Lessons From Managerial Theories for Improving Virtualness in Electronic Business

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Abstract

Electronic business and virtual organisations are important research topics in the IS research community today. At the same time these research topics are very appropriate for interdisciplinary research. The panel aims:

- presentation of lessons from managerial theories for improving organisational virtualness;
- exploration possibilities for interdisciplinary oriented research forum of the phenomenon virtual organisations in electronic business.

Chapter 1 discusses electronic business and the role of information and communication technology (ICT) in changing fundamentally electronic business transaction patterns between economic actors. New intra- and inter-organisational structures are emerging, known under labels like virtual organisation, virtualisation and organisational virtualness. These emergent virtual organisational structures will be considered as a challenge for (continuous) transformation. Chapter 2 gives an overview of the panel presentations of different approaches of change (management) found in managerial literature and their lessons for virtual organisations. Lessons are presented from strategic choice led, improvisation or market led, network interaction led, stakeholders led and evolutionary stage led concepts of change.

1 Introduction: Organizational Virtualness and Electronic Business

Arien Wassenaar

1.1 Objective and Structure of the Paper

Electronic business and virtual organisations are important research topics in the IS research community today. At the same time these research topics are very appropriate for interdisciplinary research. The panel aims:

- presentation of lessons from managerial theories for improving organisational virtualness;
• exploration possibilities for interdisciplinary oriented research forum of the phenomenon virtual organisations in electronic business.

Chapter 1 discusses electronic business and the role of information and communication technology (ICT) in changing fundamentally electronic business transaction patterns between economic actors. New intra- and inter-organisational structures are emerging, known under labels like virtual organisation, virtualisation and organisational virtualness. These emergent virtual organisational structures will be considered as a challenge for (continuous) transformation. Chapter 2 gives an overview of the panel presentations of different approaches of change (management) found in managerial literature and their lessons for virtual organisations. Lessons are presented from strategic choice led, improvisation or market led, network interaction led, stakeholders led and evolutionary stage led concepts of change.

1.2 Definition of Electronic Business

Electronic business is in this paper considered as a general comprehensive term and is defined based on Wigand, Picot and Reichwald (1997) and Wassenaar and Swagerman (1998) as:

„application of information and communication technology to enhance or redefine any form of resource exchange between firms and their customers, suppliers or other business partners governed by dedicated intra- and inter-organisational structures and general (inter)national agreed institutional arrangements“.


1.3 ICT enabled business transaction patterns and organisational virtualness

In the 90’s firms are facing new developments like globalisation, economical, political and technical unpredictability, world-wide competition and co-operation on the market place, mass customisation and customer demands for shortening time to market (Gartner, 1991). Companies have to improve their responsiveness (flexibility) on global markets. Electronic business enforces —by introducing quite new business transaction patterns between firms and their partners— an
ongoing reshaping of intra- and inter-organisational structures. At one side, organisations are internally broken up in small self-containing business units co-ordinated by quasi-horizontal market mechanisms. On the other hand, organisations are externally integrated in an interdependent network co-ordinated by quasi-vertical hierarchical mechanisms. These new emergent intra- and inter-organisational forms are described in literature under labels like network organisation (Miles and Snow, 1986), intelligent enterprise (Quinn, 1992), associations (Wassenaar, 1995), virtual value chains (Benjamin and Wigand, 1995), virtual organisation (Sieber, 1996), and electronic markets and electronic hierarchies (Malone e.o. 1997). Virtual organisations will be considered as continuous transforming intra- and inter-organisational structures embedding and controlling communication processes within and between companies consisting on a portfolio of vertical and horizontal co-ordination mechanisms for governance of new electronic business transaction patterns. Structures are considered as conditions and constraints embedding processes.

1.4 Organisational Virtualness

These new virtual organisational forms—shaping fundamental changes in the commercial, physical and financial processes and their underlying information and communication processes—are enabled by new ICT applications. Especially, ICT enlarges the range and reach of information exchange between economical actors by a standardised technical ICT infrastructure facilitating new forms of communication in commercial, physical and financial logistic processes that support electronic business transaction pattern within and between companies (Keen, 1991).

