

Introduction to a Case-Study at the Administration of Stanford University

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The Case-Study

I have recently conducted a larger action-oriented study in The Film Board in Denmark, with Finn Kensing, as part of our MUST-project, in which the overall effort is to develop theories and methods for designers doing (early) design studies in an organizational context. Action-oriented research has unique benefits. The researchers have their own experiences to draw on; one has the possibility to test different conceptual frameworks and methods, etc. However there may be complications if this is the only research approach used. Even though the study in The Film Board takes place in an industrial setting, our contract on the site allowed research to be a main part of the activities. As a result the situation on which the study was based is somewhat "ideal" and "laboratory-like," excluding certain kinds of constraints. To address this problem I have undertaken a complementary case-study in which I observe a large-scale early design study within the administration of Stanford University. So, my primarily interest in this case is the "real-life" and "environmental" constraints out of the power and control of the designers in the team that I have observed, which my action-oriented study in The Film Board tend to ignore, due to the fact that we in this study could do pretty much what we wanted to.

I have tried to observe the case participating in all their weekly meetings and in some of the activities they have carried out. I have so far done a few interviews and tape recorded and transcribed 2 critical and important meetings. I must admit that my observations tend to be participatory observations, because I just can't keep my mouth shut, but I don't consider this a problem.

There is one particular issue in the case that I would like to focus: During the project the goal has changed from "documenting the features of a truly excellent future expenditure system through a participatory design approach" to "cost reduction (including staff reduction) as a prime consideration".

The following will provide you with some background context concerning the case.

Traditionally the development of information systems within Stanford's administration is managed and carried out by their own staff of programmers with a mainly technical background. They have experienced that this approach often results in information systems supporting existing administrative processes without taking into account that these processes may not be relevant anymore, needed to be reorganized, etc. In 1992 it was decided to initiate a project¹ changing this approach to use a "business process approach" (which I consider as design) where business people are trained in analytical methods²

¹ The initiative to use process engineering for looking at the business processing at Stanford started a year or so ago with the group of 5 very senior administrators who wanted to sponsor the activities. These 5 people proposed that Stanford should try to use process engineering approaches and they sponsored - money from the University overall budget - to start the program. They are referred to as "the sponsors".

² The team-leaders have had some training from HP on "process reengineering" and "gradually improvement strategy", I think partly based on the book *Information Strategy*

with the purpose of bridging the gap between analysing their problems and needs and development of the information systems by the programmers.

"Some problems that lead to this decision [new approach] was that instead of figuring out whether or not something was worth doing or if it could be done in a major different way programmers would tend to take whatever process was there and automate it - and it may not be a very good process from a business point of view: you might not do it, you might not do it that way, you might not have real measures of quality. So essentially what happened was to use the computer to make a possibly inefficient or ineffective process go faster. And if faster was enough that was great but if the problem was you were not doing the right things or you were not doing them the right way, making them go faster did not help - some times it even cost problems. Usually computerisation helps a lot - in terms of productivity - when you are going from a manual process to a computerised. Once you have computerised an office - even with batch end relatively old techniques - to make a breakthrough in terms of productivity, it takes much more sophisticated analytical techniques. Otherwise you are just going from batch to on-line, and you don't change the process to take advantage of the possibilities the on-line facility provides you, and you don't necessarily challenge whether you need to do this or not. You sort of assume that what you are doing is the right thing and we are doing it the right way and the problem is to make it easier - faster.

The initiative today is to determine [if] we need to do it at all, is it still relevant or just as relevant as in the past compared to other competing priorities, or if the way to do it is based on older assumptions or older priorities and needs to be questioned and revised." (From interview with team leader).

The project is organized with a steering committee and 5 so-called Business Practice Initiative Teams each studying different areas³ within the central administration. The team that I observe has 8 members⁴ (and in addition some associated consultants⁵) and concerns the chart of accounts and general ledger, often abbreviated to COA/GL. This team was initiated in February 1993 and plans to work until the end of November 1993.

