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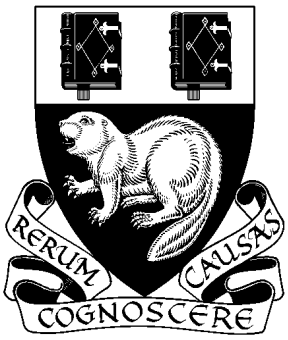

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The Virtual Organisation - Technical or Social Innovation? Lessons from the Film Industry

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Abstract

The concept of the virtual enterprise is being increasingly promoted as a model for a new form of Information and Communication Technologies mediated business enterprise. Initially, we will examine the concept of the virtual enterprise and the supportive role of Information and Communication Technologies as conceived by its proponents. Based on this initial understanding we will suggest the consideration of the film production process as an existing instance of virtual enterprise. The film production process is characterised by flexible adaptation to changing production conditions, similar to the virtual enterprise. The film production process illustrates the balance of flexibility and hierarchy which is required between contracted individuals who are involved in collaborative, creative, short-term projects. Throughout the paper, we will illustrate that there is much to learn about the virtual enterprise from this. To demonstrate the legitimacy of this claim, we will demonstrate how power, norms and communication are hierarchically embedded in the smaller infrastructure networks of the film industry. Through an analysis using Giddens' structuration theory we will suggest elements that are vital to the sustained success of the film production process and perhaps to the virtual enterprise. We will also briefly explore whether this organisational model could be used as a prototype that can contribute to a more practical conceptualisation of the virtual enterprise as a form of life.

Keywords: relationship and trust in virtual organisations; organisational structure; management issues; interpretivist perspective

Introduction

The concept of the virtual enterprise has emerged in management literature as the result of the fusion of technological advances and a claimed major socio-economic paradigm shift. The virtual enterprise can be seen as a temporary alliance of contracted individuals or companies linked together by Information and Communication Technologies (ICTs), which assembles for the purpose of a specific business task. Advocates of the virtual enterprise believe that it will replace the conventional model of organisation in the 21st century.

After providing a literature review of the virtual enterprise, we will examine the enabling qualities of ICTs. We will suggest that the adoption and implementation of ICTs is not an adequate substitute for a radical re-conceptualisation of work practices, which is necessitated by the virtual enterprise. Designing the operational infrastructure of the virtual enterprise is well beyond the scope and purpose of this paper. We will, however, attempt to illustrate the changing role and dynamic nature of ICTs in the virtual enterprise through the use of Giddens' structuration theory.

If the proponents are right then the transition to virtual enterprise symbolises a revolutionary shift in the conventional understanding of business practices and procedures. To understand this may imply it might be useful to analyse an existing production model that functions in an analogous manner. In order to accomplish this aim, we have chosen to examine the *film production crew*, as an instance of the virtual organisation. Through the comparison of the film production process and the virtual mode of operation, we will investigate whether the former organisational model could be used as a prototype for the latter or, at least, formulate a more realistic vision of the virtual enterprise through an analysis of the similarities and differences.

Virtual Enterprise: A Brief Review

Kraft and Truex (1994) provide an extensive list of the pop-management terms for the virtual enterprise: dissipative organisation; imaginary organisation; adaptive organisation; learning organisation; flex firm; agile enterprise; pulsating organisation; network organisation; and post modern organisation. This type of organisation has also been described as: a modular organisation (Tully, 1993); a value-adding partnership (Johnson and Lawrence, 1988); and organic network (Morgan, 1989). The lack of clarity under this metaphorical umbrella indicates the level of confusion in the interpretation of the term. For the purpose of this paper, we have chosen to employ the term virtual enterprise. Throughout this paper, we will define the virtual enterprise as:

A temporary alliance of contracted individuals or companies who assemble for the purpose of a specific business task and who are linked together by ICTs to share skills and costs and for access to one another's information and resources

It is necessary to summarise the conceptual evolution of the virtual enterprise in order to ascertain its validity, credibility and meaning. Jan Hopland, a Digital Equipment Corporation executive, originally coined the term 'virtual enterprise'. While researching strategic management changes in the 1990s, Hopland noticed that:

> It was clear we were entering into an age in which organisations would spring up overnight and would have to form and reform relationships to survive... 'virtual' had the technology metaphor. It was real and it wasn't quite real...it derives from the early days of computing when the term 'virtual memory' described a way of making a computer act as if it had more storage capacity than it really possessed (Byrne, 1993)

Hopland described a virtual enterprise as one “that can marshal more resources than it currently has on its own, using collaborations both inside and outside its boundaries.”(Byrne, 1993) In its embryonic stages, the virtual enterprise was an abstraction designed to capture the inevitable revolution that would characterise the corporate global environment of the next millennium.

