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Abstract
The modern organisation can be characterised in terms of the continuous struggle between providing organisational flexibility and control. Organisational flexibility and informality support the members in facilitating, mentoring, innovating and brokering. Organisational control serves the purpose of coordinating, monitoring, directing and producing. The aim of this paper is to study how modern professionals manage their use of multiple Information and Communication Technologies (ICT) in the context of the requirements for organisational flexibility and control. This is accomplished through interviews with 16 modern professionals reflecting upon their use of ICT. The study firstly demonstrates that the multiplicity of ICT possibilities require of the modern professional to reflect upon the technologies they adopt and the specific ways in which they apply the technologies. We also clearly saw both the importance of some technologies, such as email and the unimportance of others, in particular the PDA. Generally, the study demonstrated the importance of flexible and informal ICT, even for the performance of work required to maintain organisational control.

1. Introduction

Rapid and fundamental changes in the way work in general is organised as well as in the technologies supporting modern work has been associated with substantial debate in organisations as well as amongst academics. Many have argued for a shift from the traditional functional hierarchy of the Industrialised Society with highly functionally divided labour supported by centralised mainframes towards the flat, networked, organisation of the Knowledge, Information or Service Economy applying highly flexible, and possibly wireless, information infrastructures supporting knowledge work. Whereas the former image of

organisational reality evokes notions of control, formality, and high degree of articulation of tasks, the latter points towards aspects such as self-regulation, autonomy, informality, and tacit knowledge work. However, this distinction into two opposite archetypes can lead us to the false belief that in functional hierarchies there is no flexibility or informality, or that in the modern flat organisation, there will be no need for control, management or regulation. Organisational and technological changes can over time produce subtle or radical shifts on several levels reconfiguring the balance between organisational structure and flexibility (Robertson & Swan, 2003). One of the changes emerging is the rise of the modern professional, as a result of increasingly complex work in turbulent business environments where people entering the job market have a university degree, and will be expected to engage in substantial further professional and management training throughout their career (Kakihara & Sørensen, 2002). This paper assumes that the challenges facing a modern professional can be described as engaging in the world around her concurrently within flexible and open organisational structures as well as controlling organisational and technological structures (Schmidt & Simone, 1996; Quinn, 1983; Denison et al, 1995). The ways in which Information and Communication Technologies (ICT) are used is assumed to greatly affect the effectiveness of modern professionals. Professionals will be subjected to a wide array of ICT such as e-mail, ERP (Enterprise Resource Planning) systems, workflow management systems, web-based services, Short Message Service, videoconferencing, mobile and landline phone conferencing. The day-to-day localised adoption and adaptation of ICT and related organisational procedures will often to some extent be at the discretion of the individual professional. The understanding of what ICT professionals choose to use, for what reasons and how they reflect upon their practice, can provide an insight into the specific, operational challenges of managing organisational flexibility and control (Robertson et al, 2001). Some information services, for example workflow management systems, offer support for managing and being managed, where as others, such as email or the mobile phone, provide means of flexibly networking (Mathiassen & Sørensen, 2002; Robertson et al, 2001).

This paper aims at investigating further the diversity of professionals' use of ICT for managing the need for flexibility and control, and we do so by empirically exploring the question; *How do modern professionals reflect upon their use of ICT in terms of managing their daily activities of balancing control and flexibility?* This exploration is based on the analysis of qualitative data gathered from interviewing sixteen professionals. The analysis shows that professionals are highly reflective concerning their adoption and use of ICT. It also demonstrates a domination of flexible technologies supporting networking. We conclude that although this is an absolute necessity for the professional, it may also lead to the phenomenon of drifting interactional commitment, where the use of technology can be consistent or inconsistent in terms of control or flexibility. We consequently argue that the professionals and their organisations may end up paying a price for these inconsistencies. The study also demonstrated that modern technologies are far from domesticated. The professionals interviewed would regularly reconfigure their ICT setup based on careful reflections concerning their utility.

