

# ON THE SCANDINAVIAN APPROACH IN THE NETWORK ECONOMY – SOME REFLECTIONS ON THE IMPORTANCE OF CONTENT AND CONTEXT

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## **Abstract**

One of the reasons for the success of the Scandinavian approach is usually connected to aspects related to the division of power. We argue that one important reason for its success is also related to the user's knowledge about the content, which is embedded in the system, and how this content fits into the business process. Today much of the focus is on the internet and the use of internet-related techniques, while those aspects related to the organisation of work supported by technology seem to have been almost forgotten. Moreover, there is a heavy focus on standardisation. These conditions ought to initiate the same debate as in the start of the Scandinavian approach. However, there is no sign of that and we argue that one of the reasons it may be due to the user's increased knowledge about the content. In this paper we discuss some of these ideas and provide some initial thoughts about the importance of meaning and context.

*Keywords:* Scandinavian approach, division of power, content, ontology, network society, knowledge, meaning, knowing about, semantics

## **The historical background - the division of power**

The so-called Scandinavian approach consists of three approaches: The system theoretical school, the socio-technical school and the collective approach (Bansler, 1987). Nurminen (1988) has replaced the collective approach with another approach: Human-Scale Information systems, based upon the idea of the responsibility of the single user. In this essay we shall concentrate on the three last approaches even if the first one without doubt is the most common one (Flensburg & Friis, 1993).

The origin of the two first approaches is to be found when the Tavistock institute moved from England to Norway in the beginning of the 60:s. At Tavistock an insight raised during the 50s (Mumford in Schuler & Namioka, 1993) that self steering groups was the best way of organising the work based upon an assumption, grounded in general systems theory, that it is not enough only to consider technical factors when designing work. As a result the human relation movement was formed. However, in England heavy critique raised from the trade unions, because they thought it was a new trick from the employer's side to get more work for less money from the employees. As a result, part of the Tavistock institute had to move to Norway, where the first project within the collective approach started in 1970 (Torsrud & Emery 1970, Nygaard 1974).

In the 70s and 80s, there was much talk about the Scandinavian approach in the context of collective approach. At the same time, a similar approach based upon socio-technique emerged (Mumford 1983, Docherty et al 1984, Friis 1990). During the 90s their common roots were recognised (Bjerknes, 1995) and after that was not so much heard about them.

The traditional setting for Scandinavian approach projects was development of new information systems, which should embrace the whole or a great deal of the company and often introduced a considerable increase of control and decrease of individual freedom. With assistance from researchers, trade unions tried to intervene. We have the well-known projects NJMF, Demos, Due, Utopia, Sydpol etc described in many reports, which was produced for the research society (Greenbaum & Kyng, 1991, Bjerknes & Dahlbom, 1990). In practice, the results were not so overwhelming as might be the impression from the reports. Still you can today find reports and thesis within the area (Rantapuska 2002, Gäre 2003).

The main driving force in all these efforts was the asymmetric distribution of power. The collective approach claimed that it was impossible to come to an agreement between employers and employee. The only solution was negotiations about every single decision (Ehn & Sandberg, 1979). These negotiations was to be carried out by the trade unions and their claim on the systems development process was clear decision points, where formal negotiations could take place. The systems development model was thus not very different from the traditional one. It can, if we take the extreme case, be argued that for the end user there was no difference whether it was a participative project or not. It was more or less a matter of who paid the consultants. Nevertheless, to be fair, for instance in Bjerknes & Bratteteig (1995) a more nuanced picture is presented, but still, the focus lies within work democracy.

The Scandinavian School was a matter of philosophy, an attitude and not very much about the use of specific tools, techniques or methods. Nevertheless, one technique has survived from these days and even gained a lot of acceptance in systems development of today, and that is prototyping. It was first introduced in the Utopia project and was later picked up in the socio-technical approach (Floyd 1984, Friis 1990, Flensburg & Friis 1999). Today it is almost a must to develop a prototype in every systems development project.

In contrast to the Big Systems approach, typical for both, the collective approach and the traditional system theoretical approach, one approach namely called End User Computing (EUC) focused on small support systems for the users (Flensburg 1986), developed by them. In this approach the focus was not so very much on power issue as on the possibilities for achieving well functioning systems in short time (Boars 1986, Lanz 1987).