In 1991, the industry lead report “21st Century Manufacturing Enterprise Strategy” articulated an agile future that would redefine conventional business structures. Manufacturers were encouraged to create “a flexible organisation with strategic focus, built upon cross-functional project teams.”(Nagel and Dove, 1991) Some of the key features of the virtual company, as presented in this report, are:

> Virtual companies offer the advantage of gathering only the requisite resources for a given venture; they represent total organisational flexibility. In particular, virtual company employees continue to work from their home company (the permanent company at which they remain physically located) as well. A number of companies share ownership of the virtual company, delegating appropriate employees and equipment to the virtual company, in return for an appropriate share of its eventual profits.
>
> Three revolutionary dimensions to the virtual companies are as follows: an electronically connected network of cross-enterprise project teams; modular enterprise structures, enabling the virtual company to draw on capabilities resident in appropriate units of the home companies; a new social contract in which employees identify with their virtual company endeavour, while remaining loyal to their home company. (Porter, 1993)

This report recommended that virtual companies would be formed through IT links between workers in different firms. The concept evolved and two years later Porter (1993) argued against this model, positing that virtual companies needed their own employee base in order to survive.

In 1992, Davidow and Malone wrote “The Virtual Corporation” which rapidly propelled the term into management jargon. They described it as:

> almost edgeless, with permeable and continuously changing interfaces among company, supplier and customer. From inside the firm the view will be no less amorphous, with traditional offices, departments, and operating divisions constantly reforming according to need (Davidow and Malone, 1992).

As there is little need for physical capital, a virtual enterprise can potentially spring up anywhere around a market opportunity through the deployment of human capital. Blau (1997) proposed that “virtual organisations are knowledge based as they depend more on knowledge assets than on physical assets... companies need intellectual capital, based on core competencies.” A virtual company has been defined as one where “complementary resources exist in a number of co-operating companies are left in place, but are integrated to support a particular product effort for as long as it is viable to do so. Resources are selectively allocated to the virtual company if they are under-utilised or if they can be profitably utilised there more than in the ‘home’ company.” (Goldman *et al.*, 1995). Expert talent is recruited for the duration of project and profit shares are allocated between group members.

The supportive capabilities of ICTs enable virtual enterprises to defy conventional organisational boundaries. Virtual corporations are designed to facilitate the creation or assembly of a broad range of productive resources quickly, frequently and concurrently. (O’Leary *et al.*, 1997) In this edgeless state of existence, virtual enterprises share “ideas and intellectual capital, resource and talent around the organisation quickly.” (Ashkenas, 1995) Champions of the virtual enterprise claim that it is a proactive approach to business, which will lead to the development of interconnected professional networks where reputation is able to leverage opportunity.

Flexibility, agility, adaptability all characterise the co-operative ethos of the virtual enterprise. The product life cycle will be radically transformed as "traditional sequence will be replaced by synchrony: specialists from various functions work together as a team, from the inception of research to a product's establishment in the market." (Drucker, 1994)

The notion of the virtual enterprise encompasses a number of different models. One dimension runs from joint equity ventures, with a full sharing of risk and reward by the partners to a model based upon a client contractor relationship. A second dimension is from an enterprise with a semi-permanent existence but based upon remote relationships to a limited life span, single project organisation A third dimension is from an enterprise based upon parts of a number of host organisations to a joint venture of independent contractors coming together. These three dimensions allow for a vast range of different models each with very different characteristics.

The concept of the virtual enterprise is hardly new (Goldman *et al*., 1995). What is new, is the claim to a unifying conceptual packaging encompassing the variety of possible virtual enterprises and the technological solutions to support the claim.. There are already multiple examples of successful virtual enterprise relations. Companies such as Oticon, Eastman Kodak, Ameritech, IBM, JP Morgan, Andersen Consulting, Philips Electronics, AT&T, Travelers Corporation, VeriFone, Apple Computer, Corning, McDonalds, Whirlpool and Toyota are exploring and investing in virtual business transactions. Such organisations often retain the core strategic functions at headquarters, including legal negotiations, public relations, human resources and labour relations. Specific projects are outsourced to expert teams from diverse disciplines and industries with the required specialised skills.

This approach to project management has been in existence for some time, however the name given to it has ranged from 'ad hoc groups' to 'task forces' to 'specialised business units'. This concept is similar to outsourcing, joint venture, and strategic alliance: trends that have characterised many business relations in the 1990s. Much of the rhetoric which surrounds the virtual enterprise creates the impression that it transcends the dichotomy of hierarchies and markets[1]. Due to the lack of a clear definition or even a synthesised conceptual notion, is difficult to clearly state the unique characteristics of the virtual enterprise. Nevertheless, most futuristic authors predict the virtual enterprise will be differentiated from traditional organisation forms as it "will be reliant on the medium of cyberspace, will be enabled via new computing and communications developments, will initially only exist across conventional organisational structures." (Barnatt, 1995). From the discussion above it seems that the virtual enterprise might be a logical coming together of organisational, business and technological innovations of the last decade. The developments in information and communication technologies, especially, seemed to give the final impetus for bringing together a group of emerging ideas under the single notion of the virtual enterprise.