The charter and commission is vague, extensive, and very generally stated in a short paper and parts of their mission have only been orally discussed (they could definitely learn a lot from doing systematic project establishment). The lack of clarification of what the team is supposed to do have been a constant frustration throughout the project and often members of the team claims, that

and Economics by Parker, Trainer and Benson (Prentice Hall, 1989). This book should be very "hot" have I been told. The team members of the team that I have observed have had some training in a specific technique called "Affinity Diagramming and Prioritization Matrices" (Brassard, Michael: *The Memory Jogger Plus+™. Featuring the Seven Management and Planning Tools*, GOAL/QPC, Methuen, MA, USA, 1989.)

- 3 The 5 areas are: Compensated Absences, Research Administration, Policies, Buying and Paying, and Chart of Accounts/General Ledger.
- 4 The team leader, Judith is a senior information systems project manager. The 7 members of the team are (senior) administrative officers, all doing work directly related to the Chart of Accounts/General Ledger (have their hands on the keyboard). Their work titles are administrator, audit manager, assistant director, director finance, administrative service manager, senior technical advisor, and budget officer.
- 5 I'm a bit confused about all their different consultants. There are at least 4 consultant companies involved in the project: Nolan, Norton & CO; Carey Project Organization; Qualtec Quality Services Inc.; and KPMG (Pete Mollic and Michel).

they never really understand exactly what they are supposed to do and what their goals are. The written text on their commission states:

- What general functions a COA/GL-system is supposed to comprise.
- Some general problems and needs concerning the current system⁶ (and the list provided are stated not to be exhaustive).
- A list of "system customers" (interest groups), which as I see it includes all administrative staff on campus and a very long list of external interest groups.

Finally the commission states the team mission as:

"The team will review the current functionality of the chart of accounts schema and supporting software. The team will determine the requirements (both current and future) that must be met by a new general ledger system. The team will identify the kinds of financially oriented reports and financial analyses that are required by management throughout the University and will determine whether these requirements will be met through the chart of accounts, through other transaction coding schemes or by other means. Specifically the team will determine:

- How well financial analysis is supported by the existing chart of accounts.
- What characteristics need to be build into chart of accounts.
- Whether the University can make more use of subledgers to handle detail.
- What attributes should be supported by the chart of accounts.
- What control functions are provided by the general ledger.
- What cost allocation functions are supported by the general ledger.
- What management information needs should be supported by the general ledger."

In the team the goal of their work is referred to as *documenting the features of a "truly excellent expenditure system"*. Judith, the team leader, emphasises, that the only purpose is to make a prioritized list of where to make further analysis.

Great emphasis (from the new Provost I think) has been stated on that the requirements of the new system not only should satisfy external demands (Government, State of CA, auditors) but should meet internal needs as well. Internal needs means in this context the (senior) management's needs for information in order to direct the University at a very high level.

Judith has explained the overall design approach by referring to a model on the front page of the book "Information Strategy and Economics" as a mixture of a "top down" and a "bottom up" approach.

⁶ Needs for accounting control and cost allocation, no current budget control functionality, too complex, need for more simple and intuitive structure, insufficient for tracking income actuals vs. forecast, need for eliminating redundant bookkeeping, should easily reflect changes in organizational structure, etc.

