

CHAPTER 4

Alienation and Work: ICT Professionals

4.1 Introduction

This chapter explores the effectiveness of Marx's theory of alienation in excavating and bringing to the surface the experiences of ICT professionals to create a narrative enabling them to articulate their working lives as they see them, to place that narrative within the general trends evident within the sector and to theorise their experiences. The ambition is to focus on what Lukács calls totality, mediation and immediacy (Lukács 1971). The chapter opens by describing the participants of this setting and then goes on to briefly consider the meaning of professionalism. It then reviews the current research concerning ICT professionals before outlining the key characteristics that define the IT industry to provide the overarching environment within which the ICT professionals who participated in this study work. It then presents the findings of research looking at the work experience of a group of ICT practitioners.

The ICT participants worked for a multinational ICT company, ranked in the top ten of computer manufacturers, employing 150,000 workers worldwide. It offers a range of services including outsourcing facilities, database management and the provision of servers running on various platforms to customers which include large multinational enterprises, governments and public sector organisations in over 100 countries. A structural characteristic of this type of organisation is the allocation of work between separate divisions, with each main economic centre and service functioning semi-independently under the overall umbrella of the parent company. Like many ICT enterprises, the company had been adversely impacted by the economic crisis of 2008 and sought to implement a range of ameliorating strategies, including off- and near-shoring, and expanding the internal market. The economic crisis provided an additional thrust to trends already evident such as the commoditisation of its products as opposed to the development of products specifically tailored to the needs

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of a customer, thus accelerating the deskilling of the ICT professionals. The nature of the industry demands that the company must proclaim itself to be innovative, seeking to attract customers with its reference to implementing ICT systems that can anticipate developments in the sector. Participants for this part of the study included those from a wide range of ICT activities such as project managers, database software engineers, asset administrators, system design and development engineers, risk management experts and quality control specialists. The group was a mixture of women and men with ages ranging from mid-thirties to early sixties. All the participants were involved with their trade union and described themselves as being experienced users of ICT.

4.2 The Meaning of Professionalism

There is no common definition for the 15 million people who work as ICT professionals in the OECD countries or for the millions of others who work elsewhere (OECD 2012). In 2017 8.4 million persons worked as ICT specialists across the EU-28. As well as the observance of professional standards and so forth, Cruess et al. (2000) note the social contract between society and the professional, and the possible vocational nature of the work encompassing an adherence to notions of morality and virtue. Looking at consultancy work, Furusten (2013) tracks the emergence of commercialised professionalism which is regarded as the new professionalism and there is a tension between professionalism and commercialism as well a trend away from more traditional forms of professionalism towards the managerial professional model. Membership of the British Computer Society Chartered Institute for IT is open to anyone who has five years relevant experience in the industry covering ‘any aspect of building, maintenance, management or operation of IT or in teaching or training (at degree level) related to the knowledge and skills appropriate to that activity’ (BCSCIIT 2013). Other associations widen the notion of professionalism to encompass non-technical attributes. Canada’s Association of Computer Professionals (CIPS) moves beyond a reference to technical skills and describes an IT professional as someone working in IT but who also has a commitment to an ethical code of practice (CIPS 2009). The development of codes of ethics or professional conduct is evidence that the notion of professionalism sees ICT practitioners as individuals rather than part of a collective body thus placing responsibility for professional behaviour on the individual. The participants in this part of the research were not filtered by reference to any formal adherence to codes of ethics or conduct: the emphasis was on their technical capabilities and responsibilities.

4.3 Current Research on ICT Professionals

Study of ICT professionals and engagement is generally absent as a focus of scholarly research (Pittenger, Perelli and Somers 2012). The limited studies

undertaken focus on, for example, resolving problems such as employment turnover of ICT professionals or how to control their activity (Ramos and Joia 2013). This limited amount of research is surprising given that so much has been written about the importance of the technology to so many aspects of human endeavour. Further, when such research is undertaken, it frequently takes a quantitative approach using online questionnaires or a mixture of quantitative or qualitative methods. The aspirations, perspectives and thoughts of the ICT professionals are reduced to quantitative analysis with evidence taking the form of levels of significance, standard deviation statistics and model coefficients and conclusions focusing on 'snapshot statistical relationships' (Tong et al. 2013: 29).

There are some exceptions to this trend, such as the series of semi-structured interviews with ICT professionals based in Norway (Rasmussen and Johansen 2004) but even here the focus of the study was to argue that by giving professionals some sense of autonomy, it was possible to get them to work long hours, often with unpaid overtime. A significant exception is the research undertaken by Xiang into the practice of 'body shopping' where he carried out extensive interviews with IT professionals in India (Xiang 2007). Interestingly, where the focus is on the experience of women working in ICT, the research methodology tends to include extensive use of in-depth interviews (Clerc and Kels 2013).