Information and Communication Technologies as Medium

Numerous forms of information and communication technologies exist that can support the communication of geographically disparate workers. In this section we will examine the role of

[1] In his seminal inquiry into the nature of the firm, Coase (1988) argued that firms were initially established to minimise transaction costs on the market. Firms emerged "in a specialised exchange economy in which it is generally assumed that the distribution of resources is 'organised' by the price mechanism." To reduce operation costs such as exchanging information, negotiating contracts, marketing and decision making, firms came into existence.

groupware as an overarching enabling technology. Throughout this technological review we will emphasise the dual nature of information technology, "which focuses attention on how information technology shapes human action through its provision of structural opportunities and constraints, while also recognising that information technology is itself the product of human action and prior institutional properties." (Orlikowski and Robey, 1991) However, we will posit that ICTs are essentially enabling tools in the support of business practices in the virtual enterprise.

Computer Supported Co-operative Work (CSCW) applications are employed in corporations to enable groups to be more self-sufficient and interconnected. Groupware is the technological instrument that aims to support and augment communication. The purported benefits of groupware are increases in stakeholder participation, group decision-making processes and cross-unit communication. The popularity of groupware has markedly increased in the 1990s as it provides an alternative to centralised systems, which were perceived to inhibit stakeholder participation. Groupware is perceived to be a technological solution that bridges the gap between traditional and emergent organisational structures, such as the virtual enterprise.

Groupware is rooted in Group Decision Support Systems, which can be conceptualised as the hybridisation of Management of Information Systems, Organisational Theory and Decision Support Systems, (Khoshafian, 1995). The groupware domain is based on the time (real and asynchronous) and space (same and different) continuum. Groupware solutions are intended to apply ICTs to enhance collaborative effort both in face to face environments and, particularly, where participants are separated in time and space. It also facilitates group memory by recording change and progression and increases co-ordination by enhancing team members' communication.

Several factors may be fuelling the rapid development of groupware such as the aggregation of technologies to assist in collaborative work. The proponents of groupware posit groupware as a means to induce organisational change. According to vendors, groupware changes work processes, as a collaborative communication tool. The primary benefits of groupware are claimed to be: increased productivity; integration of geographically disparate teams; better cost control and customer service; increased competitive advantage through faster time to market; and leveraging professional expertise. (Coleman, 1995) However the contribution of the technologies is not separate from the organisational change that both requires the implementation of the new systems and is enabled by it. Ciborra(1996) talks of the *care* with which a groupware system is implemented, but also identifies this as a local and contingent phenomena which requires the correct organisational setting to lead to a successful implementation.

Organisational change is characteristically perceived by stakeholders as an agonising and arduous process. The transition from personal to network computer systems is accompanied by employee reticence and mistrust. In her examination of an application of Lotus Notes, Orlikowski (1996) demonstrated that employees experienced a radical shift in the nature of their work, as it was transferred from the private to the public domain. As organisational work procedures became shared they became more visible and the workplace became more transparent. Orlikowski(1996) argued that with visibility comes vulnerability and scrutiny which can have a negative effect on employee morale. However, she counters this with the analogy of a window into issues and problems shared by all members of the group; this enabled groupware to provide opportunities for proactive forms of collaborative work to emerge from spontaneous mutual assistance

The vast body of CSCW literature illustrates the diverse and multiple effects that groupware has on organisational change. Groupware often has "multiple meanings for members of an organisation hosting it" (Ciborra, 1996) and therefore a variety of expectations surround the implementation process. Often ICTs are deployed as a catalyst for corporate cultural change to

induce an empowered environment. However, many case studies illustrate that stakeholders have tremendous difficulty with this transitional process due to shifts in power relations. (Orlikowski, 1991, 1992, 1996; Bowers, 1995) From an aggregate perspective, this stream of research suggests that collaborative communication cannot be successfully enforced via ICTs. Information and communication technologies may be necessary but they are not sufficient for the organisational transformation promised by the proponents of groupware.

Groupware design also has implications on individual work practices. Information that is stored on an intranet, extranet or in Lotus Notes creates a public organisational memory bank, which is easily accessed and scrutinised. Many employees perceive groupware enabled open access as a threat to their job security and reputation. Information hoarding is a common defence reaction and inhibits the success of groupware projects.(Bird, 1995) The adjustment to an open information-sharing environment instigated by groupware can be challenging for employees who are accustomed to a competitive work environment. Despite the many positive reports on groupware, it is crucial to consider that intra-organisational communication is fraught with difficulties, without the added complexities of inter-organisational relations.

