Society*, 30(4), 559-572.

Meil, P. (2012). Consent and content: effects of value chain restructuring on work and conflict in highly skilled workforces. *Work Organisation, Labour and Globalisation*, 6(2), 8-23.

Messenger, J. and Ghosheh, N. (2010). *Offshoring and Working Conditions in Remote Work*, Basingstoke: Palgrave MacMillan and International Labour Office.

Miles, I. and Gershuny, J. (1987). The Social Economics of Information Technology. In R. Finnegan, G. Salaman and K. Thompson (eds.) *Information technology: Social Issues*. London: Hodder and Stoughton

Minichiello, V., Aroni, R., Timewell, E. and Alexander, L. (1990). *In Depth Interviewing: Researching People*. Melbourne: Longman Cheshire.

Mirchandani, K. (2004). Webs of resistance in transnational call centres. In Thomas, R., Mills, A. and Mills, J. (eds.) *Identity Politics at Work*. London: Routledge.

Mitchell, R., Mahy, P. and P.G. Gahan (2014). The evolution of labour law in India: an overview and commentary on regulatory objectives and development. *Asian Journal of Law and Society*, 1(02), 413-453.

- MIT (2006). *Services Offshoring Working Group—Final Report*. Industrial Performance Center, Boston: MIT.
- Morgan, G., and Hauptmeier, M. (2014). Institutional Theory in Comparative Employment Relations. In Wilkinson, A., Wood, G. and Deeg, R. (eds.) *The Oxford Handbook of Employment Relations*. Oxford: Oxford University Press.
- Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.
- Mulholland, K. (2002). Gender, emotional labour and teamworking in a call centre. *Personnel Review*, 31(3), 283-303.
- Mullin, R. (1996). Managing the outsourced enterprise. *Journal of Business Strategy*, 17(4), 28-36.
- Murayama, M. and Yokota, N. (2009). Revisiting labor and gender issues in Export Processing Zones: Cases of South Korea, Bangladesh and India. *Economic and Political Weekly*, 44(22), 73-83.
- NASSCOM. (2005). Extending India's leadership in the global IT and BPO industries. NASSCOM-McKinsey report 2005. New Delhi: NASSCOM.
- NASSCOM (2014). *The IT-BPM Sector in India: Strategic Review 2014*. New Delhi: NASSCOM
- NASSCOM (2015). *Knowledge Professionals*, Link - <http://www.nasscom.in/knowledge-professionals>. Last accessed May 19, 2017.
- NASSCOM (2016). *The IT-BPM Sector in India: Strategic Review 2016*. New Delhi: NASSCOM
- NASSCOM (2017). *Jobs and Skills: The imperative to reinvent and disrupt*. Available at - [http://memberdirectory.nasscom.in/sites/default/files/Jobs\\_and\\_Skills.pdf](http://memberdirectory.nasscom.in/sites/default/files/Jobs_and_Skills.pdf). Last accessed August 27, 2017.
- NCEUS (2009). *The Challenge of Employment in India: an informal economy perspective*. Report of the National Commission for Enterprises in the Unorganised Sector (NCEUS), Vol. 1, New Delhi: Government of India
- Nolan, P., and Wood, S. (2003). Mapping the future of work. *British Journal of Industrial Relations*, 41(2), 165-174.
- Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science*, 5(1), 14-37.
- Nonaka, I., and Takeuchi, H. (1995). *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- Norlander, P., Erickson, C., Kuruvilla, S. and Kannan-Narasimhan, R. (2015). India's



outsourcing industry and the offshoring of skilled services work: A review essay. *E-journal of International and Comparative Labour Studies*, 4(1), 65-82.

Noronha, E. and D'Cruz, P. (2006). Organising Call Centre Agents: Emerging Issues. *Economic and Political Weekly*, 41(7), 2115–2121.

Noronha, E., and D'Cruz, P. (2009). *Employee identity in Indian call centres: The notion of professionalism*. New Delhi: Sage Publications India.

Noronha, E., and D'Cruz, P. (2010). Employee Dilemmas in the Indian ITES-BPO Sector. In Messenger, J. and Ghosheh, N. (eds.) *Offshoring and Working Conditions in Remote Work*. London: Palgrave Macmillan.

