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Fuzzy Holes and Intangible Time
Time in a knowledge industry

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ABSTRACT. The knowledge economy is characterized by highly skilled, highly educated employees whose work is centred on the manipulation of information. This article looks at the work process of workers in the software sector, as their work is both central to the knowledge economy and shares many of the characteristics of other knowledge workers. It describes the temporal frameworks found, grounding them in the work process. It documents specific characteristics of work and work organization that give rise to a time experienced as both intangible and fuzzy. It argues that there is a deep irony at the centre of the knowledge economy. On one hand, speed is the key metaphor of the knowledge economy. Yet the use of metaphors of speed and efficiency bypass any appreciation of the qualitative nature of time found within these work processes. Knowledge production is based on creativity, communication and knowledge development, processes that move at their own pace. These processes sit uncomfortably within temporal frameworks, which are based on a predictable and quantifiable time. KEY WORDS information technology; knowledge; working time

Introduction

This article looks at the types of time that accompany work in the knowledge economy.[1] Hassan (2003) documents the links between knowledge production, temporality and the technologies upon which societies are based. It details the

tensions that arise when the creative process of knowledge production comes into conflict with the temporal frameworks of the knowledge economy.

'When time is money, speed becomes an absolute and unassailable imperative for business' (Adam, 2003: 101). Adam locates the origins of current organizational rationality in the concept of 'time economy', which implies that the shorter the period of time between an investment and its return, the greater the profit. Competition adds another layer of time compression. The faster a product is produced, the cheaper it can be, so the competition can be undercut. Furthermore, if there is more time left to produce another product, all the better to compete with one's rivals in industry. In opposition to this speeded-up time, is time in creative or caring industries, where work is not 'amenable to translation into the clock-time units on one hand and time compression on the other' (Adam, 2003: 102).

This article examines the production of knowledge in workplaces located in the software sector. The sector was chosen as it lies at the very heart of the knowledge economy. It is from this sector that the metaphors of speed, instancy and rationality spread like wildfire (Sennett, 1998).[2] Lundvall and Barras (1997) describe the information technology (IT) industry as 'a fast growing industry in itself, characterized by shorter product life cycles and faster technological development' (p. 28). However, at the same time, as will be shown, the industry rests on a process with quite a different temporal reality – a process that takes time, that cannot be hurried beyond a certain point. Time spent thinking or waiting for thought is an indispensable part of the working day and cannot be willed or wished away. Knowledge is tacit and embodied, such that learning is social (Lundvall and Barras, 1997). Yet this second 'lived' time of knowledge work is often hidden, even from those living it. Here then is a paradox.[3] The limits of the IT workplace are the limits to how fast, how often, how continuous the creative effort is, yet the creative effort is a process that resists compression.

This article draws upon a research study that examined the working time of individuals employed in Irish software development companies, and material from interviews undertaken for that study illustrates the points made in this argument. For reasons of space, the interviews are reproduced here in part only. Twenty-one high-end IT workers participated. The software workers were asked, over the course of a year (October 1999 to September 2000), to fill in weekly time diaries which noted their starting and finishing times. They were also interviewed five times throughout the year.[4]

Within software companies, I interviewed programmers whose job is centred on creating language and symbols, and marketing executives who create symbols of a different kind. This range of occupations was chosen to illustrate the breadth of work that can be considered 'knowledge work'. Any sector that has a similar type of work will have similar types of time associated with it. If the

work process occurs in similar industrial time-frames, the same tensions as described in this article will arise.[5] By understanding these times we can best create working environments that facilitate and encourage creativity.

Thompson linked a particular type of work – factory work in industrial capitalism – with a particular understanding of time: clock time (Thompson, 1991). My argument in this article is that the particular nature of knowledge work, as illustrated by the work process of the IT workers interviewed, has led to a new experience of working time, yet this experience often remains in the shadow of the clock. My intention in doing this research was to examine the work process of knowledge workers and, by so doing, uncover the nature of working time as it exists on an experiential level: the lived time of work, the qualitative and socially constructed aspect of working time (Durkheim, 1912/1976; Sorokin, 1937; Hill, 1989; Adam, 1995).