Not only will the lack of a global standardised platform present tremendous management challenges, but also, with the rapid development of technological solutions, the cultural integration and knowledge sharing issues will be complex social factors to be surmounted in the virtual enterprise. Groupware may enhance participation in communication procedures however it does not necessarily create a participative environment. The misleading assumption that implementation of groupware leads to organisational emancipation and enhanced performance is a major source of contention and confusion. (*see* Zigurs et al, 1988) Human communication is often wrought with interruptions and various psychological barriers that inhibit the flow of information exchange and group interaction. The computerisation of group communication threatens to overlook the subtleties that are crucial determinant in traditional modes of communication, specifically face to face. Electronic signals convey fewer historical, contextual and non-verbal cues and they hardly cater for emotional exchange. (Argyris, 1971). Despite the challenges of verbal group communication, it does efficiently communicate nuances of meaning and frame of mind, organisational loyalties, symbolic variations and individuating details about people that might be involved in their dress, location, demeanour and experiences (Kiesler et al, 1990).

If the key distinguishing feature of the virtual enterprise—vis-à-vis previous organisational innovations such as strategic alliances, task forces, and so forth—is that it is ICT enabled, then the ambiguous nature of ICTs, as indicated above, will ensure that the virtual enterprise will be elusive for some time to come. The virtual enterprise requires a concept of ICTs embedded in organisation practices which confront the limitations and ambiguities of ICT mediated communication. ICTs embed their conditions of construction rather than their conditions of use, they suffer from the absence of the continual ability, present in face to face communication to renegotiate meanings according to contextual exigencies. The challenge is to understand the organisational practices that enable virtualisation and the negotiation of social meaning to co-exist. It is the nature of these practices that we hope to learn about from the analysis of the film production process as a prototype of the virtual enterprise.

The Film Production Process and the Virtual Enterprise

Diverse examples of virtual enterprise exist in various industries; such as film, construction, aeronautical engineering and pharmaceuticals. Segments of each of these industries is characterised

by one-off projects which require a temporary grouping of experts who disband once the task is completed. In this section we will concentrate on the film production process as an instance of a virtual enterprise based on the notion of flexible specialisation.

The film industry is a prime example of how production clusters can be co-ordinated into a robust production process. As a labour institution, the film crew represents a system composed of short term contracted employees in a highly creative environment. As an internal organisational structure, the film production crew is almost rigidly hierarchical. Within this process teams of experts unite temporarily bringing their core competencies to the creative, production event. Contracted crew members collaborate temporarily on short term, singular projects. In short, the production crew is a network of experts in which the aggregate members combine in various dynamic structures at various times. It is not possible, within the scope of this paper, to give a detailed account of the film production process. We will have to draw on a general notion or commonly held general impression and provide the necessary detail as we go along.[2]

To provide more contextual data to our interpretation and argument we interviewed four accomplished feature film producers and a virtual organisation consultant—listed at the end of the paper—using semi-structured and unstructured interviews. It must be noted that the purpose of the data is *not to prove* our arguments but to add richness to the interpretation.

Analysis and Reflections

In the last section we pointed out that the film production process seems to be a successful example of a virtual enterprise built on co-operation, communication and collaboration. If the virtual enterprise is to become a seriously considered organisational innovation then we believe there are many lessons to garner from the film production process. In this section we will portray the main similarities and differences between the film production process and the virtual enterprise.

Structuration Theory

It is beyond the scope of this paper to detail structuration theory (Giddens 1976, 1984) and only a few key notions will be highlighted. Giddens posits that the institutional properties of social systems can be seen to be both the medium and outcome of interaction. (Roberts and Scapens, 1985) In structuration theory there is an iterative effect between human action and the structural properties that mould human action. Giddens (1982) describes his interpretation of social systems as: “man (sic) actively shapes the world he lives in at the same time as it shapes him.” Unlike more traditional social system theories, structuration theory depicts the iterative relationship between individual action and institutional structures.

Structuration theory is appropriate in this particular analysis as it specifies that “all human interaction is inextricably composed of structures of meaning, power and moral frameworks and that any interaction can be analysed in terms of them.” (Orlikowski and Robey, 1991). In order to link the institutional realm with the realm of human action, Giddens provides three *modalities of structuration*; which are interpretive schemes, resources and norms. Giddens (1979) perceives interpretive schemes as forming “the core of mutual knowledge whereby an accountable universe

[2] For more detail on the film industry and the film production process refer to Thompson and Boswell (1997), Wasko (1994), and Storper and Chistopherson (1989).

of meaning is sustained through and in processes of interaction." Resources provide the capacity to act or the ability to change through the use of power. The use of power in organisations is "mediated via the organisational resources that participants mobilise within interaction." (Giddens, 1979). Norms are the guiding principles and rules that govern the organisation and legitimise conduct. "Normative components of interaction always centre upon relations between the rights and obligations expected of those participating in a range of interaction contexts." (Giddens, 1984).

Giddens' structuration theory will be the framework in which we will compare the virtual enterprise and the process of film production. We will present the modalities of structuration and then concentrate on power, meaning and structures of legitimacy. In the following analysis we will examine the tacit conditions that are specific to each modality through which humans are shaped and reshaped.