1. The (intra- and inter-organisational) commercial process patterns, like identifying trade partners and negotiating contracts, have to be redesigned by implementation of telecommunications networks together with multimedia facilities for enhanced product presentation and specification, like Internet and World Wide Web. New concepts like Efficient Consumer Response (ECR) (Coopers and Lybrand, 1996), Electronic commerce (Kalakota and Whinston 1997) and Electronic markets (Bakos, 1991) can be realised. There is a shift from physical markets and value chains (place) to electronic or virtual markets and virtual value chains (space) (Rayport and Sviokla, 1995).

2. The (intra- and inter-organisational) physical production and logistic processes like distributing, transport and warehousing are becoming reengineered by a new breed of standard software packages like Enterprise Resource Planning (ERP) and Operating Resource Management Systems (ORMS). This software together with the breakthrough of Internet’s open standards and a new breed of information brokers has given the way to the virtual factory: a community of dozens, if not hundreds of factories each focused on what it does best, all linked by elec-
tronic networks that would enable them to operate as one-flexible-and-
inexpensive regardless of their locations.

3. The (intra- and inter-organisational) financial logistic processes—reflecting the money or fund flow in combination with the flow of goods and services—are becoming more and more tightly integrated. Banks will no longer be able to generate interest-based revenues and they will in the future charge only on the volume of transactions, as the trend towards just-in-time money develops (Holland et al 1995). Virtual banks will emerge just like virtual factories (Swagerman and Wassenaar, 1998).

Basically, organisational virtualness is the responsiveness of intra- and inter-organisational structures on new (electronic) business developments determined by the interdependency of four elements:

1. opportunities for new electronic business network transaction patterns;
   • contracted in virtual markets and value chains (electronic commerce);
   • produced in virtual factories (electronic physical logistics);
   • accounted in virtual banks (electronic financial logistics);
2. enabling portfolio of ICT applications;
3. controlling and integrating ability of electronic business management
4. intra- and inter-organisational structures seen as conditions and constraints.

1.5 Improving Organisational Virtualness as a Challenge of Change

(Continuous) transformation and adaptation of intra- and inter-organisational structures are needed in order to facilitate over time new electronic business transactions patterns and the belonging commercial, physical logistics and financial logistic process patterns and their underlying communication processes enabled by emergent ICT capabilities. Management science is a source of interdisciplinary approaches to electronic business problems (e.g. Gebauer, 1996). Therefore we will review different approaches of change (management) in managerial theories and summarise their lessons for improving organisational virtualness of intra- and inter-organisational structures.

The following managerial theories will be discussed:
• strategic choice led theories
• improvisation or market led theories
• network interaction led theories
• stakeholder led theories
• evolutionary stage led theories
References


Ciborra, C.U., (1997) „Improvisation and Information Technology in Organisations“.


2 Lessons from Strategic Choice Led Theories

*Arien Wassenaar*

No single issue has so dominated the attention of top managers, consultants and management theorist as the subject of corporate strategy. In a vast outpouring of writing on the subject during the last forty years management theorists have come up with many alternative views. Soon after the second world war, when a new class of professional managers began to start for ideas about how to run big companies the original view of strategy was borrowed from the military. Baron von Clausewitz writing his classic work "On War" for the German General Staff stated that the most effective general concentrates his forces on the few significant battles. Managers still talk about attacking markets and defeating rivals.

By the sixties corporate strategy had come to mean a complex plan based on detailed forecasts of economy and specific markets. This approach to strategy fell into disrepute during the 1970's. The two sudden oil price rises also meant that many firms had to tear up their plans and start again. However, this is not to say that forecasting is useless in a world of rapidly changing technology. Forecasting can be useful but only in certain ways -not as a driver of strategy.

Then in 1980's Porter launched his book "Competitive strategy". The structural analysis of industries instead of being a specialised planning tool for forecasting evolution over considerable periods becomes useful as a capability to quickly understand the continuously evolving nature of the industry. He argued that a firm's profitability was determined by the characteristics of its industry and the firms’ position within it, so these should also determine its strategy. Applying the
analytical techniques common to industrial economics, Porter said that a firm's primary task was to impure transparency of markets by creating niches it could defend from competitors, either becoming the low cost producer. Nonetheless his ideas have had limited impact on how most firms go about formulating strategy. Porter's checklists provide little guide to what firms should actually do or avoid doing. Every firm likes to be in an industry with high barriers to entry, weak rivals and high profits. But few are so lucky.