The following section outlines relevant theoretical frameworks characterising professional work, ICT services, flexibility and control. Section 3 presents the research approach. Section 4 presents the results and discusses these according to eight technology elements. Section 5 discusses the findings and concludes the paper

2. ICT Support For Professionals

Control and flexibility have been considered as major issues in research related to the efficiency of professional working practices and roles. Previous research has, for example, studied how professionals in knowledge intensive firms autonomously adopt or reject ICT (Robertson et al, 2001), how they formalise their interaction through inventing coordination technologies imposing control and structure, which reduces the complexity of articulating distributed, yet interdependent activities (Carstensen & Sørensen, 1996), how they choose various media based on media characteristics (Straub & Karahanna, 1998), how collaborative technologies can support group processes and networking (Bernstein, 2000; Nardi & Whittaker, 2000, Nardi et al, 2002), the relative utility of informal versus formal means of interaction (Kraut & Streeter, 1995), and how relying on certain technologies can result in unanticipated overload (Ljungberg & Sørensen, 2000). Nardi & Whittaker (2000) explore further the need for open, flexible and changing technology supporting both the accomplishment of work and the flexible negotiation of work in a broad sense – termed "outeraction". Nardi et al. (2002) explore professional working patterns and stress that the traditional distinction between accomplishing work and negotiating or coordinating work may dissolve when studying contexts of constant emergence of projects, leading to networking being a main activity and one indistinguishable from work.

Quinn and Rohrbaugh (1983) characterise professional roles in terms of the contradictions between the demands of professionals within two dimensions; A) organisational preference for structure between stability and control as opposed to flexibility and change; and B) organisational focus between internal and external. This analytical framework proposed eight professional roles spanning the four categories obtained by combining the two dimensions (see Figure 1).

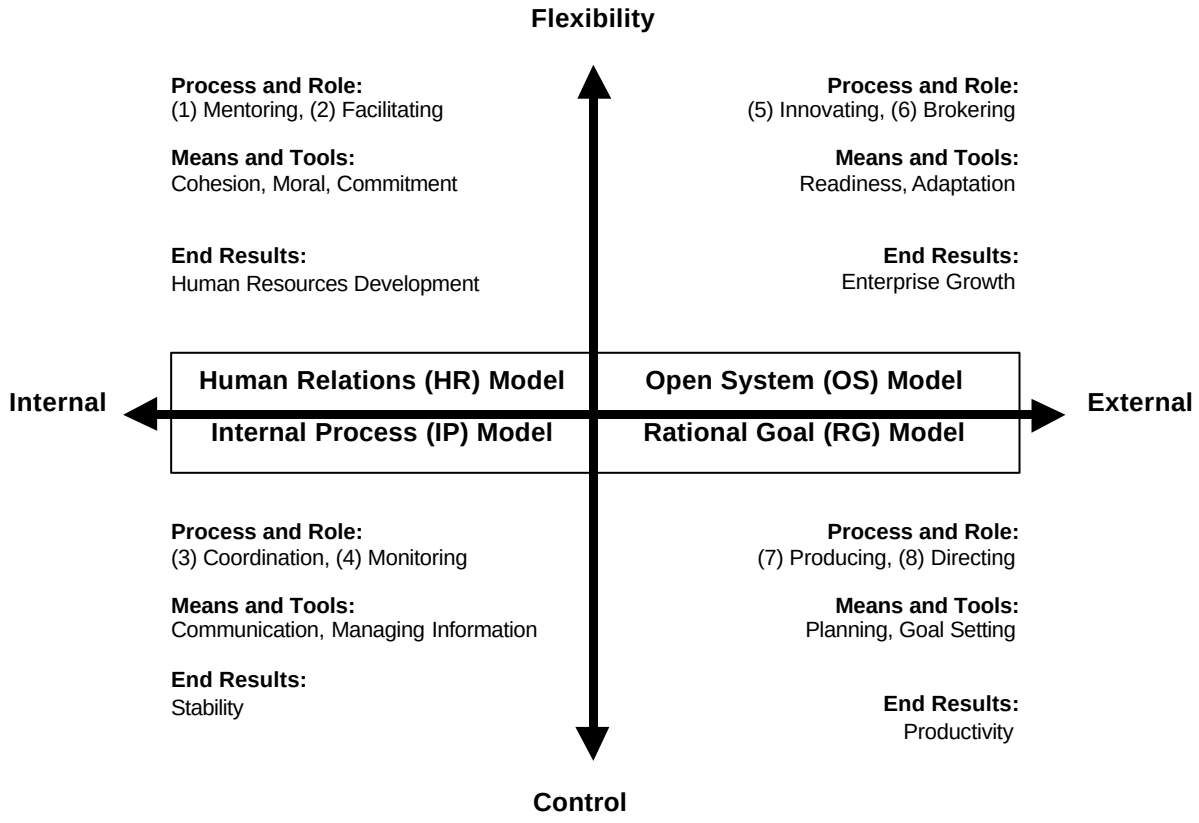

Figure 1: Computing Value Model (Adopted from Quinn and Rohrbaugh, 1983)