Power

Power, the control of resources, within the film production process is centralised. Well established, industry-wide, hierarchies clearly define roles, responsibilities and levels of accountability within the production team. Members recognise the standard, compartmentalised structure and know how to fit into the various positions within the organisational infrastructure. Hierarchies of accountability are an essential component in the film production process as they enable a rapid development process on large-scale projects among freelance workers.

From our analysis of the film production process it seems that the hierarchical conceptualisation of power is vital for the relationships in the virtual enterprise, despite the rhetoric of flattened hierarchies. In the film production process *professional titles* play an essential part in establishing roles and responsibilities. Robert Jones illustrates the importance of sustained hierarchies throughout the production process.

> β RJ: …there is always hierarchy, there has to be. Contracts are a last resort for legal reasons associated with termination. There has to be a hierarchy of reporting and control in the same way that there is in every long-term business. A film is no different than a long term business. A five million-pound film is a company that has a five million pound turnover in less than a year. It has to have a certain number of formal controls and reporting structures. The one who is ultimately responsible is the producer as he has responsibility to third parties.

Professional titles and associated roles and responsibilities seem to be relatively stable over time, and from production to production. This will be less true within the emerging forms of the virtual enterprise due to the diverse nature of work that changes with each project. The creation of forms-of-life (Wittgenstein, 1956) which give these titles and roles stable and mutually intelligible meanings is described later.

It is interesting to note that within process of film production there seems to be a simultaneous co-existence of flat and hierarchical organisational structures. When the production is running smoothly the informal, flat and fluid system of communication and power works well. Although the hierarchy remains explicit through core members' titles, film sets generally seem to operate in a fairly loose and informal manner on a day to day basis. However when crisis situations arise, a rigid hierarchy reappears to structure the situation and the appropriate responses. Nik Powell provides an example where a rigid hierarchy emerged in a crisis situation.

> β NP:… When there is a crisis I will come in to help out. For example, Dark Blood, which was River Phoenix's last film was shot in Utah. Joanna was producing it and before he died we were already into big problems. They lead actress wasn't getting along with the

director etc... Joanna asked me to come out and I spend 4 weeks sorting things out. The week they went to LA to shoot, River died and we had an even bigger problem. The role of producer is to keep the pressure from the backers off of the director so they can make the best picture possible.

- Question: When you went into help with the crisis on Dark Blood did you have the final say?

- NP: Oh yes, absolutely. But I don't tell anyone that. They just know that I'm boss. If I'm there it means that something serious has to be sorted.

From the above comments and from those made by Simon Channing Williams below it seems that during the process of film production the hierarchical conceptualisation of power works best when hidden.

- SCW: Power is not something I would particularly want. Power for power's sake is not helpful. You do have hierarchical power because ultimately you have the right to hire and fire people.

- Question: Is this power implicit or explicit?

- SCW: If it is implicit it is more useful. When it's explicit it's unhelpful. Simply because you can get the crew's back up if you wield too much power. If you make a sacrificial firing it does not help anybody. … It's much easier to make things happen in a quiet and comfortable way. You expect all of the heads of department to fight their corner. Once the decision has been made you expect everyone to get on with it.

It seems appropriate to view the production process through multiple layered lenses. One focusing on the foreground (flat) and the other focusing on the background (hierarchy). This dichotomous design is often unstated and is implicit within the pool of organisational knowledge.

From the film production process it seems that hierarchies of accountability do play an important role to help structure roles and responsibilities within the virtual enterprise. As each new virtual enterprise requires a new organisational structure dependent on the type of project, hierarchies would ensure that members are explicitly aware of their specific roles. The process of virtual operation may function informally on a day-to-day basis; however at moments of decisive interventions, hierarchies are essential for mapping out power structures in the virtual enterprise. The actual day-to-day operation of power is much more contingent and hidden than is suggested by examining the formal structure (Foucault, 1980;1983).

Moral Sanctions, Norms and Reputation

Norms are continuously created and recreated in organisations through individuals use of moral sanctions as they interact. (Orlikowski and Robey, 1991). Legitimate behaviour within the organisation is shaped through norms, which in turn guide human action. These organisational rules articulate the *status quo* which govern human action within the institution. "Normative components of interaction always centres upon relations between the rights and obligations expected of those participating in a range of interaction contexts." (Giddens, 1984) Rituals and social processes evolve over time to shape norms however the role of structuration properties in shaping human action is "often transparent to human actors who believe they operate freely within the organisation." (Orlikowski and Robey, 1991).