4.4 The State of the IT Industry

Gartner reports that global IT spending could total \$3.9tn in 2020, an increase of 3.4% on 2019 with the shift of enterprise IT spending from traditional (non-cloud) offerings to new, cloud-based alternatives continuing to drive growth in the enterprise software market. In 2019, the market forecast was \$456bn, up 7.1% with an anticipated 10.5% increase in 2020 (Gartner 2020). Additional key drivers are enterprise software and ICT services with an emphasis on replacing direct ownership of ICT with service provision. Despite the recent growth in IT expenditure, the overall context continues to be one dominated by a global slowdown in economic development fuelling the need to cut costs leading to the need to increase IT spending further yet still to cut costs. Further, as IDC reports, there is a narrowing of focus by businesses and consumers in traditional tech spending on just four platforms: cloud, mobile, social and big data/analytics while the expansion of new technologies such as AI, robotics and AR/VR (augmented reality/virtual reality) will represent a significant investment (IDC 2018). The ICT industry has been and continues to be intensely competitive.

Regional and sectoral variations exist within this process which is also contradictory since concurrently there has been an increase in cooperation between providers of ICT (Pellegrin-Boucher, Le Roy and Gurău 2013). Further, experiences differ within the industry between companies that provide ICT services and those concerned with manufacture. The former employs significantly more ICT professionals than the latter in advanced economies of the West and is the

industry's most dynamic segment as witnessed by its relatively more positive recovery from the crisis of 2008. The provision of ICT professionals from developing countries for service contracts in the more advanced economies (under the odious name, 'body shopping') is a significant growth sector where businesses loan out the technical expertise of an organisation's employee. It enables companies to access skilled individuals or a team of professionals to work remotely or on the business's own premises, in conjunction with its existing teams (Coles 2012). Initially directed to ICT experts from countries like India, it is increasingly considered an attractive option for ICT companies based in America and Europe (Coles 2012). The emergence and rapid growth of body shopping emphasises the profoundly shifting nature of ICT work particularly so when it occurs within a fragile and uncertain economic context (Roberts 2019). The economic fallout from Covid-19 is likely to have a further adverse impact on the technology sector. It is within these overarching adverse conditions that ICT professionals ply their trade. Yet, rarely, if ever, does research encourage ICT professionals to come together to discuss and reflect upon their experiences in a collective environment. In short, in most of the research the voice of the professional is refracted, perhaps distorted, through the prism of the researcher and she is treated as an isolated individual. Having contextualised this setting in terms of current research, the discussion will now briefly reprise the categories of alienation outlined by Marx.

4.5 The Alienated Working Environment of the ICT Professional

Marx identified two key drivers of alienation arising from commoditisation of labour namely: alienation from the products and processes of labour, and the approach adopted for this case was focused on these aspects that generate alienated relationships. In the following discussion the gender of the participant is identified by F for female and M for male. This is followed by their job title. The context of the comment is identified as GD for group discussion and II individual interview. Working at the very heart of the industry, the ICT professionals who participated in this aspect of this research were extremely aware and articulate about their position in the work process and they frequently talked about the commoditisation of the work process. In this context, commoditisation means the breaking down of the work process into discrete elements that can be reused in different projects. It involves a process where software tools make work repeatable and take out the variability and risk. For this company, work derives from external and internal requests. For external work, project tendering is used to obtain business for the company and the company's sales force determines the job scope and cost, and creates and makes the pitch for a contract. *'...people at a high level... design and cost it and... if the contract is won there is work to do to develop something we could deliver... a 100*

people (could be) working for a year before a contract is signed... we could be working on something that is never made' (M4 Systems Designer GD). Another participant added '*... assignments come from the customer. They come down to us...'*' (M1 Project Manager GD). From the very start of the process, ICT professionals are denied even minimal control over which product may or may not be developed. For internal work, requests are generated by managers. Either way, the requests are channelled through to the ICT professionals via management structures. This is reflected in job descriptions since '*within the company there are... people with jobs where the managers give them stuff to do and... move you around on different tasks... the company works on an assignment basis'*' (M4 Systems Designer GD).

ICT professionals do not have a real choice about what type of project they work on. '*We do... what the contract says... forget ethics and forget your personal opinion or personal feelings... That is your job and you do it'*' (M1 Project Manager GD). The participants recognise their lack of power over how the outcomes are used. '*I don't have any control over that at all other than if we are aware there may be some ethical issues that we might take a stand on'*' (M2 Software Engineer II). Another commented that '*... I have no control over what might be stored in... a cloud provision, only... what types of data it might be'*' (M4 Systems Designer II). Talking about a specific project, one participant said, '*I have no control over how it is used... a complete damp squid would be if we introduced (video conferencing) and people continued to (use) motorways'*' (M1 Project Manager II).