At the same time Quinn (1990) published the results of studies about how (big) firms actually went about formulating strategy. Quinn found that they proceeded by trial and error, constantly revising their strategy in the light of new experience. He called this "logical incrementalism". The qualitative nature of uncertainty has changed in one further important matter. Industry dynamics have become increasingly non-linear as waves of technological change have swept across industries. For example, the basic model for technology diffusion —the learning curve— is the classic example of non-linear relationship that can exhibit chaotic behaviour. Under conditions of non-linearity, cause and effect are not proportional and strategic responsiveness of organisations is the watchword. Traditional industrial analysis is similar to taking a snapshot of a moving target.

Further, Quinn is raising in his publication the "Intelligent Enterprise" question marks on the concept industry of Porter, usually described as being composed by firms producing products that are close substitutions. However the boundaries of industries are seldom clear and are changing over time. There is a movement toward disaggregation where large multipurpose organisations are broken up in networks of specialised units. Hamel and Prahalad (1990) stressing the expansion of a firm’s core capabilities made the most influential strain of theorising about theory in the 1980’s. Their message was that in an era of rapid technological change and resultant unpredictability, sustainable advantage is far more likely to come from organisational resources, capabilities or competencies than from formal long range strategic planning.

Drucker (1988) envisioned a future wherein „business will integrate themselves into the world economy through alliances“. One of the reasons is that information technology is moving so quickly that it is impossible for businesses to keep up without forming strategic alliances with other businesses as well as with other non-commercial entities as universities.

He notes that in the future work will move to where the people are, rather than people will move to where the work is, and therefore business have to farm out to concentrate on their own unique core competencies. This farming out is termed by Quinn and Hilmer (1994) as „strategic outsourcing“ so managers can leverage their firms’ resources and skills for increasing competitiveness. Their message is in line with Hamel and Prahalad’s ideas.
Conclusions

Despite the changing fashions, decades of theorising have not been entirely useless. How a company views strategy does depend largely on its circumstances. Big companies, having a dominant market position, may find Porters industry analysis illuminating for matching their resources with its opportunities and for influencing external industry forces. Other companies may find Hamel and Prahalad’s theory useful to set goals that stretch a company beyond what most of its managers believe it is possible. All firms should try to exploit and hone their skills.

In strategic choice led managerial theories change is considered as a top down strategy driven transformation process often by pursuing co-operative advantages in partnerships and strategic alliances in a world of electronic business. These theories are in general dominated by a proactive management attitude (Wassenaar, 1996). Based on Konsynski and McFarlan (1990) and Wassenaar (1995) these theories can be summarised in lessons for improving organisational virtualness in electronic business.

1. **Partnering companies have a clear vision (shared destiny) and focussed market strategy supported by involved top management.** It is a key factor for success in electronic business: there are business objectives whether it be cost reductions, obtaining new markets or cross-selling services elaborated in key performance indicators to measure progress. These objectives have to be agreed by all internal and external involved partners.

2. **Companies have not only to focus on commanding a higher profit margin but they have to erect barriers to affect competitive forces.** Competition increasingly takes place among networks and not atomic firms based on platforms like the Intel/Microsoft based network currently competes with the Apple/IBM/Motorola based network. Therefore common platforms are locking in their customers by high switching costs and are creating high entry barriers for new rivals.

3. **Companies together have a focus on complementary competencies:** internally on developing „best of world“ capabilities around a few activities —the company competencies and externally (partners) on managing a rapidly changing network of „best in world“ partners for its other needs. It is important they improve their competences by continuous improvement based on common assessments, learning mechanisms and intensive relationship with other institutions like universities.

4. **Companies have (reciprocal) skills and competencies in information and communication technology.** (Partnering) companies work better when they possess the necessary skills to manage the complex information technology that may be involved. These companies have to develop (complementary) core competencies especially in the field of information and communication technology. Attention has
to be given to develop and organise data exchange systems in a way it is useful for the partners.