The article is divided into three parts followed by a conclusion: in the first part, I describe the type of the research that has been done on working time and locate this article within a particular research framework. The second part examines the relationship between the specific work process of the knowledge workplace and the nature of working time. In particular, I outline the way in which knowledge work alters both the shape of the working day and the way in which time is experienced. Two metaphors are developed: the first illustrates the changing nature of work breaks ('fuzzy holes'), while the second highlights a particular aspect of the time associated with work that is creative or generates knowledge ('intangible time'). In the third part of this article I examine how these workers, given the tension between the lived time of their work and the rationalist time of organizational discourse, manage their time within the workplace. It is here that the dual temporal existence in these organizations becomes visible. On the one hand, time is quantified, decontextualized, rationalized and commodified (Hassard, 1990); on the other hand, for individuals it is lived, created and generated (Adam, 2003).

Research on Working Time

Industrial working time 'continues to be the central organizational point of reference for whole societies in countries now called "post-industrial"' (Basso, 1998: 23. For an opposing viewpoint see Hardt and Negri, 2004). The Industrial Revolution brought with it assembly-line technology, the factory system and an increased urbanization of society. All these processes made it increasingly necessary to co-ordinate time across society in ever more precise and standardized ways. The time work began was measured by the minute, not by the rising of the sun or the call of a farmyard animal. As social organization became more complex, time measured by the clock became the most important time in society

(in contrast, other times, times of experience, were devalued). Theorists are now examining how the shift from an industrial to a globalized society is affecting the temporal structure within which society operates. Information communication technology (ICT) allows far distant places to be connected. Much production is now intellectual rather than material – knowledge is produced as well as objects. Turnover time contracts as the market for these products rapidly changes. The stand-alone factory has been replaced by global supply chains, which incorporate both local clusters and global networks.

Research on contemporary industrial working time broadly fits into three research frameworks: one that looks at the length of working hours, one that examines whether work is experienced more or less intensely, and one that looks at the conflicts which arise between different temporal rationalities.

Perrons et al. (2005) suggest that 'the potential of the technological and associated changes bound up with the emergence of the "new economy" seem to be developed to raise the intensity, duration and participation in paid work' (p. 54). The software sector in particular has a reputation for long hours.

Gershuny (2000) argues that those in higher skill jobs are 'time poor', working longer hours than those in lower skilled occupations; yet this reputation is not necessarily justified. Studies of working hours in the software sector in Ireland, Denmark, the Netherlands, Germany and the United Kingdom found that while a small proportion of employees work long hours, more do not (Plantenga et al., 2001; O'Carroll, 2005).

Other research frameworks do not focus on changes in the absolute number of hours of work, but on the nature of work within that time. The issue is not necessarily long hours but the intensification of working time (Brannen and Moss, 1998). Nowotny argues that time now is experienced as speeded up (Nowotny, 1994).

A different approach to the issue focuses on the intersection of different time-frames. Adam (1995) distinguishes between rationalized time versus qualitative time. Hochschild (1997) argues that time is increasingly seen via the Taylorist lens of efficiency and rationality and Southerton (2003) shows that the internalization of a rationalist approach to time management can result in the creation of 'hot' and 'cold' temporal spots, times of harriedness and unhurried times, which in themselves increase the sense of time pressure. In academic life, Ylijoki and Mantyla (2003) describe the tension between the 'scheduled' time of project deadlines, lecturing hours and administrative meetings, and the 'timeless time' of academic research. These theorists all address both the experiential aspects of time and the existence of conflicting time-frames.

This article is located in the third research framework. It documents the time-frames of knowledge work and examines how they are linked to particular types of work processes. Therefore, in the next section of this article, I will examine the work process itself, and describe how it is bound up with a particular sense

of time: a time that is not linear, homogeneous, quantifiable nor indeed particularly visible.

Fuzzy Holes and Intangible Time

In the high-tech workplace, work time and non-work time intertwine each other. Irish legislation on working time defines work as when one is both at one's place of work and doing work.[6] It has never been the case, however, that all the time spent at work is time spent working (Thompson, 1991; May, 1999). The working day has always been peppered with holes, some officially sanctioned and protected by law (such as lunch time), some taken when desired (such as cigarette breaks) (Madden, 2003). The nature of these holes, however, has changed. In the Fordist factory, the time of work is clearly demarcated from the time of non-work. The working day begins and ends at mutually agreed times – and indeed, as Thompson (1991) noted, many of the struggles of industrial society came to be centred on these times of starting and finishing. Marx (1867) identified the presence of holes in the working day and Roy (1960) described their content in an industrial context. Faced with a work that was routine, repetitive and dull, he found his co-workers peppered the time with spaces of variety and interest such that:

