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Göteborg Informatics

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Looking around in Scandinavia in the Fall of 1995, it is obvious that research on information systems—informatics we say in Sweden—is beginning to settle down into a rather rich variety of distinctly identifiable different forms or approaches. Even if these forms are constantly changing, even if they are overlapping, merging and separating in a somewhat confusing manner, I still think it would be rather easy to characterize the different approaches in a way that most members of the community would accept. Furthermore, I think that such an attempt to define the different research approaches would further their development and encourage debate between them.

The best way to bring about such a debate, I think, is for the proponents of

the different approaches to describe their approach as clearly as possible, inviting the community to react. So, I have asked Pelle Ehn, responsible for the change of name of our discipline in Sweden, to describe the Lund approach to informatics. Ehn used to refer to this approach as “contextual software design” with a stress I think on “design,” but I am not sure if he does so any longer. I am still waiting for his contribution, but while I am waiting I decided to use my position as debate forum editor to anticipate him. So, the following is an example of what I am thinking of, and with this little piece I want to invite you all to contribute. I am looking forward to contributions describing the Oslo approach, the Aalborg approach, the Umeå approach, the Jyväskylä approach, the Turku approach,

the Aarhus approach, the Roskilde approach, the Linköping approach, the Copenhagen approach, the Helsinki approach, and so on.

In the first instance, I am thinking of contributions from some member(s) of, say, the Oslo community, describing their own approach to information systems (informatics) research, perhaps contrasting it to others already described. As the contributions are published in these pages, people are of course invited to comment on the different approaches, asking for clarifications and motivations, adding criticism or applause. Contributions trying to paint the whole picture and commenting on it, evaluating the different forms, are of course also encouraged. So, sharpen your word processors, please, and send in your contributions. The deadline for the Spring issue is April 1st. And, remember, this is a debate forum, your writing does not have to be polished. This is debate not science.

In Göteborg, we are busy developing and refining an approach to informatics, defining it as “a design oriented study of information technology use with the intention to contribute to the development of both the use and the technology itself.” The key words in this definition are “information technology use.” That is the core subject matter of our discipline. Let me try to quickly characterize our approach in terms of a few key points.

1. Use orientation

When our discipline was founded in the 1960s it was motivated by the use of information technology as data processing systems in administration. Such systems were developed in projects, and the discipline educated the practitioners in

those projects and did research on the nature of and methods used in such projects. Since then the use of information technology has diversified, and our discipline has (belatedly) followed suit, now encompassing a rich variety of forms of information technology use: personal computing, communication, imaging, air traffic control, road transport informatics, intelligent houses, and so on. The focus has shifted from information systems to information technology, and from systems development to technology use. Looking back now, both of these changes seem very natural. Let me use Börje Langefors, the founder of our discipline in Sweden, as an example to explain why this is so.

Langefors' interest in data processing systems was motivated by a more general interest in the use of information technology, and his notion of “information system” was meant to support such a general interest (Langefors 1965, chap. 1). Over the years, information systems were to become—in theory if not in practice—more narrowly understood as data base systems, and other uses of information technology were neglected (see Dahlbom 1992). With his notion “information system” Langefors wanted to direct our attention away from the data processing system towards the use of that system in the organization. And even if, over the years, the discipline came to be more and more focused on the systems development project, it kept spending its main energy on understanding the users and their way of using the technology. Thus, when we say in Göteborg that we are less interested in information systems and systems development, than in information technology and its use, we are really much less radi-

cal than it may first seem, expressing as we do a good old Langefors view of the discipline.

2. *Theory orientation*

With the shift from systems development projects to the use of information technology, we go from an interest in methods to an interest in theory. We are of course aware that the practitioners we educate—whatever we decide to call them—need guidelines in their work, and we teach them systems development methods. But, we don't think that they will ever have much direct practical use for those methods, nor that such methods today constitute a viable research area. We concentrate instead on developing concepts and theories making it possible to describe, analyze, and design the rapidly diversifying field of information technology use which people sometimes call information society. We are of course aware that "use" is a misnomer in want of better term, when we want to speak of the rich interplay between people and information technology (Dahlbom & Mandahl 1994).

3. *Artifact orientation*

Our discipline has always defended a people perspective. Sometimes this has been combined with a rather superficial view of the relations between people and technology, and sometimes it has even meant a negative attitude to technology. Mustering support from the social sciences and humanities in our battles with narrow minded computer engineers, some of us have acquired bedfellows who know nothing at all about technology. To the contrary, it is obvious to us at Göteborg, that technology is the most important social force in a modern soci-

ety. In our changing society, technology is the major social change agent.