5. **Companies have concrete flexible implementation plans based on step by step projects and if possible starting with early successes.** These plans have to be managed by inter-company task forces responsible for executing projects and coordinating (and developing) common electronic business policies and standards for financial, marketing, quality, logistic and information systems. It is important, that plans are flexible in order to face changing circumstances or surprising new developments and opportunities.

**References**


**3 Lessons from Improvisation or Market Led Theories**

*Elisa Moreno Bragado*

Hayek (1945) described the **market** as a discovery process, where new opportunities and innovations are relentlessly found out and the news of such findings are transmitted instantaneously through the price system. The market constitutes the framework in which organisations perform their activities from two different perspectives (Ciborra, 1997a):

- In first place, the requirements of the market outline the goals, plans, strategies etc. that the organisation is willing to achieve; the achievement of certain goals and objectives is called the „in-order-to“ motives of action.
- At the same time, past experiences when trying to reach those objectives also determine the kind of actions to perform; this frames the „because-of“ component of action.
Independently of the reasons to perform certain activity, the organisation will face a transformation, which will be more or less dramatic depending on the objectives to reach, and the organisational path dependency. In this section, transformation is considered as a bottom up, incremental and individual driven process of change. Therefore strategy’s devising is a formation process, instead of a formulation one.

**Strategy** is the creation of a unique and valuable position, involving a different set of activities (Porter, 1996). This is true for the physical value chain, but it is also applicable for the virtual value chain, in which information is not only a supporting element in the value-adding process, but a source of value itself (Rayport and Sviokla, 1995). Any strategy seeks the development of business’s competitive advantage (Henderson, 1989), and therefore, a change or transformation in order to match the requirements of the market.

Mintzberg (1987) defines strategy as plans for the future and patterns from the past. In this definition it is possible to find a „in-order-to“ and a „because-of“ element. The presence of these elements in this concept is due to the way Mintzberg reached such definition: strategy is defined *a posteriori*, after the action has been carried out and managers are aware of the activities that enable such performance. Furthermore he also accepts that strategies „*can develop inadvertently, without the conscious intention of senior management, often through a process of learning*“. This emerging strategic management conceptualisation describes strategic decision as messy, disorderly and disjoined processes (Hutt e.o., 1988).

In this (to some extent) chaotic context, **improvisation** is playing an essential role. Ciborra (1997a) defined improvisation as „*situated performance where thinking and action seem to occur simultaneously and on the spur of the moment*“. Many a-posteriori called strategies have an improvised origin. Improvisation is possible and successful if there is enough knowledge that can support a non-planned decision. Otherwise there is a big risk of failure if the results of improvisation are not rightly controlled.

That knowledge is provided through a **learning process**. As pointed before, the learning process plays an important role in the formation (as well as it does in the formulation) of strategies. In order to understand the sources of knowledge and the learning processes, Ciborra (1997b) described the „*learning ladder*“. This model shows that knowledge is created in four different levels: routines (experiences or work practices), capabilities (skills), core capabilities (skills that confer a competitive advantage) and formative context (organisational context, culture, values…). Those four levels determine the learning process and the knowledge that evolve from it.

Therefore even if improvisation can be, and in fact it is, a way of strategy decision making, it is influenced by the knowledge of those who improvise. That
knowledge is determined by the learning process by which it has been achieved. And at last, this learning process is determined by the resources of the organisation, the past experiences, business mission, competitive environment and other factors. Consequently knowledge acquisition is a path-dependent process. Path dependency means that the way a firm owns its assets (capability or competency) depends on the process through which they were acquired (North, 1990).

Those influencing factors can be defined as a set of rules that affect the improvisation practise. Using the terminology of the Institutional Economics discipline, those rules are called institutions: "institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" and they provide a structure for everyday life (North, 1990). They can be formal constraints (like laws or contracts) or informal (values or customs). Having into account that only those rules that affect the expected payoffs of actors can be titled as institutions (Eggertsson, 1997), it is possible to accept that the rules affecting learning process are informal institutions since they influence the performance of the organisation.

Furthermore institutional factors are also to be found in the market side of our analysis. In this case, rules’ sources are threefold: consumers (when determining the requirements of the products and services), technology (that determines the final characteristics of those products) and competition (or how other organisations react before the same situation).