The *mentoring* and *facilitating* role represent work with and internal change perspective. The *innovator* and the *brokering* role also emphasises flexibility and change, but with an external organisational perspective. Roles aimed at addressing organisational need for stability and control are the *coordinating* and the *monitoring* roles internally, and the *producing* and *directing* roles externally. We see these roles as analytical elements describing the daily challenges facing modern processionals.

The rapid adoption and intense use of ICT over the last two decades have provided alternatives and options for organisations' modern professional work for restructuring their business processes (Kakihara and Sørensen, 2002). The increase of ICT mediated work has had an impact on the flexibility and control of the professionals' tasks and roles, for example in terms of establishing fluid working practices through the use of a range of interaction technologies by balancing own desire and need for interaction with those of the surroundings (Kakihara et al, 2002). The mobile phone or email, for example, provide both flexible and open-ended technologies for evoking interaction when needed by the individual professional, but they represent concurrently a source of disturbance.

Mathiassen and Sørensen (2002) characterises the diversity of ICT support in terms of four categories of services, based on the distinction between technology supporting the management of complexity through processing information or management of uncertainty by generating new information. *Computational* and *adaptive* services support information processing. The computational service can alleviate situations of relative low complexity through simple encounters or transactions, e.g. a using a web-browser to look up www.cnn.com. The adaptive service support complex tasks where a longer relationship of adaptation is necessary, for example in a mobile location-based service where the specific configuration among a distinct set of possible locations of the mobile terminal is constantly updated. In situations where uncertainty calls for the generation of new information, *networking* services can help with simple problems, such as three people using email, Instant Messaging or mobile phones to arrange where to meet for lunch. In situations where more complex, yet uncertain problems are to be addressed, *collaborative* services can support mutual adjustment and ongoing documented interaction amongst participants, such as a group of designers collaboratively designing a car-component using a combination of shared workspace, awareness support and coordination mechanisms.

3. Interviewing Professionals

In this section, we describe the method used for empirically collecting and analysing data gathered from qualitative interviews of sixteen professional from June 24, 2002 until July 2, 2002. Table 1 lists the interviewees in terms of role and organisation. The interviews were all recorded in participants' work places in London except one interview conducted by phone to New York, USA. The theme of the interviews concerned the professionals' day-to-day use of ICT, how ICT supported their work, their reflections upon the technologies they used and the ones they rejected. The aim of the interviews was to explore how professional utilise ICT for fluidly performing tasks. The questions generally focused on work-place technologies as e-mails, workflows, database systems, desktops computers, laptops, ERP (Enterprise Resource Planning) systems, PDA's (Personal Digital Assistants), mobile phone, pagers, etc. The

relationship between the roles aiming for stability and control versus the ones serving flexibility and change was in particular investigated through investigation of interactional practices and reflections about the use of ICT. All the interviews were tape-recorded with the expressed consent of the participants, which were all anonymised. The sixteen interviews lasted from forty-five minutes to one hour and the interviewees were mostly high-level professionals and executives, or knowledge workers (Robertson & Swan, 2003). The sample is, therefore, not representative in a broader demographic sense, but is biased towards highly skilled and educated professionals, and selected to represent modern professionals experiencing the demands of modern working practices in terms of accelerated pace, a dynamic constellation of professional relationships, and an advanced use of ICT (Shwarz et al., 1999). The participants were also characterised by other markers of the new economy with some having broadband Internet access at home, some were globally mobile, and yet others working in clients' offices approximately 80% of the time.