> The twelve hours of 'click, move die, – click, move dies' became as easy to endure as eight hours of varied activity in the oil fields or eight hours of playing the piece-work game in a machine shop. The 'beast of boredom' was gentled to the harmlessness of a kitten. (Roy, 1960: 165)

The regular monotony of the work process is mirrored by a more sociable and entertaining routine. First comes peach time in which a peach is shared; then comes banana time in which a banana is stolen; then window time in which the window is opened; and so follows pick-up time, fish time and coke time. These holes in work time are invented and maintained by his co-workers. When for a few days these routines are disrupted, the unbearable boredom of the work returns. Within the working day, there is a clear divide between the times of work from the times of non-work. Like an Emmental cheese, work can be imagined as a solid block, a block of work-directed activity, surrounding smaller spaces emptied of work. In contrast, in the knowledge workplace, to continue the food imagery, time at work is more like a dish of spaghetti; it is difficult to discern where one time ends and another begins.

   What gives work time this spaghetti-like nature? In this section I look at the time of work and the time of non-work and show that between these two poles is a grey area of time during which one is not working and not quite on a break. There are two aspects of this grey time that I will consider. First, there is the

break that is not quite a break; the 'fuzzy holes' that permeate the working day. Second, there is work that is not quite work; the 'intangible time' of work that takes place when one does not recognize that one is working.

Fuzzy holes

As holes open up in the working day, they are also shut down. As the working day is intersected by breaks, it also is intersected by tasks. Two aspects of the work process, which have opposite effects on time in work, result in 'fuzzy holes'. First, the process is both unpredictable and networked (Abbott, 1991). Second, the work process within these industries encompasses many different tasks and responsibilities.

Aspects of the industry can open up holes in the working day. Each individual component of production is reliant on other elements (other project groups, management decisions on future production, the state of the markets). The software workers, in the following example, need to synchronize their work with others in the production process. They stay late to take conference calls with team members in other countries:

> You're looking at your watch and going, 'I'm going to be here till nine o'clock waiting for them to get this finished . . . They are going to run into a snag that you're going to have to be there for. (Dermot 2: 356)

Harvey (1989) argues that with postmodernity there is an 'incentive to create the world-market, to reduce spatial barriers and to annihilate space through time' (p. 233). It is ironic that along with the compression of space comes the opening up of time – the creation of empty times of waiting.

The chief organizational feature that limits the spread of the empty times of waiting is multitasking. Job definitions have broadened as workers have heightened responsibility for an increased variety of tasks (Frenkel et al., 1995). Multitasking means more than having a number of tasks to work on; it also means having to do more things at once. It is a phrase derived from the computer technology that frames the working day, the desktop computer that allows one to switch between programs in an instant and work on many different applications simultaneously. Short tasks are useful, in that they plug the holes left between larger projects. The variation in time taken for each task allows new tasks to be slotted in to the time spent waiting for another. Such multitasking closes holes down. The phrase 'taking a break' can have two meanings: it can mean a break from a task (in order to switch to another task) or it can mean a break from work (in order to switch to non-work activity or space). Multitasking facilitates the former but not the latter and thus breaks become 'fuzzy'.

Email is the ultimate micro-task; for the interviewees it operated in a grey area between work and non-work. For most of them, email constantly filtered in

throughout the day. Very rarely was reading email included as a break in the diaries. Reading a personal email took only seconds, a quick flick between thoughts as one perused the task at hand. Email is the ultimate example of a work time that is short and immediate and it is both a work and a non-work activity. All the software workers were required to be on work-based email lists and spent parts of their day reading and writing emails. For many, email was considered to be an interruption to the working day, yet because of the highly social nature of this work and the importance of communication for organization and learning, dealing with it was a task of some importance. Most were also in correspondence with friends and family. Some were on email mailing lists with friends working in other computer companies, enabling virtual conversations to be pursued with a wide group of people. Brannen (2005) argues that email transgresses the boundary between work and home; within the workplace, email also acts as the boundary between work and non-work. Email is also ambiguous. Each one might take a couple of seconds to read, but dealing with all of them might take a morning or an afternoon. It is short and fragmented, yet also time consuming. It is neither all work, nor all non-work.