All those constraints or institutions aim to reduce uncertainty about the environment by providing certain behaviour patterns. The virtual organisation, due to its special characteristics —among them, the use of information technology for accessing the market-space, and the fast changing environment, in which they are working— can be defined as a complex system. In order to achieve a consistent solution to problems in complex systems, a sequential process that involves institutions is necessary. "Dealing with all issues simultaneously exceeds the computing capability of individuals", and therefore individuals have to operate with an institutional rationality (Colander, 1996).

Conclusions

In this section we have defined the market as a set of rules and also as a discovery process in which organisations are embedded. In this framework and having into account that in last term the performance and activities of organisations seek to fulfil the requirements of the market, we are analysing a decision making mechanism through strategy formation. Figure 1 shows the schema of the conclusions of this paper.
In our view market-led action would have two origins: improvisation (or strategy formation) and planning (or strategy formulation). In this section the focus is on strategy formation, in which improvisation plays an essential role, even if it appears this concept cannot be matched with that of strategy because it is too formal.

Nevertheless, what it can not be denied is that even improvisation is determined or to certain extent, influenced by a set of rules or institutions that will guide the direction of that non-planed performance. Those rules are part of the learning process by which organisational knowledge is achieved:

- On one hand these rules come from the very organisation so they will ensure a result coherent with the rest of the organisational activities, culture and objectives.
- On the other hand, the characteristics of the market will state the direction of the action.

Even if individuals are not aware of the rules or institutions in which they are embedded, —since these constraints can be formal or informal—, their influence is essential in order to facilitate the solution to certain high complex problems, by providing action guides. A complex problem is that of transformation in virtual organisations to match the requirements of the market. In an anarchic (and hypothetical) situation, where there are no rules, a successful result can not be guaranteed.

Besides the learning process commented above, it would be possible to recognise another relationship between organisational level and market level. This process is a learning one in which markets and industries „learn“ from the activities, decisions and skills of organisations. Competitors, consumers, providers, and other

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**Figure 1: Improvisation on Market Led Decision-Making**

The diagram illustrates the relationship between market, learning process, planning, and improvisation. The key points include:

- **Market** as the driving force for action.
- **Planning** (Strategy formulation) driven by rules such as competition, customer requirements, and technology.
- **Improvisation** (Emergent Strategy) influenced by values, culture, path dependency, corporate objectives, and other factors.
- **Learning Process** (Interaction Processes) integrating all elements to facilitate decision-making.
participants in the market will recognise the performance of certain organisation. If the results of such performance are successful, the market will accept the sources of that action as general accepted patterns (i.e. institutions).

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Ciborra, C.U., (1997a) „Improvisation and Information Technology in Organisations“.


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Background Literature

In this section, literature about the topic is provided, which has not be used as references.


Buckley, P.J. and J. Michie, (1996) „Firms, Organisations and Contracts“.

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1 This issue is the research objective of the Ph.D. project „Interaction processes between Organisations and Industry“, which is currently carried out at the University of Twente (The Netherlands).
In this section is acknowledged, in the light of new arrangements emerging between organisations, the uncertain nature of organisational reality which inherently involves various forms of disputes, differences in cognition, opinions, etc. Uncertainty is a widely recognised feature of modern organisational reality (Handy 1996). In organisation studies, post-modernism (Clegg and Hardy 1996) emphasised uncertainty as a general process of destabilisation. These new conditions demand new ways of thinking with regard to organising and managing.

Clegg (1990), for example, views post-modern organisational forms, among which are virtual organisations, as alternatives to modernistic forms such as those described by Morgan (1986) in constructs of organisations as machines and as organisms. If we accept the view that organisations have been able to modify their forms to the extent that they might now be described as post-modern, the network approach and process approaches in general will be able to explain how and why organisations have made this transition. Many of these 'new' organisational forms depend on co-operation with other organisations. All this requires an attuning of the diverse activities conducted by different organisations.

4 Lessons from Network Interaction Led Theories

Ariane von Raesfeld Meijer

In this section is acknowledged, in the light of new arrangements emerging between organisations, the uncertain nature of organisational reality which inherently involves various forms of disputes, differences in cognition, opinions, etc. Uncertainty is a widely recognised feature of modern organisational reality (Handy 1996). In organisation studies, post-modernism (Clegg and Hardy 1996) emphasised uncertainty as a general process of destabilisation. These new conditions demand new ways of thinking with regard to organising and managing.