	Title and Job Nature
1	Managing Director - Global Investment Bank
2	Director - European Digital Advertising
3	Manager - Hedge Fund
4	Paediatric Surgeon – Medicine
5	Project Manager - Construction System
6	IT Director - Information Technology
7	IT Entrepreneur - Information Technology
8	Energy Broker – Brokering
9	Accountant – Finance
10	Investment Banker – Banking
11	Security Consultant - Information Technology
12	Chief Executive Officer - Interactive Marketing
13	Consultant - Information Technology
14	Vice President - ICT solutions provider
15	Christian Chaplain - Religious Work
16	Manager - Global Business Development

Table 1: Participant Categorisation

Interviews were transcribed and analysed by applying an analysis matrix highlighting issues of theoretical concern. This was developed jointly with an additional colleague. We further analysed the data using the theories presented in the previous section. The purpose of the analysis matrix was to act as a tool to refine the raw data into results, which could be more easily analysed, and it classified dimensions such as; interviewee sector, background, purpose as well as modalities of work, ICT configuration, perceived limitations. It also highlighted interactional, locational, temporal, spatial, and contextual aspects of work. It further classified experiences of standardisation and fluidity aspects of work.

4. Multiple Support Technologies

The sixteen interviews offered us a unique snapshot of daily working practices with ICT and contemporary opinions and reflections on how this is experienced. Generally all professionals except the Christian Chaplain stated that they perceived themselves as being either collaborative or highly collaborative, with fifteen listing email as one of their primary

technologies. Interestingly, only nine professionals considered the phone, either landline or mobile as a primary technology. Nine of the professionals emphasised that they regularly travelled as part of their work, and three felt restricted by lack of network bandwidth. Interviewees generally stated that they sought fluid working practices through a mixture of synchronous interaction using phones and asynchronous interaction using voice mail and email. The lack of network standardisation was emphasised by eight of the professionals, whilst four emphasise lack information and documentation standardisation as an issue. Six interviewees further pointed towards problems related to device standardisation. Interestingly, four interviewees stated un-probed that they would be interested in using the wireless BlackBerry email client if it was standardised throughout their organisations. Although highly rated by several interviewees, Instant Messaging was only deemed a primary technology by the Energy Broker. Whilst seven of the respondents explicitly stated that they felt in control of their own technology use, six professionals claimed that they were not in control, but often felt themselves at the mercy of the interaction imposed by the technology. When asked what major technology restriction they were experiencing, three independently mentioned the lack of battery life-time in laptops, mobile phones and PDAs All of this illustrates well the diversity of technologies used, and the Business Consultant experienced that the suite of interaction technologies added their own problems: *"…all of my devices add some complexity to work"*. As indicated by the Entrepreneur, the selection of what technology to use is context dependent and different tools are used in different situations. This implies that the selection of media provides a degree of flexibility in the situation. For example when asked if the provision of technology had provided more locational flexibility, the Broker answered:

> *"It has – I suppose that more often, successful brokers work from their homes while maintaining contact with their clients and co-workers. Flexibility boils down to accessibility."*

The following will in more detail discuss the primary interaction activities and the opinions regarding the choice of interaction medium and support technology. We have organised the discussion in three types of working; Documentation work, asynchronous work and synchronous work. Documentation work was mainly reported in terms of paper work, database work and PDA work. Synchronous work consisted of video conferencing, phone conversations and face-to-face interaction. Asynchronous work was primarily discussed in terms of emailing and instant messaging. The latter can obviously be seen as transcending the barrier of synchronous and asynchronous. Furthermore, document work can also be seen as asynchronous work.

4.1 Documentation Work

Paper is a highly flexible technology supporting multiple usages in many contexts as well as micro-mobility between closely located co-workers (Hughes & King, 1993; Heath & Luff, 2000). Professional worker can carry, read from and write on paper anytime anywhere. The interviews generally documents work activities where paper is not the essential aspect. However, at the same time, we found important usages of paper as a necessity in many situations. It for example provided essential practical support. The IT Director pointed out that *"there are a few people who have the 'must-print-it-to-feel-it-to-have-it' mentality"*, and the Vice-President stated that he prints everything simply because he reads it better on paper than on a laptop. This psychological and pragmatic attachment to paper is countered by the professionals' organisations, which generally are implementing paper-less offices in order to increase efficiency. Both the Investment banker, the Construction Manager, and the Paediatric

Surgeon are keen to remove paper from their work environments because of the physical constraints of paper. If the stipulation and articulation of distributed work activities relies critically on paper-based interaction, then the unavailability of the information imposes structural deficiencies transcending the paper affordances of micro-mobility and provision of flexible means for coordinating work (Heath & Luff, 2000; Carstensen & Sørensen, 1996). This deficiency of providing a control function can, however, also emerge as a designed property, such as in the case of legal documents, where the management of legal signatures is an essential control feature. As illustrated by the Business Development Manager in an electronic equipment manufacturing firm:

