Summary of session 1 for INF9200 course
Petter Øgland, 11/4/2005

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INF9200 requirements:
The literature is composed on the assumptions that we shall primarily make contributions within the IS field, and that our uniqueness as a group is characterized by our

- Focus on complexity (large scale information systems and infrastructures), and in particular
- The role of technology (theorizing technology)

The students are supposed to read the literature individually. But it is strongly recommended that the students discuss extensively, but the organization of this is left to the students. For each theme the students have to write an individual essay summarizing the literature and discuss briefly its relevance their own research (2.500-3.000 words). There will be one session of about 5 hours for each theme. First there will be an app. 2 hour lecture on the theme by an invited speaker. Then there will be a discussion (app. 3 hours) based on the lecture and the students’ individual essays. The essays must be circulated before the session. All group members should participate in these sessions. When all sessions are completed, the students must write an individual essay discussion how the research in the group could make further progress.

My research:
The preliminary title of my research is “Making scientific management more scientific”. The idea informing the research conducted by the GI groups and other IS communities interested in the question on “how to build sustainable information systems”.

Although quality management systems (QMS) may vary in size, and thus not be comparable to the internet or large health care management systems, building quality management systems has a history of being notoriously difficult to design and implement, the reasons perhaps similar to Orlikowski’s Lotus Notes study and studies like those documented in “Control to Drift” (Ciborra et al, 2000).

By the title “making scientific management more scientific”, I want to emphasise that:

- Scientific management (as defined by Taylor in his 1911 book) is, in fact, a science, or should be interpreted as a science; meaning that it describes management as a process for producing valid and generalized new knowledge. Whether this process produces knowledge about the work processes (Drucker, 1969) or whether it produces knowledge on how to manage an alienated work force (Braverman, 1974), is less important than the fact that scientific management is a type of Action Research (Lewin, 1946).
- The life of F.W Taylor as a management consultant is a life of conflict, and beyond his apparent good intentions in building management systems, he became a problematic figure both for managers and work force. The problems Taylor experienced are still relevant problems for management consultants working with TQM, ISO 9000, Six Sigma, Lean Production etc., and thus the most important way of making Scientific Management more “scientific” is to acknowledge socio-technical problems and seek
ways to improve the ways quality management systems are being designed and implemented.

I believe there is much to learn by comparing the development of QMS with studies on how the Internet has evolved and how large management information systems are being developed in hospitals.

This type of knowledge is currently being encoded as “complexity theory” by the GI group and other IS researchers. Much research on how to build QMS has also been informed by complexity theory, such as Complex Adaptive Systems (CAS), e.g. Dooley (1992) and Beckford (2002). The action research carried out by the HIISP team is particularly interesting in my research, as I would very much like to use the insights produced from this effort. If it is possible to build management information systems in the challenging domain of developing countries, then similar type of development in the industrialised world should prove an easy task.

However, in order to make the insights from complexity theory and HIISP of practical use, they need to add insights to some kind of information infrastructure design theory. Knowledge that does not inform design is of little use when we are discussing the highly practical problem of building quality management systems.

Insights from Checkland (on systems thinking and action research) and others (such as “Networks of Action”), has lead me to the conclusion that the only valid knowledge to be produced by action research is knowledge that can be described as some kind of “algorithm” (Simon: “sciences of the artificial”, 1996). The Bootstrap Algorithm, developed by the GI community, is a perfect example of how to represent to insights discovered by II research. However, the algorithm strikes me as too abstract to be of practical use for quality management practitioners. The challenge consists of how to refine and improve this algorithm for practical use in various settings. Most likely, one will end up with a family of bootstrap algorithms, i.e. having various types of algorithms designed to fit with special categories of organisations and parts of organisations.