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In the case of electronic business development, usually a new technology is adopted only if a large part of the network involved accepts the attached technical standards. In these circumstances, co-operating with various counterparts could decrease risks, shorten cycle times, lower investment and create better responsiveness to the different actors of a network. This implies that successful electronic business development requires that attention is paid to exchange relationships with customers, suppliers, competitors and other important stakeholders.

In the light of this, the insights of the Industrial Network Approach (e.g. Axelsson & Easton 1992) seem relevant. In order to describe electronic business development on the level of the network, one can use studies of technological development in industrial networks (Håkansson 1987; 1989). The model of industrial networks (Håkansson 1987) with its three groups of variables (actors, activities and resources) provides a basis to describe substantive activities in networks. The industrial network model can be used to describe the content, process and context of electronic business development. The content refers to particular areas of electronic business. The process of electronic business refers to the actions and interactions from the various involved actors. The context of electronic business refers to other past and present substantive interactions in the network. In this model actors in a network are considered to allocate resources and perform activities together. In the network model two types of activities are delineated, transformation and transaction activities. Transformation activities are characterised by resources being improved by the use of other resources. Transaction activities are concerned with the exchange of resources; they link transformation activities and create relationships with other actors. Resources are the means used by actors when they perform activities. Possible resources are physical (machinery and materials), financial and human assets (labour, knowledge and relationships). When we relate the network model to the area of electronic business development, substantive activities can be described by reference to the actors participating in the electronic business development who perform activities and control resources. From a network perspective, technological innovation and thus developing new electronic businesses, comprises three aspects: knowledge development, resource mobilisation, and resource co-ordination.

Here, this section continues by discussing how electronic business development projects may be assessed and managed. Assessment involves some sort of evaluation about whether the technological innovation develops in the 'right' direction. However, especially in new electronic business development, where outcomes are unclear and where participants have different goals, the 'right' direction can only be assessed in retrospect (Weick 1979:194), which is rather too late from a management point of view. Therefore, it is proposed to view electronic business development as evolving through the elimination of undesirable qualities (Morgan 1986:358). Consequently, assessment will be based on exposing such undesirable qualities. This approach considers hindrances in new electronic
business development as undesirable. Accordingly, one can deduce from the Industrial Network Approach some conditions that could hinder electronic business development. Emphasising, however, that ultimately the participants in the projects are the ones who have to decide whether specific developments are desirable or undesirable.

The Industrial Network approach distinguishes four forces that could have a stabilising effect on networks (Håkansson 1987:17) and therefore could hinder technological development. These four forces are:

1. *Functional interdependence*: actors, activities and resources together form a system where heterogeneous demands are satisfied by heterogeneous resources.

2. *Power structure*: on the basis of control over activities and resources there are power relations between the actors. The performance of the activities is to some extent organised on the basis of those power relations.

3. *Knowledge structure*: the design of the activities as well as the use of resources is bound together by the knowledge and experience of present and earlier actors. The knowledge of the actors is related to one another.

4. *Inter-temporal dependence*: the network is a product of its history in terms of all memories, investments in relationships, knowledge, routines, etc. Changes of the network must be accepted by at least large parts of the network. Therefore all changes will be marginal and closely related to the past.

**Conclusions**

On a macro-level these four forces could be used to detect the present hindrances in electronic business development.

This approach has been used to describe and assess a case where seven organisations co-operated to develop the Electronic Data Interchange (EDI) for the Dutch construction industry. The project was followed in real time from the start in December 1992 to the end of the first phase in February 1994 (see Von Raesfeld 1997). From the case study one can conclude that the four network forces reflected the interactions in the network. The project seems to have been especially hindered by the existing functional dependence of one of the participating organisations in the network and the use of power by the Director of this organisation. Moreover, the parties in the construction industry did not yet seem ready for EDI. This lack of functional dependence and power structure concerning EDI hindered the project. The findings showed that the substantive interactions in the larger network had an observable effect on electronic business development. The general conclusions of the case study:

1) That existing network conditions can hinder the electronic business development.
2) That if there is no network basis to support the electronic business development progress will be slow.