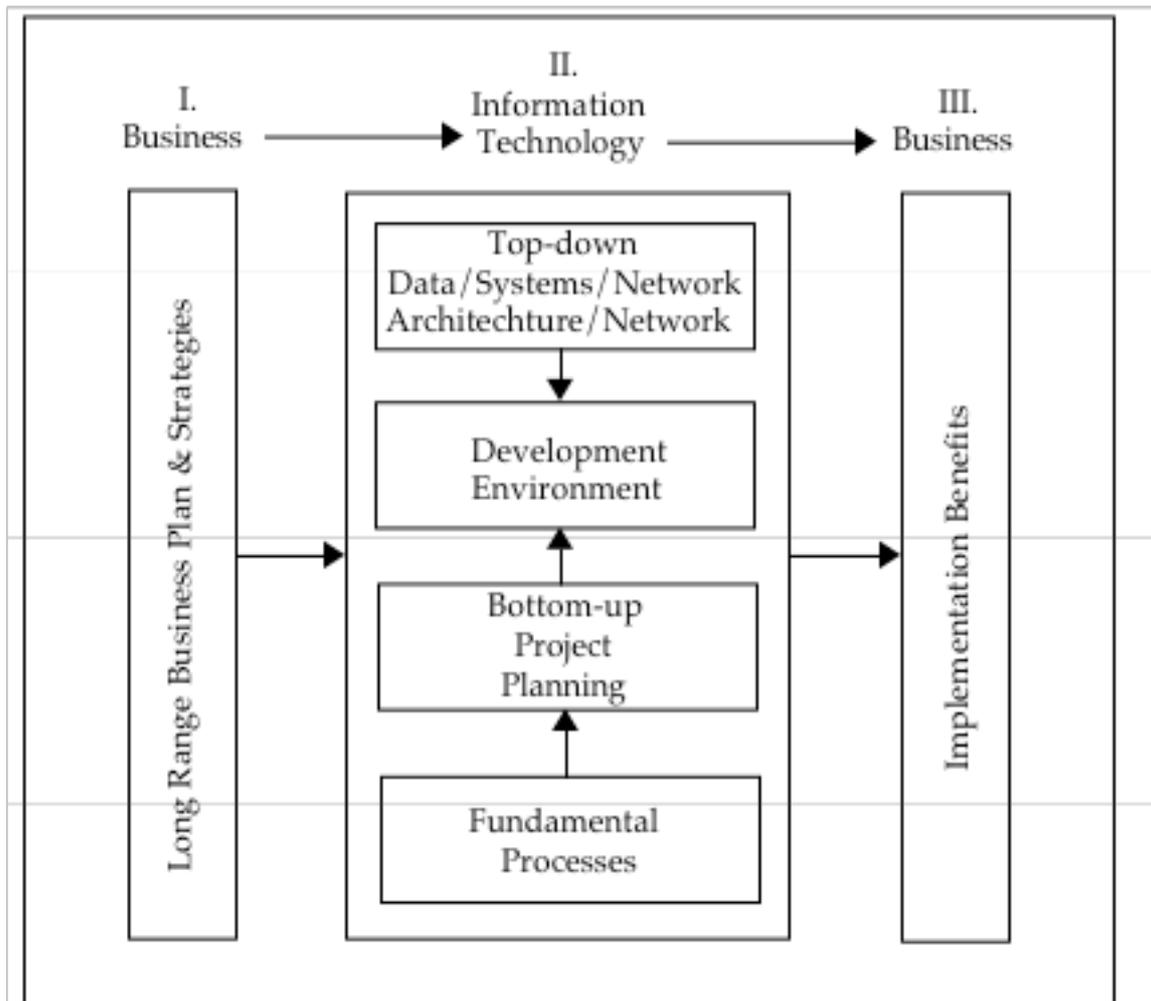


Figure 1: Business and Technology Relationships. (From the front cover of Parker, Trainor, and Benson: *Information Strategy and Economics*, Prentice Hall, 1989).

[referring to Figure 1] "Here (left part) is your long range business plan and strategies, this is done by your president and your vice presidents and then you have this activity here (middle part) around the information technology, where senior people, maybe not quite as senior as these people (left part), but very senior people, do a sort of a top down view of how do we get this to happen (upper middle part), and people [involved in] how do we do the day to day work (lower middle part) - the fundamental processes of the University, how should it feel, how should it look, what should we be able to do with an information technology support system. And you [have to] kind of bring this together to determine how you are going to replace your systems. I see the retreat⁷ [as] to bring together here and here (left + upper middle part) and the VOC-sessions⁸ as bringing the bottom up if you will. The people in the VOC-sessions are them who are actually having the hands on the keyboard generating the information. The people here (left part) are using the information to project and manage the universities business activities over a long period of time.