Multitasking changes the nature of breaks; multitask breaks are 'fuzzy' because the employee isn't taking a break from working to not working, but taking a break from one task to another. Though the other task may be a personal project (thus perhaps considered 'not work time') it may also at a future point become part of the production process (thus becoming 'work time'). Most discussions on the barrier between work time and non-work time focus on the colonization of non-work time by work (for example, people working from home after formal work hours or being on call; see Hinrichs et al., 1991). Here we see that even within working time the spaces of non-work, which were always part of the working day (see, for example, Roy, 1960), are less clearly delineated. The boundaries between work and non-work *within* the workplace are blurred.

Intangible time

'Intangible time' results from a work process in which particular parts of the process, such as information gathering and exchange and the processing of ideas and concepts, are intangible. By this I mean that employees are not aware of the time spent at these activities as time spent working. These activities, while being an essential element of the work process, are also seen as peripheral to it. I will now look in detail at how one of the participants, Linda, talks about the various aspects of her work process in order to uncover the tangible and intangible nature of her work.

To the company and the workers, the aspects of the work process that result in measurable outputs are tangible and unhidden. Time spent working becomes

defined as time spent producing these measurable outputs; it is the actual writing that counts and not all the other activities that surround the writing. In this description, Linda describes the various tasks that make up her working day. Linda makes a distinction between 'thinking' and the rest of her tasks. To her, 'thinking' is her central activity.

> My whole job is thinking so I'm a proper knowledge worker. So the output of that then is writing documents, having meetings, talking to people, sending emails, all that kind of thing, but the actual meat of it is thinking, so sometimes, I find anyway, I find it very difficult to do that kind of work in the morning, so I do background reading and stuff and that kind of work can happen anywhere, if I'm walking along home sometimes I do it. (Linda 2: 21)

In a later interview she explains that she stays late because she has too much work to do and generally does little work in the morning.

> I stay till 7 . . . I get more done in the afternoon. I get very little work done in the morning. Especially if I am writing something . . . (Linda 3: 21)

Here we can see that by 'work' she means her core activity of thinking, and of writing those thoughts down. Work involves the production of a tangible product; everything else is 'very little'.

Yet she needs the social interaction to keep in touch with what is happening in the company and in the industry. IT is both isolating and unifying. It is isolating in that each person is physically separate from another (sometimes across great physical boundaries) and in that each works alone solving his or her particular part of the puzzle. It is unifying in that knowledge is passed from person to person, expertise is shared and therefore 'IT heightens "connectivity"' (Frenkel et al., 1995: 775). Linda does not describe her work process only in terms of thinking or writing. She wouldn't work away from her desk because she feels that all the communicative aspects of work (the chatting, the meetings, the emails) are also a necessary part of her job.

> Q. Do you think you will ever change your [pattern of] working hours? . . .
>
> A. I don't know, because you miss a lot, if you are not there. Especially at the moment. If you are not there so many things are changing. Ideas are changing the whole time. So if you are not in the office you might miss out. (Linda 3: 21)

Perlow also described how the working day of the engineers he studied was peppered with interactions 'which are crucial to getting the job done' (Perlow, 1997: 82) yet which were seen as deflecting from the 'real work' of engineering. She identified six types of interactions: helping, checking, integrating, planning, socializing and a miscellaneous category. Fletcher adds a further four 'invisible' interactions to the list. These are preserving the life and the well-being of the project, empowering others to achieve, empowering oneself to achieve, and creating the social entity that is the team (Fletcher, 1994).

It is not only connectivity that is hidden. From her interviews, we know that time is spent gathering and assimilating knowledge that informs her thought process and enables her to write. This is how Linda describes her writing:

> I can only do it when I am in the right frame of mind. It could take me all day but it might only take me two hours to do the writing, to get to the stage of actually writing it. (Linda 3: 563)

For her, writing is time-consuming because she's not always in the right frame of mind or because she finds it easier to work in the afternoon. She doesn't account for the time spent leading up to the writing. Looking at the work process itself, we can see that many different types of time combine to produce the finished product. Being organized for writing takes time; time in the morning is spent preparing. Here there is a gap in her sense of her own work time, a hole in the working day; yet it is not a hole spent at leisure on breaks or away from work. As this final quotation illustrates, for Linda it is 'not quite' work:

> Q. That is funny, you said you are a slow starter but yet you read all that in the morning!
>
> A. I do stuff but I don't produce anything. In the morning I do a lot of reading, and flap around. (Linda 3: 662)

An examination of Linda's work process illustrates the point that connectivity and thought, while being an essential element of the work process, are also seen as peripheral to it.