The *reputation* of participating members is a key feature which affects and structures norms in the film industry and, one would expect, the virtual enterprise (Ching et al, 1996). In the virtual enterprise and the film production process participating members' reputation affects the trust they are granted. Handy(1995) has argued that it is trust that structures ethically justifiable behaviour in the virtual enterprise. In the structuration of norms, trust is an essential component as it directly affects moral sanctions and notions of legitimacy. Most often trust is established through members' reputations and further actions, which are shaped by the institutional norms. As the producer Robin Jones points out:

> β You have to trust the director. The more reputable a director the less likely there are to be major problems. Hopefully one does contracts at the beginning of the film and you never have to look at them again."

Thus, in the film production process we see that the normative force (legitimacy) of a particular individual's actions are tied to their perceived level of trustworthiness, which seems to be embodied in their reputation. For most producers and directors reputation is decisive in deciding issues of legitimacy: "…with us, a lot is based on their reputation from their past projects."

The difficulty in establishing norms both in the virtual enterprise and in the film production process is the temporary nature of the venture. In the film industry, due to the historical development of the film production process, an explicit set of norms—linked to professional roles—has emerged which is applicable to the majority of projects. Another difficulty in the establishment of norms in the virtual enterprise is that the virtual operation is edgeless. Geographically disparate experts will be linked through ICTs on a short-term basis, which decreases the likelihood of creating and sustaining trust or norms, if they are not already available as a set of accepted practices encoded in a way of doing thing in a wider arena as has been described in the film production process. The participating experts in the virtual enterprise will not have enough time to develop trusting relationships or norms. The lack of a discernible and coherent set of norms could be a serious threat to the virtual enterprise This problem cannot be resolved simply by attention to contract details, contract arrangements work well when they reflect existing norms and expectations; they are less effective at creating trust and norms.

Meaning and Communication

Giddens' interpretive scheme deals with the communication of knowledge and meaning which is achieved through "stocks of knowledge that humans draw on in the production and reproduction of action." (Orlikowski and Robey, 1991). This is of particular interest in the analysis of the film production process and the virtual enterprise as communication is regarded as work, not as an adjunct or support function for work. (Grenier and Metes, 1995).

Communication is a vital component of both the film production process and the virtual enterprise. Both instances require an accessible language that transmits potentially ambiguous meaning rapidly. The need for this localised language (jargon) is especially acute in both instances as they depend on freelance experts to work together on short-term projects, with little or no adjustment period. Due to the inherent complexity in large-scale film productions and virtual enterprises, a common lexicon is vital to link all members so they may work effectively from the beginning of the project. Context-specific language is essential in the both instances so that experts can communicate directly with one another. In the case of the virtual enterprise, this communication will most often be mediated via ICTs. This technological reliance makes the establishment of a common lexicon both more urgent and more difficult as experts will not be

engaging in expressive, interpersonal communication, as the earlier discussion of groupware showed. As trust is usually engendered through face-to-face contact between organisational members, this could prove to be a serious handicap to the virtual enterprise unless specific practices are developed to overcome it.

Throughout the history of the film industry, a specialised language has been developed to integrate complex communication in the large-scale production process—this embodiment of tacit knowledge can be referred to as *film-speak* (Introna, 1997). In film production a highly specialised jargon is embedded in the culture which contributes to the common pool of industry knowledge. Film-speak is a vital synergistic resource in the industry as it enables freelance members to understand roles and meaning on any project. The culture of the film industry is established through its jargon and sustained through the reinforcement of it from project to project.

Negotiation of meaning, roles and responsibility is less problematic through this integrative jargon. For example, "lead man" is the crew member that is responsible for tracking down various props for the set. "Loader" is the member of the photography unit who unloads camera magazines as well as logging the shots and sending the film to the lab. The shout of "Action!" produces instinctive movement by some crew members and instinctive stillness and silence by others. In different contexts these terms would have radically different meanings. Members of the production team are, however, able to align themselves in very intricate and subtle ways to the specialised production process—also communicate relatively unambiguously within this sphere of this 'shared' organisational knowledge. Sally Hibbin speaks to the importance of film-speak on film sets and the difficulties that are encountered on a culturally mixed crew:

β SH: I've worked on several films lately which have had mixed [cultural] crews. I did *i.d* as a co-production with Germany. *Carla's Song* had a huge chunk of Spanish crew. While the common language is true at a larger, national level, co-productions can be very frustrating because you can think you are speaking the same language and you find out that you are not at all, the hard way. There is actually a huge gap which has to be filled, i.e. 'we thought your accountant did that, not ours'. There is a new level of meaning to learn. Nationally, in Britain anyway, communication in the film industry is fairly unambiguous. One of the challenges of a co-production is finding a compromise, a new way of understanding and working with each other.

The understanding of technical tasks is efficiently communicated by the use of film-speak; this reflects the elements of the film production process that are a factory style production process with interchangeable staff. However the other dimensions of film production around the creative process are about much more private languages and understandings, where mere competence in technical roles is not sufficient. At this point a particular director requires a particular camera operator who can understand, at an almost completely unspoken level, the director's intentions. It is the creative aspect of a face-to-face crew that will present the greatest challenges to the virtual enterprise, especially where the elements of repetition of task and process between projects are less than they are in the film industry.