It is to be noted that these issues were actually on the agenda already in the beginning of the 80s in the famous UTOPIA-project (Bødker, Ehn et al, 1985). Here Ehn introduced the concept of "design", which turned out to be of increased importance (Stolterman 1991, Löwgren & Stolterman, 1998). In the design perspective, the function of the system is the most important one. In fact, we can see a

similarity between the EUC and the “design approach” in this focus on functionality or rather “usability”, which in our opinion is a better concept. During the 90s, a wider concept “Participative Design” (PD) was introduced (Gill, 1996) to cover all aspects.

## **Knowledge**

Another focus introduced early in the debate was knowledge. There were many dimensions, ranging from the need for knowledge to handle the new technology to the de-skilling of the workers when computerised information systems were introduced. In the first Swedish collective approach project (DEMOS 1979, Ehn & Sandberg 1979) it was argued that there should be two parallel investigations and the employer should pay for the education of the employee in systems development methods. In Norway, another approach was chosen: The reports should be written in such a language that they were possible to understand for the trade union people (Nygaard 1974). As a consequence, a Simula compiler was developed, which used Norwegian words instead of English ones (“Begynn – Slutt” instead of “begin – end”, Nygaard & Bergh, 1972).

Many researchers picked up the concept of tacit knowledge. Most of them refer back to Polanyi (1966), but we also find some references to Aristotle (Flyvbjerg 2001, Flensburg 2001) and his very elaborated knowledge concept. Also, Järvinen (2001) among others have pointed out several aspects of knowledge. Anderson (2002) provides a good overview of this field.

Surprisingly enough, not many researchers talked about the object of knowledge, it was only talk about knowledge per se. It was emphasised “knowing that” and “knowing how” (Cook & Brown 1999), the eventual transition from tacit knowledge to explicit knowledge was discussed (Nanoka. 1990), Davis (2002) talks about job-specific tasks, but as far as we know, nobody talked about “knowing *about* something”. “Knowing that” points to factual knowledge: “it is a fact that we have 34 Powerbook G4 for sale”, “knowing how” points to skill, when a potential customer enters the shop you know immediately how to approach her. But “knowing about” is focused on the object for knowledge, on those Powerbooks G4, of which there are 34 for sale. Probably this is a lie, since you normally not have so many computers free for sale.

## **Focus on content instead of the division of power**

We now argue that “size matters”, due to the fact that when a multiuser system is developed, it is always done within the frame of a project and thus authority issues is always at hand. When dealing with single user systems, authority is no problem. In fact, Nurminen (1988) presents a perspective where the user is responsible for all actions within the organisation. The computer knows nothing and does nothing. Instead, it is the content of the system, which matters. In fact, we might argue, contrary to the common opinion, that *the reason for the success of the Scandinavian school is not the shared authority, but instead the possibility to focus on the content of the system that shared authority permits*. The same focus is also inherited in the design approach that also has had some success. To our knowledge this point about the systems content has never explicitly been argued for, even if Nurminen (1988, 1990) comes close when he talks about HIS and transaction costs. Still, what matters, is the content of the system, what is written on the screen and not who has the authority of the development process.

Our arguments for this claim go along the following lines:

- Many people do not bother about the division of power as long as they can get their job done. This is very clear in the EUC. “Getting the work done” is what matters.
- What are important in a work context are the possibilities for doing the work. Authority is one dimension, but only one. Having the material at hand is in fact more important, since if you don't have for instance the desired information you can't do the job, even if you have full authority.

- If you do not have the needed information at hand, you cannot do the job. If you do not have authority, it is in fact easier to blame somebody else and take a relaxed attitude towards the work. However, if you have the information you can do the job and still be relaxed.
- If the authority should be the most important issue, we would have the same discussion now, when a new way of working is launched using internet (Flensburg 2002). We think this argument is one of the most important and will elaborate it in some depth. First, we shall argue that the introduction of internet creates genuine new opportunities for interacting and doing business. Next, we shall argue that in modern management theory the need for personalisation, creating relations etc are put into focus. Still, in systems development contexts it is talked about standardisation and we see a growing trend of replacing the old homemade systems with standard systems and adopting the company to those systems. We foresee a contradiction, which in the future might result in loss of business opportunities for those who standardise too much. Thus, the most important issue will be the possibility to deal with the content in the system and customise them.

## **Entering the internet and a new businesses**

Around 1995 the internet and the WWW were introduced in broad front within companies. New web-based opportunities were immediately realised by smart business consultants and the so-called IT-bubble was blown up during the last five years of the old millennium. WWW was a technique that differed mainly from the techniques used so far. It was a technique not able to control; it was a technique that could and should be used for genuine personal freedom. It was a hard blow in solar plexus for those advocating the asymmetrical distribution of information that was at hand during those days. In addition, it provided content to the users without having to cope with long and tiresome development projects.