Noronha, E. and D'Cruz, P. (2013). Hope to despair: the experience of organizing Indian call centre employees. *Indian Journal of Industrial Relations*, 48(3), 471-486.

Noronha, E. and D'Cruz, P. (2016). Creating Space: The Role of the State in the Indian IT-Related Offshoring Sector. In Flecker, J. (ed.) *Space, Place and Global Digital Work*, Dynamics of Virtual Work. Springer

NSR. (2017). National Skills Registry Context. Available at -

<https://nationalskillsregistry.com/nsr-context.htm>. Last accessed April 16, 2017.

OECD. (2010). The Information and Communication Technology Sector in India: Performance, Growth and Key Challenges. *OECD Digital Economy Papers*, No. 174, Paris: OECD.

Ogunnaike, B. and Ray, W.H. (1994). *Process Dynamics, Modeling, and Control*. Oxford: Oxford University Press.

Olsen, K. B. (2006). *Productivity impacts of offshoring and outsourcing: A Review*. OECD STI Working Paper, Available at <http://www.oecd.org/science/sci-tech/36231337.pdf>. Last accessed 12 February 2016.

ONS (2016). Employment and employee types. Data available at -

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes>. Last accessed June 10, 2018.

Oshri, I., Kotlarsky, J. and Chun-Ming, L. (2008). *Four Strategies for Offshored 'Captive' Centres*. The Wall Street Journal, May 12 2008, Available at –

<http://www.wsj.com/articles/SB121018777870174513>. Last accessed November 07, 2015.

Oshri, I., Kotlarsky, J., Rottman, J. W., and Willcocks, L. L. (2009). Global sourcing: recent trends and issues. *Information Technology & People*, 22(3), 192-200.

Outlook (2006). Lost in a pile of cash. *Outlook*. 26 April, 2006.

<https://www.outlookindia.com/magazine/story/lost-in-a-pile-of-cash/231034>. Last

accessed 28 August, 2017.

Padma, V., Anand, N. N., Gurukul, S. S. et al. (2015). Health problems and stress in Information Technology and Business Process Outsourcing employees. *Journal of pharmacy & bioallied sciences*, 7(Suppl 1), S9–S13. doi: 10.4103/0975-7406.155764.

Papola, T. S., and Pais, J. (2007). Debate on labour market reforms in India: A case of misplaced focus. *The Indian Journal of Labour Economics*, 50(2), 61-65.

Parthasarathy, B. (2004). India's Silicon Valley or Silicon Valley's India? Socially embedding the computer software industry in Bangalore. *International journal of urban and regional research*, 28(3), 664-685.

Parthasarathy, B. and Aoyama, Y. (2006). From software services to R&D services: local entrepreneurship in the software industry in Bangalore, India. *Environment and Planning*, 38(7), 1269-1285.

Pattenden, J. (2016). *Labour, state and society in rural India: A class-relational approach*. Oxford: Oxford University Press.

Peck, J. (1990). Circuits of capital and industrial restructuring: Adjustment in the Australian clothing industry. *Australian Geographer*, 21(1), 33-52.

Penfold (2009). Off-Shored Services Workers: Labour Law and Practice in India. *The Economic and Labour Relations Review*, 19(2), 91–106.

Phadnis, S. and Ayyar, R. (2017). IT industry slows, Indian companies ready for large layoffs. *Times of India*. Oct 31, 2017. Available at – <https://timesofindia.indiatimes.com/business/india-business/technology-giants-prepare-for-layoffs/articleshow/58585806.cms>. Last accessed June 12, 2018.

Piketty, T. (2014). *Capital in the 21st Century*. Cambridge, MA: Harvard University Press.

Prasad, M. (1998). International capital on Silicon Plateau: work and control in India's computer industry. *Social Forces*, 77(2), 429-452.

Raghavan, A. and Gupta, A. (2012). *Software Companies are 'Factories' as per New Court Ruling*. Available at - <https://www.employmentlawalliance.com/firms/trilegal/articles/software-companies-are-factories-as-per-new-court-ruling>. Last accessed June 12, 2018.

Rainnie, A., Herod, A., and McGrath-Champ, S. (2011). Review and positions: Global production networks and labour. *Competition & Change*, 15(2), 155-169.