3) That the industrial network approach can be used to describe, assess and support management of electronic business development in networks.

References


5 Lessons from Stakeholders Led Theories

Pieter Ribbers

Research on the effects of IT on exchange organisations is relatively new. Early research applied transaction cost theory and agency theory to predict shifts from hierarchies to market form of organisations. The central argument of this line of research was that IT would improve communication, search, monitoring and information sorting capabilities, thereby reducing transaction costs and enabling purchasers to take advantage of production economies available in markets.

A critical drawback inherent in this analysis was the definition and treatment of markets in abstract economic terms. In reality, different market structures exist, e.g. direct search, brokered dealer and auction markets. Each of these structures organises the trading process and related information processing activities in dif-
ferent ways. Thus the role and impact of IT can vary across types. The literature provides some examples. Konsynsky at all provide a descriptive case study of an electronic market in used cars[14]. Clemons and Weber examined the effects of computerisation on the London Stock Exchange.

Due to the convergence of IT and telecommunication, and the proliferation and availability of bandwidth, the impact of electronic markets is expected to grow rapidly. Their effectiveness is however dependent on their design. Existing research in this new area provides examples of relevant issues supporting an effective design.

Also the literature shows that most researchers view markets (auctions) as single isolated markets (auctions). This viewpoint is however too narrow. E.g. Dutch flower auctions are market places in an international flower market. There are other market channels among sellers and buyers. Competition between other markets and market channels is an important element in explaining the success of an electronic market.

Market organisations are the meeting point for multiple stakeholders: buyers, sellers, and intermediaries with conflicting incentives. Given existing or competing market alternatives, no new IT based initiative is likely to succeed if any stakeholder is worse off after the IT enabled innovation.

The concept of stakeholders has been introduced in the study of organisations. As put forward by Simon and March not organisations but people have objectives. Stakeholders are those whose contribute to the functioning of an organisation and whose contribution depends on what is received in return. The continuation of the contribution is dependent on the degree that goals of stakeholders with the organisation are met.

Electronic commerce systems, like electronic markets are organisations. They depend on the continual contribution of different stakeholders. We can distinguish between buyers, sellers and intermediaries (those who organise and offer the electronic market).

Stakeholders behave in a bounded rational way. They are motivated by their goals and by satisfying behaviour. Their decision to enter an electronic market will be based on the perceived contribution to their individual goals.

The concept of stakeholders is important to understand the success or failure of electronic commerce systems.

6 Lessons from Evolutionary Stage Led Theories

Rajesri Govindaraju and Dirk Swagerman

In this part of the panel paper, we would like to explain the two ways of change in order to achieve the virtualness of the organisation: evolutionary and revolu-
tionary change. The relationship between the evolutionary change process and the organisational virtualness will be stressed.

Rapid and uncertain change is the most unsettling marketplace reality that companies and people must cope with today. The pace of innovation continues to quicken, and the direction of innovation is often unpredictable. Co-operation within companies but especially among companies, is the key to the competitive advantage offered by the challenges posed by a business environment dominated by change and uncertainty (Goldman, 1995).

Although there are many reasons that make it may be easy to encourage the use of virtual organisation concept, it is not yet simple to form and operate a virtual organisation. Some of its advantages give rise to its most significant implementation difficulties. To achieve something virtually, implies the introduction of a new process or a new structure (Saaksjarvi, 1997).

The implementation of virtual organisation requires an analysis of the technical and work systems in a company. The change in behaviour and structure needed for this is enhanced and enabled by a number of systems in a suitable infrastructure.

There could be made the division between evolutionary and revolutionary change process (Venkataraman, 1991). These changes in their relation with the virtualness of the organisation are possible by means of the use of information technology (IT). The formation of virtual enterprises is possible only if communication and information exchange technologies are capable of supporting the plug compatibility required by the organisational structure of virtual companies. Venkataraman (1991) described several levels of change that electronic integration stimulates—from increased functional integration to changes in the business’s scope— and each of these extends the reach of the change project.

The phenomenon that changes happen due to the use of IT leads to an opinion that IT can be used as “enabling factor”. The term “enabling factor” means that the particular factor, in this case IT, could be used as a strategic objective for reaching the organisation’s goal.