Wittgenstein (1956) posits that a language is always situated in a local, specialised context, a form-of-life. The specific vocabulary employed in the shared life-world establishes a unique meaning for the members of the network in question. Film-speak enables members of the film production enterprise to articulate specific meaning through the standardised terms, which are embedded within the situation. This form of organisational knowledge has evolved throughout the course of the development of the film industry, which spans more than a hundred years. Tacit skills have been captured in film-speak over a century of socialisation within the film industry. If there is

a breakdown in communication, the Wittgenstein's concept of 'family resemblance' helps to create some commensurability to bridge the chasm of meaning (Wittgenstein, 1956).

The creation of such a localised language is also relevant in thinking about virtual enterprise. As the virtual enterprise is founded on the concept of short-term alliances of diverse industry experts, the development of a virtual-speak is highly problematic. Along with their core competencies, members will bring their specialised industry lexicon to the virtual enterprise. As they will only work together temporarily it is doubtful that they will have enough time to establish a common pool of organisational knowledge where meaning would be contained in jargon. (Introna and Tiow, 1997)

Colin Price suggests that, at the outset, popular business language might serve as a unifying plateau or as the lowest common denominator. As the process of negotiating meaning in the virtual enterprise will likely involve considerable effort and time investment from participating members, a productivity paradox might emerge. The fundamental lack of a common language (virtual speak) might make the present concept of a virtual enterprise unfeasible. Colin Price offers the following example where the lack of common jargon is problematic in virtual enterprise:

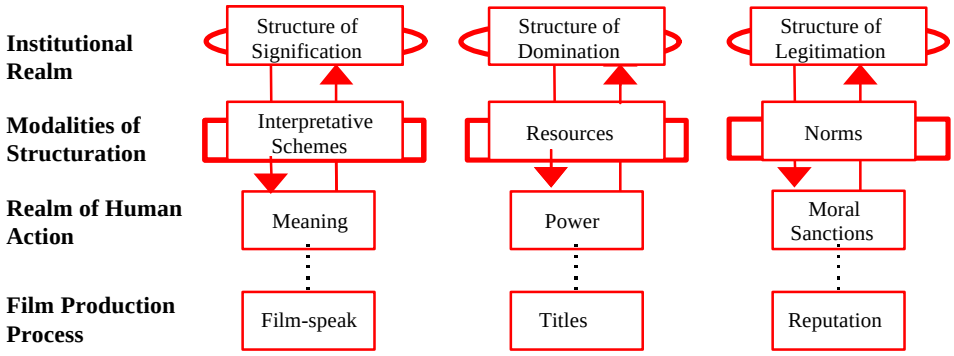
β CP: An example of a virtual organisation is an e-commerce project we're working on. The four partners are from telecommunications, computer, communication/satellite and financial sectors. You get real communication problems because the same terms literally mean different things to each sector. 'Revenue' to a Telco means something very different to a bank. This can be quite problematic....Language is a reflection of the richness of the expertise of people and the whole idea of having a virtual organisation is that you bring together a diversity of expertise.

Networks of Partners?

In film production, crew members often develop a high degree of compatibility, trust and understanding through extensive working relationships. It is common for members to work together many times throughout their careers. Networks of familiarity are established as crewmembers work on various sets together. For example, the director delegates tasks to trustworthy personnel; "hence the tendency of directors to work habitually with certain actors, cinematographer and so on." (Thompson and Boswell, 1997). Simon Channing Williams speaks to the importance of familiarity within working relationships: "Usually from working experience the director and producer are aware of people they want to work with." Loyal, long-lasting professional relationships evolve naturally as members' skills complement one another.

Similar developments could occur within the virtual enterprise. The virtual network of partners might emerge as multi-disciplinary teams are established with integrated work practices and communication. The virtual network of partners might consist of a group of specialists who have worked together over an extended period of time and have articulated tacit knowledge into a context-specific 'virtual-speak' and a shared common-sense of the processes that are necessary in order to achieve mutually understood goals and a part of the equipment of each partner (Introna, 1997). In this milieu, the virtual enterprise benefits from the creation of a partitioned yet sustained organisational knowledge. As in the film industry, experts of the virtual enterprise would then be aware of the common goals, boundaries, meanings, roles and responsibilities. In this context, power, communication and legitimacy will be shaped through extended interaction. This combination of familiar freelance experts who have worked together before alludes to the stability associated with more traditional business partnerships. Perhaps once the rhetoric surrounding the virtual enterprise subsides, we will witness the re-emergence of alliances between trusting and competent partners, for what they actually are.