Ramaswamy, E.A. (2000). *Managing Human Resources*. Oxford University Press: New Delhi

Ramioul, M., and De Bruyn, T. (2008). Towards strategies for making offshore outsourcing economically and socially sustainable. *Work Organisation, Labour and Globalisation*, 2(1), 117-132.

- Ramioul, M. and Vroom, B. (2009). *Global Value Chain Restructuring and the Use of Knowledge and Skills. Work Organisation and Restructuring in the Knowledge Society*. WORKS Project, Leuven: HIVA-KUL.
- Ramioul, M., Huws, U. and Kirschenhofer, S. (2005). Offshore Outsourcing of Business Services. Dublin: European Foundation for the Improvement of Living and Working Conditions.
- Ramsay, H. (1985). What is participation for? A critical evaluation of labour process' analyses of job reform. In D. Knights, H. Wilmott and D. Collinson (eds.) *Job Redesign: Critical Perspectives on the Labour Process*. Aldershot: Gower.
- Reich, R. (1991). *The work of nations: Preparing ourselves for 21st-century capitalism*. London: Simon and Schuster.
- Remesh, B. P. (2004). Cyber Coolies in BPO: Insecurities and Vulnerabilities of Non-standard Work. *Economic and Political Weekly*, 39(4), 492–497.
- Ritzer, G. (1998). *The McDonaldisation thesis: explorations and extensions*. London: Sage.
- Rodrik, D. (1997). Sense and nonsense in the globalization debate. *Foreign Policy*, 107, 19-37.
- Rodrik, D. (2016). Premature deindustrialization. *Journal of Economic Growth*, 21(1), 1-33.
- Roy, C., Scholarios, D., and Taylor, P. (2017). “The Recession Has Passed but the Effects Are Still with Us”: Employment, Work Organization and Employee Experiences of Work in Post-crisis Indian BPO. In Noronha, E. and D’Cruz, P. (eds.) *Critical Perspectives on Work and Employment in Globalizing India*. Singapore: Springer.
- Rubery, J., Ward, K., and Grimshaw, D. (2005). Time, work and pay: Understanding the new relationships. *Decent working time: New trends, new issues*. Geneva: ILO.
- Rubin, H. and Rubin, I. (1995). *Qualitative interviewing: The art of bearing data*. Thousand Oaks: Sage.
- Russell, B., and Thite, M. (2008). The next division of labour: work skills in Australian and Indian call centres. *Work, Employment and Society*, 22(4), 615-634.
- Sako, M. (2006). Outsourcing and offshoring: implications for productivity of business services. *Oxford Review of Economic Policy*, 22(4), 499-512.
- Sallaz, J.J. (2014). Labor and Capital in the Twenty-First Century: Rereading Braverman Today. *Employee Responsibilities and Rights Journal*, 26(4), 299-311.
- Sandhu, A. (2006). Why Unions Fail in Organising India's BPO-ITES Industry. *Economic and Political Weekly*, 41(14), 4319–4322.
- Sarkar, S. (2008). Trade unionism in Indian BPO-ITeS industry-insights from literature. *Indian Journal of Industrial Relations*, 44(1), 72-88.