Time Management

These software workers have internalized a particular business ethic, an approach to work in which only the output, visible and measurable, is counted as 'real'. The process that leads to that output fades from view. Linda sees her difficulties as coming from her own personality rather than as being related to the way the work process is organized. Kunda (1992) described the effects of cultural management in high-tech companies: 'Members have internalized the "problem of control" that lies at the heart of organization and the private selves of members have become part of the "contested terrain"' (p. 220). The temporal rationality of the organization sees production in terms of homologous units of time, which may be manipulated. As aspects of the work process that take time are hidden,[7] this is the rationality that is internalized.

Autonomy and self-regulation of time are features of the knowledge work-place (Hinrichs et al., 1991; Paolucci, 1996; Francis-Smythe and Roberston, 1999; Symes, 1999; Brannen, 2005). The following comments are typical: 'The amount of work I can't decide on, how I decide to organize myself is quite flex-

ible' (Aoife 1: 17); 'It is very much left up to us what way we do it as long as it gets done by that date' (Catherine 2: 31).

As companies become increasingly involved in networks of relationships, company-wide time management is increasingly important (Symes, 1999). At an organizational level, planning rests on the calendar, deadlines being of core importance. The management of time mentioned previously occurred within the constraints of externally imposed deadlines. However, unpredictability, the non-repetitive nature of the tasks, the dependence on technology or on others can lead to tasks taking much longer (or indeed much less time) to complete than expected, making it difficult to plan according to the clock. In contrast, there-fore, at the level of the work process, the task is the unit of importance in plan-ning. In looking at the organization of working time within work we can see a separation, therefore, between corporate time and the time of the individual work process.

The software workers felt that planning according to clock or calendar was not appropriate to the work process for a number of reasons. I have already described the difficulties in predicting how long it would take to complete a task. In addition, the 'bitty' nature of work meant that new tasks kept arriving on the desk. The variables within the plan were constantly changing, both in terms of how many things had to be done and centrally in terms of what had to be done.

For some, it was the people behind the tasks that introduced unpredictability into the work process. For those in customer support, each new task comes with an impatient user attached. For others, the customers for whom they are creating a product are part of the work team. This reflects the transmitting of the man-agement function to the customer relationship (Leidner, 1993).

Three approaches to the self-organization of work were mentioned by the interviewees, none of which included management according to a timetable. Some tackled tasks in terms of priority. Often this meant tackling the tasks that they were receiving most reminders about from management, from other mem-bers in the project group, or from customers, rather than the most urgent tasks. Others operated a 'first come, first served' system. For others, those tasks that were most interesting were seen to first. In all these strategies it is the task and not time that is the basis of organization. Yet these strategies are applied within the shadow of the clock; the time-frame within which these tasks are to be com-pleted is determined by deadlines set by others. Corporate time-frames, which equate speed with efficiency, are very different from the individual time-frames of the work process.

This only becomes problematic when there is time scarcity. Fuzzy holes are vulnerable to compression and hard to defend. They are easily squeezed under pressure. Intangible time (intangible only in terms of perception, finite in nature) is added on to the day, increasing its length. In the first sections of this article, the software workers saw the organization of their working time as problematic

in many ways, and felt it could and should be organized more rationally. In this section, we can see there is a divergence between this rationalist understanding of time and the actions they actually undertake. Their work process reflects a qualitative understanding of time, while their rhetoric describes time in a more quantitative manner.

Conclusion

This article has examined the work processes found in workplaces typical of the knowledge economy and found that it gives rise to a particular type of working time; time which can be fuzzy and intangible. I have described both the experiential aspects of time and the existence of conflicting time-frames. I argue that there is a dual temporal existence; and while the participants often adopt the rationalist discourse of industrial working time, their work practice remains located in another, less visible time. Adam (2003) highlighted the fact that particular work processes, especially those that stand outside the business world (creative or caring occupations), produce a non-linear, non-uniform, non-quantifiable type of time. This article argues that we do not need to go to the periphery to find similar temporal experiences because they are to be found at the very core of the knowledge economy.