Another important fact was that with the introduction of internet one could move information from one place to another at the cost of almost zero. The global market was established. The basic obstacles for e-business were removed and the borders between the organisations were possible to throw away. The network society (Castells 1996-98) was at hand. It provided genuine new opportunities, for good and for bad. In this context, we shall explore the possibilities for participative design in the network society. We recognise two contradictory tendencies in business of today: Increased focus on relations and increased focus on standardisation.

## **The network society**

The first step is to show that the “internet revolution” is something genuine new. First, we quote Batt (1999), who says, when talking about the information society:

“It is my view that the trends we are now seeing have all the makings of a social revolution, perhaps on the scale of the Industrial Revolution, but very different.”

One difference is described by Nardi et al (2002), who says that

“In the past, much work took place in relatively stable settings. Many people were employed by large corporations. Long-term established relationships existed between businesses, suppliers, and customers.”

This is no longer the case since (ibid):

As recent management literature has documented, however, these working conditions are rapidly becoming obsolete (Jacoby, 1991; Oravec, 1996; Bishop, 1999, Cappelli, 1999). Many companies are downsizing, reducing layers of management, and automating routine jobs. There is an increased focus on business relationships between companies (Ancona and Caldwell, 1988).

This tendency also indicates that power and authority issues lose their importance. Today it is a matter of keeping **a** job, not **the** job! One strategy is to make oneself indispensable, due to a specific knowledge. Another is to be as flexible as possible and adapt to the new technologies evolving. However, more and more focus comes on content manifested as keeping the relations to the partners. These relations are described as follows (ibid):

NetWORK is our term for establishing and managing relationships with the wider world – customers, clients, colleagues, vendors, outsourced service providers, alliance partners in other companies, venture capitalists, funding agencies, the press, strategic peers, in-house experts such as legal and human relations staff, and contractors and consultants

The interesting question is now: How will all these relationships be managed? Will it be dependent on the IT-systems and their possibilities for providing adequate information? No, on the contrary:

In our study we found that netWORKers rely heavily on their own personal social networks as they seek to get work done in today's world of organizational boundary crossing. (Nardi et al 2002)

This is interesting; it means that in this technological world, personal relations are still what matters. But there are others not sharing the opinion. For instance Gurbaxani & Whang, (1991), argues:

"In particular, modern IT has facilitated the creation of value-added partnerships through which a set of independent companies work closely together along the value chain"

However, we note this was before the event of internet. It was formulated in the glorious day of technique optimism, when we thought the introduction of new technique could solve every possible problem. Salmia & Tuunainen (2000) has a more realistic argument when they say that

Modern IT can directly reduce market transaction costs by providing effective transaction processing applications and means to access market information.

The reduction of the transaction costs is in our opinion crucial. As argued in Flensburg (2002) the specific business process could be executed in a wide world network of highly specialised companies, doing an extremely small part of the process. Seen in the perspective of participative design, based upon shared authority, this is a catastrophe! The work can be divided and distributed all over the world. It is the ultimate taylorism! All trade unions, all workers should be extremely concerned about this. They do not seem to be and it can be due to at least two main factors:

**First:** They are not aware of the threat. When they become aware, they will kick up a lot of fuss. **Second:** It might be no threat, since there is no problem with the work. The employees get the needed information and can do their job without any problem! Of course, the world is not black and white, it has many colours (at least about 16 millions ;-)) and there might be many other influences on work, based upon contemporary technology. However, let us just discuss these two factors and see where we might end up.

The first scenario is based on the assumption that the network economy will lead to taylorism, in the meaning that the work is described in detail in the business process and the people doing the work must follow the instructions exactly. An obvious argument against this is that the computers could as well carry out such kind of work. Then, we can make a parallel with workers in the graphical industry during the 80s, which lost their jobs due to technological progress. This is described in the reports from the Utopia project. Today, this situation is unlikely to occur. Not because of loss of job, but because we do not have such distinct works and not so strong trade unions as in that time. Besides, the replacement of jobs is done more hidden in the name of outsourcing, subcontracting or even co-operation. We have the opinion that if this is the case, we will probably never detect it.