> *"95% is digital. Everything that has to be legally signed are printed on hard copy, otherwise everything else is digital."*

In terms of Mathiassen and Sørensen's (2002) characterisation of information services, paper can conveniently be characterised in any of the four categories. Paper can be project documents explaining a particular aspect of a project, hence a computational service evoked by a reader. Paper can serve as letters or notes passed backwards and forwards between people, and therefore can be viewed as a networking service. Paper documents can also form an orderly workflow with specific interactions stipulated in each step of the process, hence be an adaptive service. Lastly, paper can form the core shared workspace documenting decisions, coordinating actions and providing shared awareness of who is currently doing what, and therefore also be viewed as offering a collaborative service. Therefore, we can argue that the flexibility of paper can support control roles such coordination, monitoring, producing and directing (as per the competing value theory) only to a certain degree. Electronic means for interaction offers more substantial and interactive control potential than paper, in terms of the possibilities for stipulating and inscribing action and for embedding controls of usage (Schmidt & Simone, 1996). To explain the effort of the research group in Xerox PARC, Lucy Suchman (1996) used an image of advertisement with a picture on the top of which there is a proverbial paper napkin, onto which great ideas have been inscribed over the course of lunch. On the bottom part of the advertisement, two businessmen sittings at the lunch table, but now with a portable computer placed between them. The advertisement is headed with large title in a form of question: "*Why do this?" (i.e. why the napkin when you can use the potable computer)*. Suchman, however, argued that we should not be like the ad writer in assuming no one will use napkin paper. She advocates for paper by asking the question: why not consider the napkin as the flexible technology. The ad writer implies computer should be ubiquitous (i.e. everywhere). However, she argues for media diversity and hybrid systems for different settings. Technology does not necessarily displace the one that came before. Suchman, moreover, critiqued the ad in terms of presenting the paper and the computers floating in white space. She argued that we should rather rethink about them in populated in environment with heterogeneous artefacts (e.g. organisation). However, in our point of view, the launch table can be considered as the workspace where both paper and electronic technology are used.

Essential aspects of the professionals' documentation work is supported by data stored and manipulated in localised databases or more complex ERP systems. These databases can be associated with the organisations desire to maintain stability and control by recording and tracking essential actions for later use, for example, as illustrated by the Oil Broker, their large central database of historical data supporting analysis of data ways not otherwise possible. Although, the competing value framework categorised brokering as flexibility role, the brokers' use of databases to track action (as empirically investigated here) exemplifies the control task in brokering. The IT Project Manager emphasised the substantial and readily available information about clients that was constantly extracted and subsequently

manipulated and presented as Excel spreadsheets and Word documents. He further argued that the essential work going into feeding the databases and enforcing structure not only serves the purpose of controlling and structuring, it can also provide essential flexibility:

> *"The consultants […] are gaining information via telephone, face-to-face interviews on a number of subjects, which is then distilled, ordered, given structure and then placed into the database. We then run reports from that database, use it as the basis of our search process – it underpins every business process that goes on in this building. Aside of that, there are all the external data feeds which go into the building, which need to be maintained. […] It's so that technology becomes a tool rather than a hindrance."*

One of the aims of applying technology with the purpose of supporting control is to reduce costs of operations, for example by ensuring data integrity and efficient processing. The Managing Director of an Investment Bank argued that any demands of the bank of increased control and audit would have to be matched with increased efficiency of working under these constraints:

> *"If the bank were to require us to increase the level of bureaucracy of paper work that needed to be filled out and there is some discussion of taking formal notes at meetings and sending those in central database for rapid consumption, I think that it would be very important to provide infrastructure that's very user friendly and […] lighten up on the overall bureaucracy required"*

Recent years have seen a dramatic increase in the use of Personal Digital Assistants (PDAs), and most recently, this technology in various ways converging with mobile phones and other means of wireless connectivity such as Bluetooth and WiFi. Although they can use for a variety of communicational tasks, the PDA is typically used for personal information management. However, we did not, amongst the interviewed group of professionals, find the expected level of enthusiasm and use of this technology. To the contrary, we found substantial evidence of failed experimentation, where professionals had adopted and subsequently abandoned the technology for various reasons. The PDA was simply considered to be yet another device, and not one that was deemed part of the essential technology core. As put by the Advertising Account Director:

> *"I just realised that hey, this is an extra device, it's not a productivity device, so I sold them all on e-Bay and I'm glad they're gone."*

The Entrepreneur reaffirms this sentiment by stating that he had two PDAs and does not use any of them due to poor usability. One respondent used a PDA for reading news while commuting.