As the following quote indicates, a further problem arises from changes arising from external pressures on the ICT sector such as the drive towards separating so-called commodity functions from core activities.

When I joined the company... there was little assignment work. The change has come from...being a proper IT company into a service company... Most of the industry is going through that... We have also changed from providing propriety products... to an industry being very much standardised and commoditised type of technologies... our skills have become standardised as well (M4 Systems Designer GD).

The provision of an IT service has far reaching implications for the professionals who are involved in the work. The development of, for example, physical infrastructures employing cloud technologies (constructed using standardised and commoditised IT elements alongside IPR) results in a situation whereby the commodities ICT professionals work on create an adverse impact on the way they work. They are effectively undermining their own skills and professionalism. As one of the participants commented, '*companies can use this as a pretext to reduce pay and benefits... to lower the status of the job... people are being squeezed quite severely'*' (M1 Project Manager II). Continuing the same theme another added, '*In a sense we produce*

our employers' means of production in developing the infrastructure and services, then deploy those means of production to deliver services to customers' (M4 Systems Designer II). Having looked at the problem of control over outcomes, the discussion will now shift to look at the work process as experienced by ICT professionals.

4.6 Control of the Work Process

This section opens by looking at the manner work is allocated within the company and is followed by an examination of the way in which the work process is organised. As part of this discussion reference will be made to the impact the economic crisis of 2008 had on the industry and to more recent innovations, such as lean IT, as they apply to the working environment of IT professionals. This discussion relates to Marx's theory of alienation since he talks about the control of process as well as product being a critical element in this condition and touches upon the issues he raises when he refers to the real subsumption by capital of the working process.

Assignment work demands an extended cooperative team effort. *'You will get a whole lot of different people involved in assignment and project work'* (F1 Asset Manager GD). Mention has already been made of the way in which the work is allocated via the resource/assignment manager. For the professionals working on assignments it is *'like being a contractor, where you work on a series of assignments from projects or customers and it is people running [the project] that who give you stuff to do'* (M4 Systems Designer GD). Elaborating on this process, another participant said that when a project is proposed *'they need a project manager and a service manager or a customer solution architect and...they will go to different parts of the company that have these resources and say this is what we need'* (M1 Project Manager GD) and the assignment manager will *'deal out or offer assignments as they come along to a smallish team of project managers'* (M2 Software Engineer). This is an intensely developed internal division of labour which is a crucial contributor to Marx's view of alienation.

Details of projects and associated requirements are normally advertised on the company's intranet making it seem that IT professionals can select the projects they prefer. The reality is different: *'... people do... pick what they would like to do but... pressure (is) put on them by line managers to do a certain one (job)... In theory you can pick... your own assignment but in practice you get pressurised to do certain work'* (F1 Asset Manager GD). For internal service work, sometimes work allocation is far from clear: *'... in theory you are supposed to have objectives that give you an idea of what you are supposed to do but I don't have anything and neither does my manager... it is very disorganised'* (F2 Quality Control GD).

The demands of assignment projects also require tasks to be clearly itemised. This is common practice with consultancy and service project work meaning

professionals detail the scope of work and the timeframe within which it is to be completed. Since clients demand evidence tying work completed to invoices, a very tight record of day-by-day and hour-by-hour allocation of work is required. In this company, this process is increasingly being applied internally activity. Previously, departments billed on actual time taken for a job but now the firm wants:

to move to fixed price contracts where the department would be paid the same whether it takes a day or a fortnight [this means] increased supervision... more stats on comparative times... Managers ask why that job is taking twice as long as a similar one (M4 Systems Designer II GD).

The description here is one of increased scrutiny of the professional to get greater control over what s/he does and the time it takes to do it.

It might be thought that project managers would have, in this environment, a significant degree of latitude over how they handle their tasks. However, as the following quote indicates, orthodox project methodology, in this instance Prince2 (a structured project management method), dominates and controls the work process: *'Project managers follow Prince2... project methodology (which) is a pretty intense methodology to follow and... most of our customers... want (it) ... we have to follow that from the very beginning of the project...'* (M1 Project Manager GD).

The same highly prescriptive and constricting boundaries reside in work processes of professionals working on internal IT requests where those involved *'in delivering a service follow the ITIL methodology [Information Technology Infrastructure Library]. On our company intranet there are methodologies (and competencies) for just about every role there is in the company'* (M1 Project Manager GD). This is the imposition of highly organised frameworks laying down common guidelines for each skill set to which each professional must adhere. External pressures resulting from the nature of the industry has meant that the ICT firm concerned *'has definitely accelerated and driven reorganisation internally with a push towards commoditisation and standardisation with the use of templates and all that kind of thing'* (M4 Systems Designer II).