The second scenario, there is no threat, is based on the scale. If we consider a total supply chain, it can be divided almost infinitely into work tasks. The planning of these can for every level be separated (i.e. taylorised), but that is not necessary on the levels below. If you have for instance for 50% of the total work market for a specific work task, that work task *is* your product, and in carrying it out, you can apply holistic works models, self-regulating groups and of course also traditional taylorism. The scale of the work is simply so big, that the volume of the task motivates a traditional work set-up. It will probably be best without taylorism, as have been shown in many cases in the Scandinavian approach.

So we end up with a scenario where the same thing will happen, whether we have Taylorism or not! We have raised the problem here, but we have for the moment no idea of how to cope with it, so we leave it, with warm hands, to the scientific community. Instead, we turn our interest to another phenomenon, the possibilities for doing the work in the desired way. From our perspective, this means that the users of the information systems should have the desired information and be able to use it in a way they think is preferable. We touched upon this earlier: *It is the content of the information that matters and the context in which it is used*. We shall now briefly discuss these issues.

## **Semantics as a crucial component**

In Flensburg (2002) it is argued, based upon Habermas (1984), that language is the main vehicle for creating a society. Kelly (1998) says also in his famous book about the new economy: *“Communication is the foundation of society, of our culture, of our humanity, of our own individual identity, and of all economic systems”*. Communication generates information and as Batt (1999) says: *“There is one thing that we can all agree on about the information society – it has generated a great deal of information!”* However, we must have in mind that when a computer scientist talks about communication she often thinks either in technical terms or on a structural level. The content of the communication, what people talk about, is seldom of interest. However, for people using the systems, for people doing the business the content is the most important. Everyone who has practiced prototyping, know that it is extremely important that the test data is correct and that the system performs exactly as when it is in sharp version.

The content of the information, the semantic, has been treated within the informatics research area for many years. In database theory, huge amounts of efforts have been invested in the area (see for instance older efforts such as Griffith, 1982, Subieta 1985, Peckham & Maryansky, 1988, and newer such as Syu & Deo, 1996, Doan et al 2001, Ströbel 2001, Kim 2002.). In modern time, web-services are claimed as the solution of transferring information from one system to another (Alpher 2001, Devendorf 2001, Allen & Fjermestad, 2001, van Hooft & Stegwee, 2001). The problem of reconciliation is also recognised (Embury et al, 2001, Fan et al 2001), but still, as far as we can see, the semantic problem remains unsolved to a great extent as long as the involved partners does not use the same standard vocabulary or business process. This is the traditional approach and we can foresee much of the same problems as when traditional systems development was carried out on the 70s and 80s. People are forced to use a system that they not control and which hinders them in their work.

If the history should repeat itself, we should have the same protests from the users and the trade unions about systems not allowing them to do their job in the appropriate way. Currently we see no sign of that. We see instead many arguments from the business management area concerning the new economy based upon “value management”, “creating relations”, “establish cooperation”, “customer relations”, “and personalisation” (Williams (1999), White & Hall (2000), Keen (2001)). It might be noted that in the 60s, the argument for increased quality of working life, first raised among the employers and not within the trade unions. Can we see the same thing happen now?

Technicians, who instead shout themselves blue in the face about standardisation, ignore the arguments about value sharing, creating relations etc. Their only way to do the mapping between different systems is by standardisation. Research might however be blamed, since they have not been very interested in the issues, instead much research have been wasted upon methods and theories for systems development, a task which in our days, is almost obsolete! The researchers ought to have developed theories and useful methods about content and content management. We might, in fact face a situation where the users, according to good old Scandinavian style and with help of some researchers, can come and rescue the company. The basic problem is this time not a share of authority but of content: How shall we explain what we mean with our words?

The key issue in our perspective is related to the importance of meaning or context. We present the concepts in such a context that the users immediately understand what is meant. It can be done either by metaphors, associations or by simulation of something everyday activities. A few years ago, the most revered among cognitive artifacts were systems using artificial intelligence techniques, which many thought were even destined to supplant human decision makers in a number of complex diagnostic activities. Our attention was riveted on intelligent systems, interfaces, menus, and control

over systems by users. Now emphasis is shifting towards areas like computer-supported collaborative learning (CSCL), computer-supported cooperative work (CSCW), and virtual reality (VR) as media (Mantovani, 1996).

As we move into the network economy, new technologies provides us with both a challenge and an opportunity. The challenge is to find out how to construct and deploy highly supportive environments, which could be used to provide support for different kind of contextual settings. The opportunity is to radically change the ways in which we aid working processes in order to give people a much higher degree of individual support, and a much more flexible approach to the management of their own experiences by combining semantics and visualization techniques.

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