4.2 Synchronous Work

The overwhelming favourite means of synchronous interaction was, of course, face-to-face communication. Despite the attempts, co-present communication still offers possibilities of humans connecting, fluid turn-taking protocols, conflict resolution, peripheral awareness etc. that mediated interaction cannot match (Olson & Olson, 2000; Heath & Luff, 2000). The vice-president of the technology company disregards technology in terms of providing a proper context. The Entrepreneur argued further, mediating technologies always will suffer from limitations and that they cannot replace face-to-face communication. The Advertising Account Director further emphasised the role of face-to-face communication for generating inter-personal trust, by saying that;

> *"You cannot express a beautiful idea via a PowerPoint slide; it is often done unmediated*

and in person […] The concept of 'trust' is often talked about in business and I think that it can't be underrated in terms of the results that you get from working in relationships and I don't think that you can establish or grow a trusting relationship via email or PowerPoint presentations.

We, therefore, argue that the above empirical data exemplifies and indicates the importance of synchronous communications for flexibility roles such as innovation as categorised within the Open System model of the competing value theory. Similarly the above emphasis on "*trusting relationship"* implies the importance of face-to-face communication for the Human Relations model.

The respondents generally ranked phoning as an activity indicating importance, as best represented by the Investment Banker, who would ask people only to phone for important matters, and use email for the unimportant ones. The Global Business Development Executive stated that she decides to use phone when,

…there's a sensitive issue when I need to hear what the person on the other side is sounding like so I can gauge the reaction and how (and) what I'm trying to say is being received, what kind of feedback I'm likely to get, then I can tune the message that I'm giving so that I can more easily get the kind of feedback that I want.

The Construction Project Manager emphasised the use of phone in time-sensitive matters, where problems needs to be dealt with quickly, and the CEO further emphasised the need for speedily settle complex business details through interaction. The IT Security Consultant emphasised the differences between the mobile phone and email in terms of mobile and political aspects:

"If I have my mobile phone, I know I can be anywhere and not worry about it…the phone is for directness, and you can infer a lot from people's tone of voice that you can't get from email. Email, I think, is more political, because you're writing it for a purpose and a point, as opposed to a telephone conversation, which is more interactive.

As email, the phone (both landline and mobile) provides a relatively flexible service standardising network connections, and it is therefore not surprising that several participants focused on the relative perceived personal differences between using the two, and they are generally considered as complementing.

Video conferencing is a good example of a flexible technology supporting the organisational aim for flexibility and change. It provides a means of interaction readily available, albeit still requiring some coordination and control to orchestrate the session. When asked whether ICT added complexity to his work, the Surgeon argued that face-to-face meetings of course were easier with people from the same hospital, but in the case of people from different hospitals needing to interact, then video conferencing was an obvious technology to use. However, he also pointed out that they had experienced the technology restricting compared with face-to-face meetings and not enabling the appropriate atmosphere unless the participants were extremely familiar colleagues. The Investment Banker supported this by stating that face-to-face communication was more meaningful. Although substantial research and commercial effort has been invested in providing ubiquitous and flexible videoconferencing technology that can provide a realistic substitution for face-to-face meetings, distance does still matter, and mediate interaction technology greatly lacks affordances such as peripheral awareness, ease of turn-taking etc (Olson & Olson, 2000; Heath & Luff, 2000). Furthermore, the lure of instant-always meetings can easily lead to individual professionals feeling overburdened with requests for inteaction (Mathiassen & Sørensen, 2002). As argued by Intel CEO Andy Grove at the 1994 CSCW key not address, he travelled much less since he could give keynotes from

his own home. However, he had ended up giving ten times more keynote addresses.

4.3 Asynchronous Work

Email has, since it was given a proper graphical user interface and bundled for free with the Netscape Navigator emerged as one of the truly new technologies for all professionals and was by all of the participants except the Chaplain promoted as one of their primary technologies. The Interactive Marketing CEO stated that email provided *"…the ability to communicate complex ideas…and instantaneous*[ly]*."* However, as pointed out by the Vice-President of the technology company, the information derived from email messages is highly contextual and open for interpretation, a point further strengthened by the Global Business Development Executive, who stated that he in particular would use email to broadcast statements reflecting statements of intent or facts it important to bring to everyone's attention. The technology company Vice President further argued for the important aspect of email creating a persistent trace of human activity explaining that email trails can help *"Cover Your Ass"*. He did, however, also point out that this fact results in sensitive issues being handled on the phone.