The economic crisis of 2008 intensified competition within the IT sector and while there has been pick-up in ICT spending following the significant cuts experienced in 2008, demand for IT products is uneven with some technologies becoming rapidly obsolete with customers looking for the cheapest but not always the most effective option when planning to overhaul or modify existing IT systems. Further, the focus is very much on cloud computing. Previously, *'... you could have three/four years where every year the government would...want enhancements to existing systems or new IT stuff (which would mean)... six figure (contracts)'* (M2 Software Engineer II). This type of work has significantly reduced.

The structure of the contracts undertaken by the company has also altered. *'Before, the government would put out multimillion-pound contracts... What they are... doing (now) is to tender for relatively small chunks of business. In my own work, projects are being shelved or put on ice'* (M1 Project Manager II). These tendencies have multiple adverse impacts on the work of the ICT professional, with a negative influence on the skill base, the increasing insecurity of employment, a continuous and rapid churn of technologies, and increasingly interventionist management techniques.

Although mention has already been made of the standardisation and commoditisation of the industry, it is worth exploring this in more detail. The participants were acutely aware of how the change in the industry affects their skill level.

We (are) an industry (based on) very standardised and commoditised type of technologies... so our skills have become standardised as well. Whereas twenty years ago people had a niche skill with individual negotiating bargaining power, we are now moving rapidly towards a situation... where you will have more intense competition both internally and externally, where companies just compare on price and this reflects on how they treat people (M4 Systems Designer GD).

This view is supported by another participant when he says that until recently *'there seemed to be immense scope for people to show creativity... the company is developing standard offerings which have dumbed-down... you could construe [this] as a drive to the bottom'* (M1 Project Manager II).

The professionals are also aware that as their skill level is jeopardised, the company has reduced its commitment to encouraging staff to update existing skills or develop new skill sets. *'Once upon a time... there was a lot more support from the company, who would take an active role in developing... careers... this had been whittled away'* (M5 IT support GD). People with legacy skills are now made redundant and the company *'hire people with new skills that they require to move the technology on. This is preferable to redeveloping the skills of the existing workforce'* (F2 Quality Assurance GD). As another participant records, *'I used to have a career development manager... now you have to battle against the business imperatives'* (M2 Software Engineer GD).

There are also adverse consequences on conditions governing terms of employment which flow from the intensely competitive nature of the IT industry, the way the industry is structured, and the tendering process used to award contracts. Work has been transformed into fragmented, smaller bolt-on chunks with projects increasingly and frequently being renewed. Contracts tend to be won by the large IT companies and large contracts can repeatedly involve multiple companies. While there has been an increase in smaller types of contract, large-scale contracts, such as Fujitsu's 60 million euro, six-year

contract with credit management services provider, Lowell, are still in play (Fujitsu 2019).

One participant talking about large contracts describes it thus: *'Many... are won by consortiums where big IT companies are competing with each other and being partners... they are partners, they are competing... because they want to win more work from the client'* (M4 Systems Designer GD). Supporting this view, another professional adds:

When the NHS decided to split the country into five clusters and each cluster had its own IT, X firm was involved in all the clusters. We were involved with X on one or two of the clusters on a bid but they also chose to bid on that cluster by themselves. So at one point we were working with them but we had to be careful with our company secrets and confidentially and on the other hand they were bidding against us for the same work (M1 Project Manager GD).

Another participant provides further evidence in support: *'The contract I am working on now provides services for XX and another company is providing a similar service... we are now...reallocating work... (the other ICT company) is taking bits [of the contract] and we are giving them bits...'* (M6 Network Engineer GD). This means those employed on external assignment contracts work in a close but contradictory relation with a direct competitor because they are supporting and developing the same systems.

When an existing contract is lost to a competitor, it does not necessarily mean that the professionals working on the ground change: they can be simply transferred to the new provider. This process is referred to as being TUPED which refers to the Transfer of Undertakings (Protection of Employment). TUPE regulations maintain employees' terms and conditions of employment when a business is transferred from one owner to another. TUPE transfers are widespread in the industry and one professional says:

Once upon a time TUPE didn't exist anyway, but... contracts are being won and lost and, in our company, the HR are, well, there are a lot of problems here and there is a lot of job insecurity. If you are told you are in a TUPE situation from your current employer to a new employer, then it is good that you are not in a redundancy situation but it can be damn close to that if your potential new employer is only able to offer a change of location which is well beyond commuting distance (M1 Project Manager GD).

While the TUPE process is a general experience for most ICT professionals in the UK working on medium- to large-scale contracts, TUPE safeguards are not applicable for short-term contracts thus leaving these professionals in a very

precarious position (Public Sector People Managers' Association 2013). The professionals are extremely sensitive to the problems associated with transfers as *'it could well be that someone is TUPed out of our company because we have lost the contract and... we could win the contract back and they will be TUPed back in again'* (M2 Software Engineer GD).