⁷ An activity she did with a range of senior people. (described below).

⁸ Voice Of the Customer sessions, an activity described below.

It takes 3 years to bring up a system of this kind. If we only ask the people in the lower part they will have a system that does what they are doing now better and faster. But that may not be the right thing - what they need in 3 years. Its the left part that have the view of the future." (from interview with team leader).

The current COA/GL-system was initially made on the basis on a library system about 20 years ago. Since then it has gradually been extended through the years in 6(!) different languages⁹.

Since the replacement of the system will affect hundreds of users, the approach pay high attention to be representative (a quantitative approach, avoiding detailed studies of current work practice and problems, rather than a qualitative approach).

The 4 major activities, that the team has carried out are the following:

Voice Of the Customer (VOC) sessions.

VOC-sessions is a kind of brainstorming technique¹⁰. The "customers" are the staff from Stanford's administration, (senior) administrative officers, all doing work directly related to the Chart of Accounts/General Ledger, and thus colleagues to the team members. The VOC-sessions lasted about 4 hours, and each had about 8-12 participants. The topic for the VOC-sessions was "What are the characteristics of an excellent expenditure report system?"

First all participants are asked to state ideas for themselves on yellow stickers. All yellow stickers are then gathered on a whiteboard and the participants are asked to group them and state a headline for each group. A multivoting makes a prioritization of the groups. These groups represent the *what's*, i.e. qualities and requirements wanted in a new system. Now the participants are asked to discuss and state design solutions to ensure each of the ideas represented in the groups. These are stated on flip-overs and represent the *how's*, i.e. ways to ensure the *what's*. Finally the *what's* and the *how's* are presented in a matrix, and the participants are asked to judge how well each *how* will accomplish each *what* and give a high/medium/low/(N/A)-rating. The rating and the multivoting are represented as numeric factors in a spreadsheet-matrix, and a simple algorithm calculates a "total" score for each of the *how's*. The result is thus a prioritized and rated list of both *what's* and *how's* from the customers.

In some ways VOC-sessions reminds me of the Future Workshop-technique, with a participatory and "democratic" approach. Major differences are, though, that VOC-sessions does not focus on current problems¹¹, and the timeframe for

⁹ COBOL, SPIRES, MARKIV, RPG, NOMAD, BASIC, and HP9000.

¹⁰ The technique used is named "Affinity Diagramming and Prioritization Matrices" (Brassard, Michael: *The Memory Jogger Plus+TM. Featuring the Seven Management and Planning Tools*, GOAL/QPC, Methuen, MA, USA, 1989.

¹¹ Sometimes I have the feeling, that the words like *problems* or *critique* are taboo in a way. Even the evaluation of e.g. the VOC-sessions does not state pro's and con's but pro's and *delta's*, where delta's are *things to change*. You don't ask a question like "what didn't you like" but rather "what should be changed".

the session does not give room for the participants to explain *why* they propose a certain idea/ requirement or way to ensure this idea. The results of the VOC-sessions are thus limited to a list of short statements, mutual prioritized and rated.

Initially the team planned to make 20-25 VOC-sessions but stopped after having conducted 5, as the resulting statements from the sessions turned out to be rather alike¹². One team-member interpreted this in the following way: "We found that all are ready for these changes in the system - it only shows that we all have wanted these changes since 10 years ago."

The results of the VOC-sessions may be seen as the information gathered from the bottom middle part of the figure 1.

Structured faculty interviews.