- Sarkar, S. and Mehta, B.S. (2010). Labour market patterns and trends in India's ICT sector. In Posthuma, A. and Nathan, D. (eds.) *Labour in Global Production Networks in India*. New Delhi: Oxford University Press.
- Sayer, A. (1994). *Methodology in Social Science: A Realist Approach*, London: Routledge.
- Sayer, A. (2000). *Realism and Social Science*, London: Sage.
- Sayer, A. (2004). 'Why Critical Realism'. In Fleetwood, S. and Ackroyd, S. (eds.) *Critical Realist Applications in Organisation and Management Studies*. London: Routledge
- Schwandt, T. A. (1997). *Qualitative inquiry: A dictionary of terms*. Thousand Oaks: Sage Publications.
- Seidman, I. (2006). *Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences*. New York: Teachers College Press.
- Selwyn, B. (2012). *Workers, state and development in Brazil: Powers of labour, chains of value*. Manchester: Manchester University Press.
- Sengupta, S. and Gupta, A. (2012). Exploring the Dimensions of Attrition in Indian BPOs. *International Journal of Human Resource Management*, 23(6), 1259–1288.
- Sewell, G. (1998). The discipline of teams: The control of team-based industrial work through electronic and peer surveillance. *Administrative science quarterly*, 43(2), 397-428.
- Sewell, G. (2005). Nice work? Rethinking managerial control in an era of knowledge work. *Organization*, 12(5), 685-704.
- Shyam Sundar, K.R. (2010). Emerging Trends in Employment Relations in India. *Indian Journal of Industrial Relations*, 45(4), 585-595.
- Shyam Sundar, K. R. (2015). *Labour Law and Governance Reforms in India: Some Critical Perspectives*. New Delhi: Synergy Books India.
- Silverman, D. (2011). *Interpreting Qualitative Data: A Guide to the Principles of Qualitative Research*. London: Sage.
- Smith, A., Rainnie, A., Dunford, M., Hardy, J., Hudson, R., and Sadler, D. (2002). Networks of value, commodities and regions: reworking divisions of labour in macro-regional economies. *Progress in Human Geography*, 26(1), 41-63.
- Smith, C. (1989). Flexible specialisation, automation and mass production. *Work, Employment and Society*, 3(2), 203-220.
- Smith, C. (2005). Beyond convergence and divergence: Explaining variations in organisational practices and forms. In Ackroyd, S., Batt, R., Thompson, P. and Tolbert, P. (eds.) *The Oxford Handbook of Work and Organisation*. Oxford: Oxford University Press
- Smith, C. (2006). The double indeterminacy of labour power: Labour effort and labour

- mobility. *Work, Employment and Society*, 20(2), 389-402
- Smith, C. (2008). Work organisation within a dynamic globalising context: A critique of national institutional analysis of the international firm and an alternative perspective. In Smith, C., McSweeney, B. and Fitzgerald, R. (eds.) *Remaking Management: Between Global and Local*. Cambridge: Cambridge University Press.
- Smith, C. (2010). Go with the flow: labour power mobility and labour process theory. In Thompson, P. and Smith, C. (eds.) *Working Life: Renewing Labour Process Analysis*. London: Palgrave.
- Smith, C. (2015). Continuity and change in labor process analysis forty years after labor and monopoly capital. *Labor Studies Journal*, 40(3), 222-242.
- Smith, C. (2016). *Rediscovery of the labour process*. In Edgell, S., Gottfried, H., and Granter, E. (eds.) *The Sage Handbook of the Sociology of Work and Employment*. London: Sage.
- Smith, C. and Elger, T. (2014). Critical realism and interviewing subjects. In Edwards, P.K., O'Mahoney, J. and Vincent, S. (eds.) *Studying Organizations Using Critical Realism*. Oxford: Oxford University Press.
- Smith, C., and Meiskins, P. (1995). System, society and dominance effects in cross-national organisational analysis. *Work, employment and society*, 9(2), 241-267.
- Smith, C., and Thompson, P. (1998). Re-evaluating the labour process debate. *Economic and Industrial democracy*, 19(4), 551-577.
- Sood, A., Nath, P., and S. Ghosh (2014). Deregulating Capital, Regulating Labour: The Dynamics in the Manufacturing Sector in India. *Economic and Political Weekly*, 49(26-27), 58-68
- Sternberg, E. (1993). Transformations: the eight new ages of capitalism. *Futures*, 25(10), 1019-1040.
- Standing, G. (2011). *The precariat: A dangerous new class*. London: Bloomsbury Academic
- Steinberg, M. W. (2003). Capitalist development, the labor process, and the law. *American Journal of Sociology*, 109(2), 445-495.
- Stiglitz, J. (2012). *The price of inequality*. New York: Penguin Books.
- Stinchcombe, A. L. and Heimer, C. A. (1988). Interorganizational relations and careers in computer software firms. *Research in the Sociology of Work*, 4, 179-204.
- Storey, J. (1980). *The challenge to management control*. London: Kogan Page.
- Storey, J. (1983). *Managerial prerogative and the question of control*. London: Routledge
- Storey, J. (1985a). The means of management control. *Sociology*, 19(2), 193-211.
- Storey, J. (1985b). Management control as a bridging concept. *Journal of Management*

*Studies*, 22(3), 269-291.

Streeck, W. (1997). German capitalism: does it exist? Can it survive? *New political economy*, 2(2), 237-256.