Aside from the insecurity arising from switching firms, the change of employer can result in a dramatic change of location: *'There was one case recently where the change of location was to India'* (M4 Systems Designer GD). This may be an extreme case, but it is indicative of the types of pressures and choices ICT professionals have to deal with on a regular basis when projects are up for renegotiation or are taken over by a different company. It is also an example of the complete control their employer has over these professionals. The professionals working on assignment contracts are often required to travel, sometimes quite considerable distances and often for a long time. One participant recalled a colleague who lived locally but *'was sent to South Wales for two years, came back for a short while and then was sent overseas'* (M1 Project Manager GD). On occasion it is possible to work remotely, as in the case of server support, but it is common for the client to demand the ICT professional be on-site even if she thinks her continual presence is not required. As one participant put it, *'this often happens because the customer... demands we work on site rather than remotely'* (M2 Software Engineer).

Mention has already been made above about how the change in an employer arising from contract tendering can have travel implications. The need to travel has obvious ramifications far beyond the immediate work context and in talking about his work a participant said he was *'going through all the kinds of things that we have talked about, the stress, the pressure and working away from home which is crap'* (M6 Network Engineer GD). There are adverse impacts for an ICT professional who does not want to work away from home because of a range of commitments, because she is perceived negatively by those seeking to put a team together for a project. Project managers for external assignments *'do not want people who do not want to travel'* (F2 Quality Assurance GD).

4.7 Relationships with Professionals Working for Other Companies

The following quote indicates how the constant shift in the ownership of the contract to deliver a system has a stressful impact on the way professionals relate to others from other companies:

If our company takes over the contract, we say to the people working for the other company who are now working for us, ok, this is our process.

We then try to hand something over to those working in the other company. They say, that doesn't look right, that is not the way we do things and you will have to do it again or whatever and there is all that frustration. What happens is that you start to get frustrated with someone else who is trying to follow a process in their job and you are trying to follow a process in your job and then friction and conflict happens and then someone has to come along and bash heads together and work out a common process (M6 Network Engineer GD).

This results in adverse impacts on the interpersonal relations between ICT professionals: *'... each group has its own interests and not necessarily working to the customer's benefit. You can... get a situation where there is a main competitor and our company is a sub-contractor'* (M6 Network Engineer GD). *'So you also get the blame game where each other says that was the other's fault'* (M1 Project Manager GD). Another participant adds: *'This becomes political... you are always worried that if you are talking to someone you are going to get it in the neck for having caused a problem with the partner, supplier, customer or whoever'* (M4 Systems Designer GD). This can have quite immediate and significant consequences and one participant describes an incident where he *'was working at a client and because of a slight misunderstanding in our work, the primary contractor said I don't want this gentleman on site anymore. Within a week I was gone'* (M1 Project Manager GD). This experience fosters a sense of fear that arises *'because the blame game is absolutely central to these relationships'* (M4 Systems Designer GD). *'That adds to the stress in that you can't even sneeze the wrong way for fear of being let go of a particular piece of work'* (M1 Project Manager).

4.8 Re-engineering the Work Process

The intense competition and the concomitant continual churn of project contracts and technologies have led the main ICT companies to re-engineer working methods. Exploring these developments is helpful since they greatly influence the work experience of these professionals and provides insights into the management practices of medium- to large-scale ICT companies. A recent trend within the IT sector is to look towards manufacturing for configuring the workspace to mirror that of a production line. As one of the participants relates that *'several people will be doing different things at the same time on the same work. There are dependencies within them and that fits the production line analogy... things taken from manufacturing like lean and just-in-time'* (M4 Systems Designer email exchange). This is an interesting comment because it implies the IT sector, while being perceived as a cutting-edge industry concerning product, was also seen as an industry lagging behind other sectors in terms of its work process engineering. Hence the need for organisations to apply

more up-to-date production line techniques to improve performance and to embrace notions of standardisation and commoditisation. Since much of the work undertaken in this sector uses networks, it is valid to describe this process as a networked production line.

Events, such as the annual European Lean IT Summits, are evidence of the strength of these developments which increasingly limit the possibilities for the professional working in this environment to develop, let alone follow, a preferred work process even if that was deemed, by ICT professionals, to be more efficient and more suitable to an individual client's needs. The process of de-skilling and the expansion of bolt-on components usable in multiple conditions, creates a demand for fewer, more highly trained professionals to push through these changes. There is evidence to support the view that in the short-to medium-term future, the sector is likely to experience the development of a high number of relatively low-grade deliverers of commoditised, standardised components developed and managed by a much smaller, but still substantial, number of innovators and highly skilled managers. This process is more than just the development of technique. It is an example of processes involved with the transformation of working practices where it is impossible to roll-back changes. Having looked at several issues arising from the way work is organised, the discussion will now shift to consider how the work is managed.