Benjamin said that IT-enabled change process is different from more general change processes. They create unique issues for managers. Managers must know how to integrate the technology, business processes, and organisation in order to achieve the goals they expect with the technology (Benjamin 1993).

Knowing the fact that IT is one of the enabling factors for organisational virtualness, technological changes happen due to the use of IT that is playing an important role in the organisation. Even more important are changes in managerial values, organisational structure, and the prevailing corporate culture paradigms that are required. Work force empowerment, self-organising and self-managing cross-functional teams, performance- and skill-based compensation, flatter managerial
hierarchies, distributed authority, and point-of-problem decision making are all expressions of moving toward the acquisition of business capabilities (Goldman, 1995).

It is common to consider the introduction of IT in companies as a more revolutionary change, but in this paper we would like to mention that this change could also be seen as an evolutionary process. It is not a matter of good or bad which type of change process could be applicable. It depends on a set of contingency factors.

The introduction of IT will lead to all kind of organisational virtualness application and phenomenon, such as group-ware. The organisation’s objective is that the organisation will migrate towards a form of organisational virtualness. The objective will be led by some business reasons and strategic direction. In that case the organisation has to choose between evolutionary change or revolutionary change, depending on the contingency-factors. An important element that will be incorporated in this decision process is the cultural factors.

<table>
<thead>
<tr>
<th>CHANGE CONCEPT</th>
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<tbody>
<tr>
<td><strong>Evolutionary Change</strong></td>
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<tr>
<td>Step-by-step approach</td>
</tr>
<tr>
<td>Continuous improvement</td>
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<tr>
<td>Learning organisation</td>
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<td>Incremental approach</td>
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<tr>
<td>Sustainable growth</td>
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<td>Harmonious</td>
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Figure 1: Different Change Concepts

It is not right to say that one form of change is better than another. The use of induced change depends on situational factors, we could say that these factors are the contingency-factors of relevant change concept.

The application of that contingency-factors is used for the first time by Lawrence and Lorsch, for explaining different organisation forms depending on the organisation in their environment (Lawrence and Lorsch, 1977). Later on, these concepts were further developed by Mintzberg. He explained that there are only a few contingency factors relevant for the main organisation structure (Mintzberg, 1979). We could see that depending on the environmental factors and the organisational goal, organisations will make their decision of using a particular change model.
We will see how the evolutionary change process is relevant for the organisational virtualness.

If an organisation has a high expected degree of resistance against change, it is better to use the evolutionary change concept, by means of the incremental approach. One important comment must be made in the Business Transformation Model (Venkataraman 1991). Business process redesign (BPR) is a part of the revolutionary change process. The IT as an ‘enabling factor’ will be used for a fundamental and revolutionary change at the current procedures. In our way of thinking a BPR could be also realised by means of other instruments. In the past, the term ‘organisational development’ was frequently used for a fundamental change process, not led by IT. The fundamental change of process in an organisation using BPR concept and not based on the revolutionary change concept, is that an organisation will migrate step-by-step, as a form of continuous improvement toward the desired end situation. If an organisation would like to migrate towards organisation virtualness, redesign of the processes are necessary. This could be done in an evolutionary way.

Contingency theorists stress the importance of an organisation’s ability to adapt to its environment. Evolutionary models specify a cycle of variability, natural selection, and ongoing modification. Evolution is driven by either changes in the environmental context or the entrance of variant „species“ of organisation that is better able to compete for scarce resources. The change stimulates other organisations to modify their forms, and a number of variations emerge. Organisations that can not adapt, decline and fail. When a new „population“ of organisations becomes established, forces of inertia impose other, and only incremental adjustments occur until the next radical environmental changes (Applegate, 1994).

**Conclusions**

Organisations must recognise that to manage the change enabled by IT in its relation with the organisational virtualness is very important. The change can take the form of revolutionary or evolutionary change. If an organisation would like to migrate towards organisation virtualness, redesign of the processes is necessary.
The evolutionary change process is a suitable change solution for certain organisations. Based on the contingency-factors, the appropriate change concept could be chosen.

References


Lawrence, P.R., J.W.Lorsch, (1977) „Organisation and Their Environment“, Addison Wesley.