Streeck, W. and Thelen, K. (2005) (eds.). *Beyond Continuity: Institutional Change in Advanced Political Economies*, Oxford: Oxford University Press.

Taskin, L. and Van Bunnem, G. (2015). Knowledge management through the development of knowledge repositories: towards work degradation. *New Technology, Work and Employment*, 30(2), 158-172.

Taylor, F.W. (1914). *The Principles of Scientific Management*. New York: Harper.

Taylor, F. W. (1947[1914]). *Scientific Management, Comprising Shop Management, the Principles of Scientific Management and Testimony before the Special House Committee*. New York: Harper & Row.

Taylor, P. (2010). The Globalization of Service Work: Analysing the Transnational Call Centre Value Chain. In Thompson, P. and Smith, C. (eds.). *Working Life – Renewing Labour Process Analysis*, Basingstoke: Palgrave.

Taylor, P. and Bain, P. (1999). An assembly line in the head: work and employee relations in the call centre. *Industrial Relations Journal*, 30(2), 101-117.

Taylor, P. and Bain, P. (2004). Call centre offshoring to India: the revenge of history? *Labour & Industry: a journal of the social and economic relations of work*, 14(3), 15-38.

Taylor, P. and Bain, P. (2005). 'India calling to the far away towns' the call centre labour process and globalization. *Work, employment and society*, 19(2), 261-282.

Taylor, P. and Bain, P. (2006). Work organisation and employee relations in Indian call centres. In Burgess, J. and Connell, J. (eds.) *Developments in the Call Centre Industry*. London: Routledge

Taylor, P., and Bain, P. (2007). Reflections on the call centre — a reply to Glucksmann. *Work, Employment and Society*, 21(2), 349-362.

Taylor, P., Noronha, E., D'Cruz, P. and Scholarios, D. (2008). Employee voice and collective formation in the Indian ITES-BPO industry. *Economic and Political Weekly*, 43(22), 37-47.

Taylor, P., D'Cruz, P., Noronha, E., and Scholarios, D. (2014). 'From boom to where?': the impact of crisis on work and employment in Indian BPO. *New Technology, Work and Employment*, 29(2), 105-123.

Tejaswi, M.J. and John, S. (2008). IT goes for more working hours. *Times of India*. November 25, 2008, <https://timesofindia.indiatimes.com/business/india-business/IT->



- goes-for-more-working-hours/articleshow/3753106.cms. Last accessed 12 July, 2018.
- The Hindu (2016). *IT Employees free to form union: Labour Department*, June 9, 2016, Available at – <http://www.thehindu.com/news/cities/chennai/it-employees-free-to-form-union-labour-department/article8707435.ece>. Last accessed August 2, 2016
- Thompson, P. (1989). *The nature of work: An introduction to debates on the labour processes*. London: Macmillan
- Thompson, P. (1990). Crawling from the wreckage: The labour process and the politics of production. In Knights, D. And Wilmott, H. (eds.) *Labour Process Theory*. London: Macmillan
- Thompson, P. (2003). Disconnected capitalism: or why employers can't keep their side of the bargain. *Work, employment and society*, 17(2), 359-378.
- Thompson, P. (2010). The capitalist labour process: Concepts and connections. *Capital & Class*, 34(1), 7-14.
- Thompson, P. (2013). Financialization and the workplace: extending and applying the disconnected capitalism thesis. *Work, Employment & Society*, 27(3), 472-488.
- Thompson, P., and Newsome, K. (2004). Labour process theory, work, and the employment relation. In Kaufman, B.E. (ed.), *Theory and the employment relationship*. Champagne, IL: Industrial Relations Research Association.
- Thompson, P. and Smith, C. (2000). Follow the redbrick road: Reflections on pathways in and out of the labor process debate. *International Studies of Management & Organization*, 30(4), 40-67.
- Thompson, P. and Smith, C. (2009). Labour power and labour process: Contesting the marginality of the sociology of work. *Sociology*, 43(5), 913-930.
- Thompson, P. and Smith, C. (eds.) (2010). *Working life: renewing labour process analysis*. London: Palgrave Macmillan.
- Thompson, P. and Vincent, S. (2010). Labour Process Theory and Critical Realism, In P. Thompson and C. Smith (eds.) *Working Life: Renewing labour process analysis*. Basingstoke: Palgrave Macmillan.
- Thompson, P., Warhurst, C., and Callaghan, G. (2001). Ignorant theory and knowledgeable workers: Interrogating the connections between knowledge, skills and services. *Journal of Management Studies*, 38(7), 923-942.
- Touraine, A. (1971). *The Post-Industrial Society*. (Translated by Leonard F. X. Mayhew.) New York: Random House.
- Trusson, C., and Woods, F. (2017). 'An end to the job as we know it': how an IT