The essential structural components of the film production process as related to Giddens' structuration theory can be summarised thus:



Conclusions and Implications

In thinking about power in the virtual enterprise, it seems that hierarchies of accountability are essential. Organisations are dynamic entities, which continuously oscillate between abstract goals and real world situations. Virtual enterprises are no different. Through the use of *titles*, roles and responsibilities (and thereby hierarchies) are created. These hierarchies operate informally and implicitly unless a specific crisis point would make it explicit. It seems appropriate to assume that both fluid and hierarchical management structures will continue to exist with the onset of the virtual enterprise.

In the realm of norms, it seems that participating members' *reputation* remains important in the assemblage of a virtual team and a film crew. The difficulty in assessing a members' reputation in the virtual enterprise is that most interaction will be supported by ICTs. How are members to engage in a meaningful socialisation process where norms are created and recreated if their only contact is electronic communication? One could surmise that norms would take longer to develop in the virtual enterprise, as participants require a longer period to adapt to this new form of interaction. This lengthy adjustment period is necessary for participants as virtual business transactions symbolise a larger behavioural change. As these are the basic hallmarks of corporate culture today, the transition to virtual enterprise will most likely be cautious and incremental.

The critical area that is not sufficiently accounted for in the virtual enterprise is the creation of a common language in which partners can communicate with unambiguous meaning. In the film production process the importance of *film-speak* emerged as fundamental to the structuring of meaning. The lack of consideration of this fundamental component of organisational knowledge renders the concept of the virtual enterprise weak. If there is a lack of a common language how will the virtual model be economically feasible? The amount of time and effort required to establish a

common language that reduces negotiations seems to counter the rationale of the virtual enterprise. The naive assumptions regarding knowledge and language put forth by proponents could pose a serious threat to the spread of the virtual enterprise (Introna and Tiow, 1997).

We have outlined the network of partners as an alternative solution to the 'cold call' virtual enterprise. The network of partners would be composed of specialists who have worked together before. Their previous work experience might surmount the organisational language and knowledge hurdles. However, if this model were adopted, the network of partners would only be virtual in the sense that members are geographically disparate.

It seems clear that the there are still many organisational innovations as well as technical innovation required if the virtual enterprise will become the new and dominant form of organisation it is claimed it will be. Nevertheless, the film production process is informative in indicating some areas that could become the focus for these innovations.

List of Interviewees

Nik Powell, Film Producer

In the early 1970's Nik Powell set up Virgin Records with Richard Branson. In 1982, Powell went into partnership with Stephen Woolley, proprietor of Scala Cinema. Together they formed Palace Pictures and then Palace Productions, soon establishing each as highly regarded entities within the film distribution and production industry. Powell has acted as executive producer on all of Palace's productions including Neil Jordan's *The Company of Wolves, Mona Lisa* (which won Bob Hoskins the Best Actor at Cannes and an Oscar nomination), Frank Clark's *Letter to Brezhnev,* Michael Caton-Jones *Scandal,* Julien Temple's *Absolute Beginners* with David Bowie, *A Rage in Harlem* starring Danny Glover an Forest Whitaker, *Waterland* with Jeremy Irons and Richard Stanley's *Hardware* and *Dust Devil*. On Neil Jordan's Oscar-winning *The Crying Game*, Powell acted as sole Executive Producer.

Robert Jones, Film Producer

Robert Jones was the Director of Acquisitions for Palace Pictures and Video. He was responsible for identifying (at script or largely unfinished stage) *When Harry Met Sally, Prince Sign O' the Times, My Left Foot, The Cook, The Thief His Wife and Her Lover, Nikita, Cinema Paradiso, Shattered and Wild at Heart.* Contracted by Polygram in 1992 to acquire features for international distribution companies. Titles included: *Death and the Maiden, Shallow Grave, Reservoir Dogs, Malice, A Bronx Tale, Man Bites Dog.* Produced *The Usual Suspects* which received two Oscars and two Baftas. Executive produced *Sirens and The Englishman Who Went up a Hill but Came Down A Mountain* . Jones produced forthcoming release *The Serpent's Kiss* and *One in Four (aka Dad Savage).*

Simon Channing Williams, Film Producer

Simon Channing Williams started working at the BBC in 1964 and became freelance after 5 years. He has acted as First Assistant or Production Manager on the following films: *Grown Ups, Arturo UI, Greystone and Widows*. In 1981 he progressed to Associate Producer with the following credits: *Miner, Wager and Death in Venice*. In 1988 he was invited to join up with Mike Leigh as a joint producer for Portman Productions. His producer credits include *Life is Sweet, Short and Curlies, Naked, Jack and Sarah, The Great Kandinsky, Secrets and Lies, Career Girls and Women with Balls.*

Sally Hibbin, Film Producer

Although there are far too many to mention here, some of Sally Hibbin's credits include A Very British Coup, Riff Raff which won the 1991 Cannes Critics Award and the Felix European Film of the Year Award and Ladybird, Ladybird, which won the Critics Award at the 1994 Berlin Film Festival. As well she is widely acclaimed author.

Colin Price, virtual organisation consultant

Virtual organisation consultant with Price Waterhouse

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