Eleven faculty members have been interviewed after a structured set of questions. The structured form of the interviews should provide some representative and comparable information from the different schools. This form also implied a resistance to follow up on encountered interesting findings through the different interviews - the results of the interviews are considered as jumping-off points for further thoughts and studies.

The persons interviewed were senior faculty members (professors) with major research responsibilities. Often their secretaries attended the interview, as only she could answer some of the questions. The purpose of the interviews were to get information of the needs from the professors responsible for managing the various schools at Stanford.

The results from the interviews were very consistent¹³. Most schools have difficulties in keeping track of their economic latitude: they simply do not know exactly how much money they have left at a certain time. All schools uses local "shadow-systems", that tries to rectify shortcomings with the central systems.

An attempt to organize the results from the interviews into one tally sheet was given up, as the sum up of the simple yes/no-answers did not seem to provide much relevant information. In stead all team members read through the interview summaries and pointed out what they found interesting.

Analysis of "Shadow systems".

The team soon became aware that a number of "shadow" accounting and management systems were developed by various University departments to

¹² A common result is that all want the new system to be accurate, flexible, simple, timely, and including commitments.

¹³ They all expressed needs for timely/ accurate commitment information, better financial projections, familiar tools (like Excel and Lotus), and support and help in tackling difficult requests.

satisfy their needs which are not currently provided by the central systems. Primarily in order to get ideas for requirements for a future COA/GL-system, a number of these shadow systems were analysed. This was mainly done by the team leader, since she has a technical background. The analysis was performed by email-surveys, visits to some departments, and a demo of one major shadow system developed by the Medical School. Since shadow systems have been developed for a considerable time, this highlights the issue of two different visions that are possible responses to the need for new administrative systems: the central model in which all the departments get information from the same source and input information the same way; the decentral (or departmental) model in which the departments have their own systems and send the information to central.

Trying to make the senior high level management state their information needs.

This may be seen as the effort to get information from the left part of figure 1. This activity has been carried out solely by the team leader and one of the consultants. The team has been informed about it but has not participated in it.

A retreat has been conducted with the very top management from the University (Provost, vice provost's, chief financial officer, etc.). The purpose of the retreat was to agree on a common model shared by all institutions on the "whole" administrative process on a general level. The purpose of this is to get the senior management to say "OK, we agree that this is the way it works". Then you can ask them questions to the elements in the model(s): What kind of information do you need in order to do this and this. The outcome of the retreat was vague and general statements and no common model was developed. Since then the team leader and the consultant have proposed 10-15 different models, but still no single model have been agreed on.

The difficulties for the team leader to get the top management to state their information needs, causes great frustration, but she keeps pushing on with much stubbornness. One reason for this is based in her former experiences, as explained by this story:

"I had a bad experience a couple a years ago that taught me a lot about why you want to keep pushing on this [trying to make the senior high level management state their information needs]. We had a payroll system and it was not correctly calculating the taxes. They wanted a new system where they were absolutely certain that the taxes was calculated correctly. I designed a project to go and get a payroll package and replace the package they had. We started to do the project. There started to be a lot of budget problems which they had not foreseen. Now they said to me, we want this new system and we don't want you to change any of the code that comes from the vendor because it will be more expensive to maintain if you do that. I said OK. When the system was installed everyone hated it and they said why doesn't it do on-line input, why doesn't it make it easier for us to calculate pay amounts, why doesn't it gives us better information about what we paid people? Because when I started the project no one told me that's what they needed and wanted. When I asked they said the problem is that is doesn't calculate taxes correctly, and then a little later they added on - don't make it too expensive. The real problem - the bigger problem - was that we were heading a budget problem, so we needed ways to save money in the process of paying people, we needed to make it easier and cheaper to do and we needed to make it easier for people to put their data in about how to pay people. That would deliver more benefit for the University than fixing the tax-problem. If I had known that from the start I would have said we need

a system that correctly calculate the taxes and is cheaper to run and is easier for people to put data into it. Those would have been my goals and I would have done my project differently.