4.9 The Management

Work processes are mediated through management structures. In this particular company, the role of the resource manager is critical within the process of assignment working and they *'control what is on the list of assignments and they make sure people get assigned to them... they also put pressure on people ... and put forward people for assignments that they (the professionals) have not even been told about sometimes'* (F1 Asset Manager GD). All the participants concurred with the comment that *'The reality is that the assignment manager is responsible for making sure the job gets done and couldn't give a monkeys' about the people working for them'* (M4 Systems Designer GD). This method of allocating resources allied to the pressure to get the job done, impacts on the choices made by assignment managers.

There are managers... who have a tendency not to want people in their organisation that have things like childcare or any caring responsibilities or any health problems or part-time hours because this causes restrictions on what kind of work they can do. They do not want people who don't want to travel or who say they want to do certain types of work (F2 Operational Acceptance GD).

This work process requires a complex and resource-consuming internal manager structure involving line managers, resource managers, project managers, information architects, delivery managers and an accounts team, reflecting several characteristics of this type of organisation. The array of managers directly influences the work of the ICT professional. *'I have at least three managers. One is a line manager, one is the assignment manager, and we also have a so-called career manager'* (M5 IT support GD). This view is supported by other participants who say, *'in the service desk we have... three managers at three different levels taking part in how we are managed, how we are appraised and monitoring what we do. We are micro-managed'* (F2 Operational Acceptance GD). One participant adds:

that will be different for different jobs as well... people who are told by their immediate line managers and then you have project managers... you may have the architect who will be asked to do things by the project manager, who may also be asked to do things by the delivery manager or customer or account team (F1 Asset Manager GD).

Not all the participants were critical of their immediate managers: *'I get on Ok with my managers, and I find my work rewarding enough but I am aware that managers are definitely a mixed bag'* (M6 Network Engineer GD). His next comment was the sting in the tail: *'My personal experience is good, but I know there are just some thugs out there.'* As one comment illustrates, top management piles pressure on middle managers: *'Well, people's line managers get tasked with making sure people are utilised. So they get battered with a big stick if people are not doing stuff'* (F1 Asset Manager GD).

This multi-management environment makes it difficult to directly control employees and creates numerous contradictory relations, such as the demands from different managers with different responsibilities as well as their relations with the IT professionals they manage. Attempts to resolve these contradictions result in the imposition of an internal market where employees who do not get assigned a project, *'get put on what is called the bench...you don't get pay rises, bonuses; you can get picked for redundancy... they are using more of an internal market rather than a direct management mechanism to control staff'* (M4 Systems Designer GD). So while, in this company, benching does not negatively impact on salary, it can reduce opportunities for bonus payments. The notion of the 'bench' is one that is familiar within the ICT sector.¹ *'Being on the bench is not unique to our company. All the major IT firms do it... it does keep costs down because it is cheaper than having to hire contractors all the time. It is also a ready resource pool...'* (M1 Project Manager). Not all the participants had a negative view of the bench: *'The company does need a proportion of people on the bench for flexibility... It is a sensible business decision to have a number of people on the bench'* (M3 Project Manager). This was a minority view among

participants. Benching also appears to be a method the company uses to avoid significant redundancy payments. *'Being put on the bench can happen to people who have been with the company a long time and who would get a lot of money if they were made redundant... (and) to people who are close to retirement'* (F2 Operational Acceptance).

Benching adversely impacts on how professionals feel about each other and themselves. *'We have had people stay on the bench for a year... quite often it creates stress because people are forced to come into work and there is nothing to do. It is humiliating and degrading; their skills are deteriorating. It is horrible'* (M5 IT support GD). The bench system can provoke contradictory relationships between people. As one participant puts it:

Sometimes I know when there have been periods where there have been a lot of people on the bench as they call it and so it causes a bit of fear because people can see there are lots of people on the bench and they think obviously things are not good. On the other hand, you can get some people who are quite stressed because they are on an assignment and who are working quite hard and then they see people sitting around with nothing to do and get pissed off with them, even though it is not their fault that they don't have any work to do (F2 Operational Acceptance GD).

While benching is generally thought to be a negative state, one participant hinted it could provide a positive environment. *'People... should get to do the things that they don't do when they are on assignments... training in quite a few of the areas such as software development that could be done online'* (F1 Asset Manager GD). Benching manifests several characteristics of alienation, particularly self-estrangement and estrangement from others. The 'bench' does not exist physically but is a concrete abstraction that has a powerful practical impact on the work experience of ICT practitioners.