Time in these IT companies is characterized by the interplay between flexibility (wanted by the market, the company and the individuals) and high levels of employee temporal autonomy. A corporate rationality of time pictures time as manageable, quantitative, organized and arranged, such that production occurs at maximum speed. Behind this, however, there is another temporal reality. For the individual work process, the time of production encompasses times of thought, imagination and sociability.

Time in work is often described as nothing more than an abstract homologous unit of exchange and measurement. Here I have outlined the other time that exists; time as a qualitative, lived variable. By looking at the work process itself we see that the nature of the work undertaken, and the networks within which it is undertaken, operate according to a different temporal logic than a rationality which decontextualizes working time from the times of the work process. Speeding up is not always possible and, as Southerton (2003) has highlighted, senses of 'harriedness' are 'generated by a need to allocate and schedule practices within designated time frames' (p. 5). Consequently, there is a need to fit one type of practice into another type of time-frame. Within these workplaces, perhaps the important distinction to be made is not between time of work and time of non-work but between a corporate rationality that compresses time and a reality that allows time. In other words, the distinction lies between a rationality that embraces the time it takes to be creative (which includes time to be

sociable) and a rationality that views time as problematic. This article is there-
fore in accord with analyses which argue that senses of time-squeeze do not
necessarily emanate from longer hours. Rather, they result from the conflict
between different temporal frames (Adam, 2003; Southerton, 2003).

As in earlier eras, there is a struggle over time in the workplace. In order to be
able to use time in our own interests, we need to be able to understand the
particular natures of the multiple temporalities within which we operate. The
regular, bounded time of the Industrial Revolution and the Fordist factory has
been replaced by a time that is less clearly demarcated. It is this spaghetti time,
with its intangible nature and fuzzy holes, which leads to a sense of working
time intensification.

Hassan (2003) argues that 'to break the nexus between neo-liberal globaliza-
tion and the ICT revolution would be to begin to control the spread and the com-
prehensiveness of network time in people's lives' (p. 239). If we develop an
awareness and understanding of the multiple times involved in knowledge
production, then the possibility emerges of producing knowledge in a way that
resists the rationalist logic of the capitalist workplace. It is impossible to say if
the knowledge produced will be better, but there are strong reasons to suggest
that it would be. A production process built on an understanding of the rhythms
and the collaborative nature of knowledge production would be one that is more
capable of mobilizing the creativity and inventiveness of the human mind.

Notes

1. By 'knowledge economy' I am following the definition provided by Powell and
   Snellman (2004); that is, 'production and services based on knowledge-intensive
   activities that contribute to an accelerated pace of technical and scientific advance as
   well as rapid obsolescence. The key component of a knowledge economy is a greater
   reliance on intellectual capabilities than on physical inputs or natural resources' (p.
   199).
2. Metaphors like 'nanosecond culture' (Rifkin, 1987), 'Internet time' (Cusumano and
   Yoffee, 1998) and 'timeless time' (Castells, 1996).
3. Adam (2003) provides a similar paradox referring to just-in-time production; on the
   one hand the system is centred on the elimination of waste time and high levels of
   flexibility. On the other hand it is an extremely complicated system that requires high
   levels of synchronization. It cannot be maintained without a highly co-operative
   workforce, and 'such a workforce is not achievable if the just-in-time logic is extend-
   ed to the worker' (p. 108). The logic of just-in-time is reversed on the individual level
   and workers are offered long-term contacts and security to secure their commitment.
4. For a description of changes to work organization that occurred during the 'Celtic
   Tiger' economic boom in Ireland, see Collins and Boucher (2005).
5. There are many similarities, for example, between the work of the software workers
   and the research work of academics. The chief difference is that academic work orga-

nization is not as tightly bound to the time-frames of the market. However, changes in the structure of academic work and in the allocation of resources that attempt to mimic the market mean that the tensions discussed previously are increasingly part of the academic work life.

6. Organization of Working Time Act 1997; see http://www.irishstatutebook.ie/ZZA20Y1997.html

7. Another participant experienced a variation on this theme. Recently promoted to a more managerial position, she found that the administrative tasks that accompanied her new role caused her to occasionally stay late. The technical job she continued to do was conducted within normal working hours, almost as if the administrative tasks were not seen as part of her real job but as an 'add on'. Intangible work results in intangible time.

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