- professional has experienced the uncertainty of IT outsourcing. *Work, employment and society*, 31(3), 542-552.
- Tschang, T. (2001). *The Basic Characteristics of Skills and Organizational Capabilities in the Indian Software Industry*. Working Paper No.13, Tokyo: ADB Institute.
- TUAC (2004). *Trade, Offshoring of Jobs And Structural Adjustment: The Need For A Policy Response*. TUAC Consultations with the OECD Liaison Committee. Brussels: OECD.
- Upadhy, C. (2007). Employment, exclusion, and 'merit' in the Indian IT industry. *Economic and Political Weekly*, 42(20), 1863–1868.
- Upadhy, C. (2009). Controlling offshore knowledge workers: Power and agency in India's software outsourcing industry. *New Technology, Work and Employment*, 24(1), 2-18.
- Upadhy, C. and Vasavi, A.R. (eds.) (2012). *In an outpost of the global economy: Work and workers in India's information technology industry*. New Delhi: Routledge.
- UNCTAD. (2017). The role of the services economy and trade in structural transformation and inclusive development. Geneva: Trade and Development Board.
- Valenduc, G., Vendramin, P., Krings, B.J. and Nierling, L. (2008). *How restructuring is changing occupations? Case study evidence from knowledge-intensive, manufacturing and service occupations*, WORKS report, Leuven: HIVA-K.U.Leuven.
- Van Manen, M. (1990). *Researching lived experience*. Albany: SUNY Press.
- Vidal, M. (2011). Reworking postfordism: Labor process versus employment relations. *Sociology Compass*, 5(4), 273-286.
- Vidal, M. and Hauptmeier, M. (2014). Comparative Political Economy and Labor Process Theory: Towards a Synthesis. In M. Vidal and M. Hauptmeier (eds.) *Comparative Political Economy of Work*. London: Palgrave Macmillan.
- Warhurst, C., and Thompson, P. (2006). Mapping knowledge in work: proxies or practices? *Work, employment and society*, 20(4), 787-800.
- Warhurst, C., Thompson, P. and Nickson, D. (2008). Labour Process Theory: Putting the Materialism Back into the Meaning of Service Work. In Korzcynski, M. and MacDonald, C. (eds.), *Service Work: Critical Perspectives*, London: Routledge.
- Wegge, J., Dick, R.V., Fisher G.K., Wecking, C. and K. Moltzen. (2006). Work motivation, organisational identification, and well-being in call centre work. *Work & Stress*, 20(1), 60-83.
- Weis, L., and Fine, M. (2000). *Speed bumps: A student-friendly guide to qualitative research*. New York: Teachers College Press.
- Williams, G., Davies, S., and Chinguno, C. (2015). Subcontracting and labour standards:



Reassessing the potential of international framework agreements. *British Journal of Industrial Relations*, 53(2), 181-203.

Winslow, C.D. and Bramer, W.L. (1994). *Future Work: Putting Knowledge to Work in the Knowledge Economy*. New York: Free Press

World Bank (2002). *Global economic prospects and the developing countries 2002: making trade work for the world's poor*. Washington DC: The World Bank

World Bank (2011). *The Global Opportunity in IT-Based Services Assessing and Enhancing Country Competitiveness*. Washington DC: The World Bank

WTO (2015). *International Trade Statistics 2015*. WTO: Geneva

Xiang, B. (2007). *Global "body shopping": an Indian labor system in the information technology industry*. Princeton: Princeton University Press.

**END**

Every year is getting shorter, never seem to find the time.  
Plans that either come to naught or half a page of scribbled lines...  
The time is gone, the song is over,  
Thought I'd have something more to say.

Pink Floyd, 'Time', 1973 CE