When asked about how they felt about their jobs, one replied *'We love them'*. (There was raucous laughter here from everybody in the group.) She continued:

I am only joking. I think working life is very stressful and people are being political within TUPE situations when you have lots of different contractors. Things can be very political even when you are working internally. It's like, for quite a few years it feels like you always have to cover your arse. So you always put everything in an email. You have to keep records of everything you have said and who you said it to even if you have been on the phone with them. You also sort of have to think politically even if you don't want to do that. Also that can be very hard. To think about what is in it for you, and other people, what is their agenda, and try and work out what might happen in a certain situation.

So rather than just doing the work, you have all this other stuff to think about (F2 Operational Acceptance GD).

However, like the technology they employ, management practices within ICT firms are subject to continuous change and evolution. There is evidence to show that IT firms are attempting to minimise the use of the bench and to replace it by the practice of drawing upon just-in-time techniques to employ ICT professionals on short-term contracts, so evident in body shopping: contract employees are as efficient in terms of deployment, cut costs, enable firms to pick professionals with specific project skills, and help companies to avoid mass layoffs and subsequent 'protests' (Sushma 2017).

4.10 Theorising the Alienated Condition of the ICT Professional

How far does Marx's approach to alienation help theorise the experience of the ICT professionals who participated in this setting? The evidence concerning the control over outcomes of work indicates that these professionals have no choice over how their skills and competencies are used in terms of the products they make. Furthermore, the nature of these products means that none of them can satisfy her own immediate or long-term needs. After all, how many, if any, ICT professionals have need of a medium-to-large scale information system outside of work?

The software and hardware as well as the systems designed and implemented by these professionals have all been created by them but for the other, the employer, to use to deliver a service to an external client and as a consequence the impact of this on the professional takes on five dimensions. First, the scope of the project already has been clearly defined and therefore limited by the client. Consequently strict parameters have been prescribed before any work commences both in terms of product and, increasingly, how those outcomes are constructed. Secondly, once the product has been made, its use is owned and controlled by the employer. Even if, in the highly unlikely event, the professional did want to use the system s/he helped to create, it has now become the private property of the employer. In addition, the ICT professional has no control over how the outcomes of his/her work are used, who uses them and if they have any eventual positive or adverse consequences for society.

Thirdly, having to work using standardised units to generate IT systems, means the ICT professional actively constructs processes that undermine her own skills and professionalism. Given these circumstances, each time the professional successfully completes a task, it is but one more step towards the deterioration of her own worth. A further outcome of this demand is that the professional, indeed the profession as a whole, has no control over the

way in which the industry is changing with the rapid emergence of commodity skills such as basic programming, routine software maintenance and testing, and elementary business processes.

Finally, it is the employer and the customer organisation who benefit from the work of the ICT professional and while the professional has no control over them, they have micro-managed control over her/him. It is an unequal relationship. This appears to confirm that the first part of the argument advanced by Marx has significance in helping to both form an approach to research and in providing a theoretical framework with which to analysis results.

But what of the work process? The nature of the ICT sector means that ICT professionals wait for work to be commissioned externally or internally. Within this particular company, work is distributed and, despite a formal process offering choice, the professionals have little say about the work they do; in some instances, they can be deliberately excluded from work because of personal circumstances such as care responsibilities. The internal division of labour means the professionals have to be asked to work on projects and then can be pressurised into taking work they would rather avoid. When work is not available, they are subject to enforced idleness through the bench system, which can have detrimental effects on self-worth, skill level, and on how they are seen by their colleagues.

Once work has been allocated, the professionals are required to complete their tasks by adhering to a strict set of given methodologies or templates. They are also expected to employ a range of standardised and commoditised products to achieve the objectives of a project. Thus, internal imperatives mean they have minimal control over how work is dispersed and implemented in that none of the participants mentioned any informal strategies to resist the adverse conditions within which they work. This was a significant absence from both the group discussion and the individual interviews. There are two possible explanations for this. The first is that such possibilities just do not exist or that second, even within a safe and relaxed discussion where anonymity is guaranteed, they still could not or did not want to articulate their views on this aspect of their working lives. Either way, it is indicative of the oppressive environment within which these professionals work.

The onset of the economic crisis provided a further impetus for a wider and deeper application of short-term project contracts to be awarded to IT companies. Thus, ICT professionals can be transferred back and forth across employers with all the insecurity this can bring. They can also be faced with having to cope with a different set of working practices and with a change of employer can come a change of work location. In addition, there is the development of short-term employment contracts within the profession and although these are not always used by medium- to large-scale IT companies, it is not unusual to find a variety of non-standard employment methods such as the use of agency temps (usually in low-paid, lower skill jobs), the use of contractors (usually in

higher-paid, specialist skill jobs), and the use of zero-hours contracts² through a separate subsidiary. When in work, they can find themselves benched. In effect, they become an internalised reserve army of labour exhibiting a number of characteristics normally associated with the notion of precarious employment. These developments create competition between professionals, insecurity, frustration, friction and conflict, and encourage a blame culture. All of these have an adverse effect on interpersonal relationships.