Technology has become so much more than a value neutral tool; technology in the modern world has become an expression of our interests, an implementation of our values, an extension of our selves, a form for our lives. What used to be tools and machines that we could keep at arms length, has crept up on us, turning into something with which we constantly interact. People and technology have become intertwined. You cannot understand the one without understanding the other.

People and their lives are themselves artifacts, constructed, and the major material in that construction is technology. When we say we study artifacts, it is not computers or computer systems we mean, but information technology use, conceived as a complex and changing combine of people and technology. To think of this combine as an artifact means to approach it with a design attitude, asking questions like: This could be different? What is wrong it? How could it be improved?

4. *Design orientation*

When we say that we are mainly interested in information technology use, we immediately add that our interest is design oriented. We are interested in the use of technology because we are interested in changing and improving that use, and the technology. Informatics is an artificial science. Whatever we do, we should remain engineers with a design orientation, with an interest in the contingent and exceptional rather than in the general, in local design principles rather than general laws, in patents rather than publications, in heuristics and innovations rather than

methods and proofs, in the good and beautiful rather than the true (Dahlbom 1993).

5. *Future orientation*

With information technology we are rapidly transforming our society, our organizations, our work, and our lives. All these changes go together. You cannot understand one of them without having at least a notion of the big picture. When we try to see the role played by information technology in these changes, when we try to design good uses of information technology, we resemble archeologists trying to reconstruct an ancient culture in terms of a few technical artifacts left behind. Our interest, of course, is different. We are interested not in describing some definite, actual culture of the past, but in evaluating and choosing between the possible future cultures that could be built on the type of technology we are now busy developing.

We are interested in new ideas rather than in statistically secured minutiae, in intervention rather than description. Since information technology use is our business, and that use is rapidly developing and diversifying, we have to develop and diversify too. We want to contribute to that process rather than just observe and describe it. There is a need for careful, pedestrian collection of facts in our field, certainly, but too often such research turns into an "anthropology of the past" rather than an experimental "archeology of the future" which is our interest.

6. *Customer orientation*

Whatever you do in life, you do it with someone in mind (this is Max Weber's definition of social action). Using the current jargon, you can always ask: Who

is the customer? This is a good way to approach moral problems. At Göteborg we try to be very much aware of who our customer is. One thing we know, we are not doing science for science's sake. We view the research community as someone to check our results with rather than someone to whom we direct our research. So far, we have made it easy for us by saying that our customer is whoever pays. And since our research has been mainly funded by a governmental agency who expects us to direct our research to industrial development, our immediate customer has been Swedish enterprise.

We are doing business oriented research. This is beginning to change, as university funding is increasing, and we have begun to receive funding from a governmental agency who seems equally interested in society at large and its citizens, as in Swedish industry. So, we are broadening our customer base. In our business oriented research we are working closely with a few business partners. We want our research to be effective, to be influential, so we have to work closely with our customers, rather than just talk. With a broadening customer base, we have to find new partners. Who should we work with when we want to contribute to a better society? Maybe we will be working with schools or hospitals trying to do something concrete and immediately useful. With this new customer orientation, we will come rather close to the approach described by Erik Stolterman in the last issue (April 1995), except that he had nothing to say about customers.

To summarize, Göteborg informatics is a theory, design and future oriented study of the use of information technolo-

gy with a clearly defined customer. Describing our approach in this way, using a few key words is one possibility. Another possibility could be to think of an approach like this as a “paradigm” (Thomas Kuhn) or a “research programme” (Imre Lakatos), and use the concepts involved. Paradigms, according to Kuhn, are defined by exemplary research questions. Our Göteborg paradigm could then perhaps be characterized by a question like “We have just bought Lotus Notes, could you please tell us what to do with it?” put to us over the phone by an IT manager in a major business company.

In the title I refer to this approach as “Göteborg Informatics.” And that is how I think of it. Should I use a less pretentious name? The details of this approach has grown out of discussions with colleagues, not the least with my students at Göteborg. But my graduate students and collaborators go their own ways. How hard should we try to work out and stick to a common approach? What is the role of such common approaches in informatics at this time in our history? Those are questions that I would like to have discussed. But above all I would like to hear what people think of the Göteborg approach, and how they differ in their own approach to informatics research.

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