Now I don't only want to listen only to this idea that you need to calculate taxes correctly - because that's what you get from this level (lower middle part figure 1). I want to hear from this level (left part of figure 1) we need to save money, we need to make it easier for people to put their data in, etc.

That's why I'm such a bug about this time - I got burned the hard way. We call it heuristics when we are being fancy." (from interview with team leader).

In the beginning of august the rumours begins that a major change in the goals and organization of the business practice initiative teams (and other administrative teams as well) are considered due to the financial situation and the the university having a new Provost. The rumours says that cost reductions should play a major part of the whole initiative. All 5 team leaders are very concerned about this and expresses this concern to the steering committee. On August, 11th, at the team meeting, Judith announce that the sponsors have decided not to include cost-cutting as a goal for the business practices teams. Nevertheless this is changed on August 16th, where the sponsors emails all business practices teams the letter "Business practices direction" formally stating a change in direction and goals. Cost cuttings and staff reduction is from now on a prime consideration. Also, the strategy is changed from "incremental improvement" to "radical changes to get drastic and fast improvements": this strategy I see as the so-called Business Process Reengineering-approach (described by Hammer and others). Furthermore the organization of the project is changed and a new core team¹⁴ is put in between the business practice initiative and the Provost and the President of Stanford. This changes the role of the business practices initiative from making their own final report directly to the Provost and President to making material to (feed) Glens team to influence his report to the Provost and President. The Business Practice Initiative is now supposed to end within a few months (all 5 teams must make their final reports latest at November 1993). Also the Business Practice Initiative then ends. New teams are now formed to continue the project. Those teams are formed as small "closed" teams, where the participants only do the work in the team (they do not at the same time work in their "home"-department). They are physically placed in a separate building in new offices. They are supposed to work very concentrated on specific tasks and fast (within April 1994) produce recommendations for dramatic changes. The goal is to reduce the overall central administration with 30% within 3 years (10% every year).

This to me very dramatic change in the overall conditions for the whole project (and peoples assignment to participate in it) courses confusion, but is not treated as a major crisis. An article in the University newspaper describes it in the headline as "No Crisis, just the Realities of the Nineties." After a meeting with Joanne Coville¹⁵ (explaining the change in the project) and Glen (where he

¹⁴ Administrative Information Systems Plan Core Team, referred to as Glens team - Glen is the team leader of this team and thus the new boss of all the business practices teams.

¹⁵ Lucy Suchmans comment to this meeting was that Joanne Coville act as the "reassuring mother" with reference to the new provost, stating that "kids, we really don't have any choice here, this is the way it is so, what are we going to do about it." So it's all just framed in terms of there is a situation here, there is no possibility of questioning it, we have to face up to it: if we are morally responsible and mature and we will face up to it.

explains the charge of his team), the COA/GL-team continues to end their task (nearly as if nothing has happened).

The change is treated as some kind of "add on" to the initial initiative ("we are doing the same thing but now with the purpose of..."). That the change in goals could in some way contradict with the participative approach the team were doing in their current VOC-sessions (they ask their colleagues to participate in a work session with the purpose of reducing them!) was an issue that I brought into the team, and it was not treated as any major problem. To me this a bit hard to understand and I think I face some kind of cultural difference. I can hardly think a similar situation could occur at my own university, but if it did, the response would be very different: Probably the team members would refuse to cooperate and immediately leave the project. And the situation would be a major hot political issue.

Currently the team is writing its final report and hereby some of the team members ask themselves "what have we really encountered which we could not say from the very beginning - have we anything really interesting to say?" Much of the outcome and results in the drafts on the report seems pretty obvious to the team members.

The future of the tea-members to a succeeding phase after delivering their report is blurred, but I think the message to the team members (the team leader will continue to participate in the project) will be "Thank you very much, you have done wonderful work."

There's a whole bunch of underlying assumptions that aren't being stated and aren't being questioned.