E-mail can generally be characterised as an asynchronous technology supporting relatively flexible conversations and at the same time offering the possibility of a documentation of the conversations. In terms of information services, the technology provides a networking service standardising connections (Mathiassen & Sørensen, 2002). However, as communities of practice engage in ongoing email conversations, localised practices, norms, rules and genres can imply restrictions for the use of email.

Instant Messaging (IM) technology has a background in Unix Talk functionality, and despite failed general uptake of early versions, (e.g., Whittaker et al. 1997), the emergence of ICQ, AOL Messenger and MSN Messenger Service integrated in an Internet platform has in the past couple of years showed remarkable developments in user uptake. IM was by the professionals seen as one of the most used and most context-rich means of social interaction. The Entrepreneur felt that IM conversations could be quite innovative, *"especially with a multi-party conversation space with a lot of innovative ideas…I can go anywhere in the world and use MSN."* However, he did also argue that IM conversations differ radically from face-to-face conversations in that it is not possible to experience the other party's facial expressions and body language, potentially leading to confrontation, aspects further highlighted in the interaction literature (Olson & Olson, 2000; Heath & Luff, 2000). The Energy Broker was the only interviewee promoting IM as a primary technology, and he dedicated one of his three computer monitors to the IM client:

> *"One of those* [three screens] *is primarily for the messenger system, because I have 30 customers talking to me at any given time over that system…ever since we started using the messenger system, we've found that we've reduced our phone call usage 50%."*

5. Discussion

Generally, the interviews demonstrated substantial consistency of opinions and experiences across most of the professionals interviewed. It revealed a world of multiple technologies, but also one of quite selective adoption. Because the critical importance of maintaining acceptable working conditions and technology support in temporally and spatially distributed

settings, most of the interviewees would be quite reflective regarding exactly how tasks would be carried out. We documented reflections of a number of essential and distinct situations relating critically to the ongoing negotiation of organisational flexibility supporting emerging interaction, experimentation self-determination of goals and work methods, as well as the persistent need for maintaining some form of organisational control and stability in terms of documenting decisions, tracking, and stipulating behaviour.. We encountered the continuing role of paperwork in modern organisations despite attempts to virtualise and digitise physical documents. Several interviewees illustrated the importance of structuring technologies, such as databases documenting and ordering the messiness of modern organisations. We also encountered the strength and diversity of support for flexible modes of interaction represented by situations involving email, phone conversations, instant messaging, and video conferencing. It was in particular interesting to further document the immense effect of email and phone conversation as opposed to video conferencing. Again, we see that the technological promise of instant face-to-face meetings simply does not seem to be realised in actual use. Perhaps the additional coordination overhead of organising video conferences imposes a micro-barrier sufficiently high to stifle significant uptake. Perhaps the phone conversation simply has had sufficient decades behind it to foster an accepted genre. Email, on the other hand, as a new technology, has managed to establish itself because of no simple comparison, and therefore has not been burdened with high expectations of being a technical fix. Indeed, the case of video conferencing is interesting given the amount of research explaining the deficiencies of the technology in terms of providing substitution for face-to-face interaction, combined with immense commercial and research effort aiming at exactly rendering it on par with face-to-face interaction (Heath & Luff, 2000; Olson & Olson, 2000). We also saw yet a new technology emerging as a potential strong support element for professionals, namely Instant Messaging. Although it still ´does not seem mainstream support for most professionals, it was highly rated. The same could not be said for PDA support. Despite vast reduction in price, general availability, a reasonably mature technology, and plenty of experiments documented, this technology did not seem to be able to find itself a place amongst the professionals we interviewed. There were several cases of the technology being abandoned.

The study clearly documented work influenced by a multiplicity of technological choices. The professionals was forced to reflect upon their patterns of adoption and use of the available technologies, and we documented a situation more characterised by constant experimentation that by domestication of technologies. We also saw a dominance of flexible technologies supporting networking through standardising synchronous and asynchronous connections. Due to increased demand for organisational flexibility, the professionals constantly need to negotiate the structuring elements, and this is done through informal and flexible means.

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