Orlikowski: Desperately seeking the IT in IT research
I found it difficult to understand what that paper was all about. It consisted of a classification of different perspectives when researching IS, search as a tool perspective, an algorithmic perspective, an economic perspective etc., all seeming highly relevant and useful for IS designers interested in special issues related to IS design. The only perspective that didn’t seem to have any use, was the perspective given by Orlikowski, the “ensemble view”. The insights produced by studying technology from this perspective do not seem to be of use for economists, managers, engineers, sociologists or anybody. It seems to be a perspective that is only of interest of people concerned with the “philosophy of science and technology”.

Hanseth and Monteiro: The social shaping of technology
This paper continues along the philosophical path, saying that structuration theory is not the best way of understanding technology, and suggests ANT as an alternative. I find this difficult to read, as I don’t understand the motivation for the research. In the world of management science (including quality management systems), the usual way of understanding the world is to use systems thinking. I would have expected this view also to be the dominant in IS research, as IS research concerns systems per se. Herbert Simon has a very good chapter on the development of complexity theory in chapter 7 of “sciences of the artificial”,

explaining how the current CAS represents a third wave of systems/complexity thinking, general systems thinking (GST) and cybernetics representing two previous waves.

**Orlikowski: Using technology and constituting structures: A practice lens for studying technology in organizations**

Orlikowski goes into more detail about structuration theory and explains her Lotus Notes case study. When we discussed this paper among the PhD students, I was more concerned with how to place Giddens on the Burrell-Morgan matrix. Should both he and Latour be seen as “radical humanism”, along with Gramsci, Lukacs, the Frankfurt School, French existentialism etc., or is it more natural to see them as “interpretivism” along with Gadamer and people who are more concerned with understanding without having assumptions about people being alienated or need to be emancipated? For the moment, I assume that all or most of the philosophers used by the GI group can be pin-pointed in the “radical humanism” of the matrix.

This, however, I see as a challenge in trying to build sustainable information systems in general and building sustainable quality management systems in particular. As far as I can see, most of the traditional management consultancy (Scientific management, TQM, BPR, ISO 9000, Six Sigma, Lean Production etc) fits with some kind of social systems theory (e.g. Talcott Parsons), and thus represents a view of the world (“functionalist” paradigm) that is more or less the reverse of the “radical humanism” approach.

While the functionalist approach (and perhaps also the “radical structuralist” approach typified by Marxism [not only think about the world, but also change it; Feuerbach]) seem to be good paradigms for doing action research, as valid knowledge consists of facts and changes, “interpretative” and “radical humanism” seem to me to be difficult ways of thinking when doing action research, as we basically interested in values and interpretation. My impression is that one could produce lots of “knowledge” given these paradigms without causing any action or change at all.

**Lyytinen & Rose: The disruptive nature of information technology innovations: The case of intern computing in systems development organizations**

By introducing the concept of “disruptive nature”, does Lyytinen say anything that has not yet been said by the BPR people? Is he perhaps trying to describe in words what the BPR people have described in routines and measurements? We discussed the paper during one of the Wednesday seminars, but I did not really understand what the contribution was. There are some statements in the conclusion containing advise to managers about thinking about possible future technology changes, but do we really need to inform management about this? How unconscious does Lyytinen expect technology managers to be?

**Ciborra: The mind or the heart? It depends on the (definition of) situation**

I like Ciborra’s focus on care, hospitality and cultivation, but when he is discussing the issue of taking Heidegger seriously, isn’t he making the mistake of using Orlikowski and Suchman as strawmen in his argument? Is he seriously saying that Orlikowski and Suchman are thinking and behaving like cognitive robots? It would have been interesting to hear Orlikowski and Suchman’s comments on this paper. To me it seems like Ciborra is not taking them seriously, and thus making the same mistake that he is accusing them of making.

With respect to my own research, I believe it is good to show care, hospitality and cultivation, but I don’t understand what this has to do with scientific research. My experience with the IS
people in Oslo and elsewhere, however, is that they are all very kind. Compared to other places I know, being a part of UiO is like being in heaven.