To this picture is added the complexities arising from professionals being accountable to multiple managers. Here management imperatives are focused on attempting to resolve the contradictions arising from horizontal forms of accountability by implementing mechanisms such as benching. In addition, managers are perceived as being oriented on successful task completion with the wellbeing of staff a secondary priority as is highlighted by the attitude towards training for the professionals. A further aspect is the development of a blame culture demanding the continuous archiving of evidence to counter any adverse comment made by a manager.

For these ICT professionals, the work process, as with the products they produce, has been, and continues to be, developed to deny them immediate control and on a broader, more general sense – such as, for example, in the development of lean IT and the extensive use of commoditisation – facilitates the development of an industry over which they have no control and one which suppresses those very aspects of their work that could foster the notion of professionalism. The commodities they create and the way they create them rebound back to alienate the creators from their own creative activity. This is the antithesis of the commonly accepted notion of what it is to be a professional. The processes described here dovetail neatly into the discussion Marx has about the nature of alienation. ICT professionals, by both creating and recreating these products and processes, are building the components of present and future states of their own alienation. And yet this happens in a context that *appears* perfectly natural and seemingly unstoppable.

At the same time, the trends inherent in the development of the industry and accelerated by the economic crisis of 2008, offer no possibility to arrest let alone reverse this process. ICT workers are now locked into a seemingly unstoppable process of alienation employed in the industry. Given the above, the second element of the Marx's notion of alienation is also particularly relevant to the work process experienced by the ICT workers employed by this company.

Marx's formulation of alienation is extremely pertinent for the ICT professionals in this setting. However, would it be applicable in other situations that could be possibly described as more benign? An example of one such environment could be those ICT professionals working in ICT start-ups such as Coursera, a company concerned with delivering Massive Open Online Courses (MOOCs). At the start of the section outlining Marx's theory of alienation reference was made to labour being a commodity, and it is from this that Marx builds his

view of alienation. This includes competition. Although time has not allowed a full exploration of the staff in Coursera, a review of comments made by interviewees, such as software engineers and communications managers, during the interview process appear to demonstrate that both the interview process and starting salaries are highly competitive between profit-making firms such as Coursera (Glassdoor 2014). Here decisions are being made by the employer about the value of the ICT professionals' labour. As competition is evident during the process of recruitment and since firms like Coursera operate within a competitive environment, it is quite likely that the alienated experience of the ICT workers who participated in the study would resonate with those employed by firms like Coursera. There is a further issue connected with MOOCs for ICT professionals in that these workers are encouraged to undertake professional development using MOOCs but to do so in their own time and to pay their own fees thus reducing costs associated with in-house training and development.

A question could also be asked about the relevance of Marx's theory of alienation to other computer professionals such as video game programmers. However, even in this industry, which was once seen as having totally committed employees who saw their work as a hobby, the alienating relations within the industry, manifested through the pressures and stresses of video game development, has led to the partial unionisation of the industry and to walk-outs (Farokhmanesh 2019).

4.11 Issues of Validation, Reliability, Bias and Ethics

Assessing the reliability and validation of the data gathered for this setting was undertaken in two ways. The first by sending an initial copy of this chapter to all the participants for comment: limited comments and clarifications were received. A draft of this chapter was circulated to unionised ICT professionals as a briefing document thus indicating the participants' confidence in the research. Reliability and validation was also obtained by referring back to secondary research to confirm some of the findings, such as those associated with the introduction of lean management techniques, the prevalence of benching and TUPED contracts, thereby strengthening the view that the experiences of the ICT professionals who participated in this setting resonated with those of other ICT professionals in similar circumstances.

Using a fully-fledged PAR method was not an option in this setting simply because it was not possible to create and follow through with a project involving the ICT professionals since this would have required an adequately funded time-limited project staffed with seconded computer experts. Nonetheless, successful attempts were made to incorporate the sentiments that inform PAR into this aspect of the research and to try and give as much control as possible to the participants.

4.12 Conclusion

This chapter explored the control ICT professionals have over both the products they make and the processes used to create those products. Extended conversations with the participants allowed them to develop their own narrative and has placed this narrative within the wider theoretical discourse concerned with Marx's theory of alienation finding that the experiences described by the participants can be understood and explained within that paradigm. There are two further points worthy of note. Given the time and space constraints it is evident that ICT workers can articulate their profound reflections on how they see their working environment and their role within that environment. Their contributions during both the group and individual sessions indicated they had a firm grasp of the genesis and nature of the problems they confront. Secondly, this chapter has shown that the power structures within which the ICT professionals work shapes the products they produce, further emphasising that technology and its development are not neutral but are directly concerned with advancing the interests of capital.