HOW KNOWLEDGE MANAGEMENT FAILS: THE CASE OF THE BEST PRACTICE TOOL

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Abstract

Why do Knowledge Management projects fail? The managerial literature generally attempts to answer this question rather one-dimensionally and, using functional or technical criteria, assumes that the introduction of Knowledge Management is the result of a rational decision-making process and a strategy successfully implemented in the organization. But, constructivist studies of innovation have shown that it is often impossible to pinpoint why an innovation project fails and have criticised the rational literature for failing to problematise and specify for whom the outcomes of the project are considered as either a failure or a success. These researchers have over the past decade shown that innovation projects originate in ideas that circulate in and between organizations. Locally translated, such ideas contribute to the construction of many other things such as new technologies or practices. Accordingly, in this paper, I account for the (failed) attempts by a group of innovators at Engico, a large Scandinavian engineering company to translate the idea of Knowledge Management into the Best Practice Tool, aimed at sharing knowledge throughout the organization. The project continued for almost four years, without delivering the intended results, until it was finally "put on ice" in September 2003. The question is: how *did it fail?*

Keywords: knowledge management, best practice, innovation, failure.

1 INTRODUCTION

The mainstream management and organization studies tend to treat knowledge as *the* factor of production that can and should be placed at the service of the company's profits (a "business case for knowledge"). Knowledge is described as a resource that can be stored, transferred, owned and traded often with the help of information technology tools such as the Intranet (Davenport & Prusak 1998, O'Dell & Grayson 1998, Kreiner & Mouritsen 2003). Within this framework Knowledge Management (KM) is seen as a type of *panaceum* that can solve the problems the company faces and deliver the competitive advantage it seeks in order to survive. The ideas behind Knowledge Management are driven by the assumptions of an ever more rapidly changing environment, and usually focus on the need to control and manage people and organizations in a more efficient and productive way, based on their knowledge resources (see Teece 2000). In order to help companies to do so, the literature in the field is dominated by descriptions of what *should* be done in order to succeed with the goal of managing knowledge (see Davenport et al. 1998).

In true modern spirit Knowledge Management loves its winners. The KM projects of companies such as BP Amoco, Hewlett Packard, IBM, Ford, Buckman Laboratories and Siemens are presented as "best practices", as models against which other organizations should benchmark themselves (see e.g. Wolford 1999, Dixon 2000, Ahmed, Lim & Loh 2002, Davenport & Probst 2002, Mertins, Heisig & Vorbeck 2003). Well known business leaders, the likes of Lew Platt of Hewlett Packard ("I wish we knew what we know at HP".), or Jerry Junkins from Texas Instruments ("If TI only knew what TI knows.") epitomise the promise of Knowledge Management for organizations to *know what they know*. Their quotes appear frequently in the mainstream literature on Knowledge Management (see e.g. Ahmed, Lim & Loh 2002) and underline the ambition to share knowledge in order to create some sort of "distributed cognition" (a term coined by Knorr-Cetina and Bruegger, (2001, p. 181), but not to this purpose) in which everybody knows what everybody else in the organization knows. It is hoped that in this way the organization will be able to counteract the "reinvention of the wheel," that people will be able to solve problems more efficiently by gaining access to the knowledge of others who have solved similar problems.

Still, despite the fact that Knowledge Management is seen as a cure-all remedy, few managers actually believe that they are succeeding with the endeavours aimed at managing knowledge in their companies (Earl & Scott 1999, Earl 2001), and many consulting reports claim that the vast majority of KM projects have no significant impact on the organization (e.g. Lucier & Torsiliera 1997, quoted in Chua & Lam 2005). Although it seems as if "nothing succeeds like failure", as the French sociologist Bruno Latour (2000) wrote, there is a rather limited amount of research into KM project failure (see e.g. Storey & Barnett 2000, Chua & Lam 2005). Moreover, in the KM literature and the management literature in general, project success and failure is treated in a rather one-dimensional fashion. The basic tenet is, following economic reasoning, that establishing and running projects requires investments that can be measured in terms of resources, time and money. Project members expect their investments to give returns at a number of future events. If the investment does not look as if it will produce the expected returns, if costs skyrocket, deadlines are never met or other problems appear and reappear, the decision of what to do ought be straightforward: the investment should be terminated. After all, newly-developed products that do not sell are also taken off the market and unprofitable business units are sold.

Viewing a KM database system as the product to be developed in a project and the intended users in an organization as the actors comprising the market, the project can then be said to have failed, when the actors do not begin to work with the system as part of their daily activities. In contrast to this picture Bo Persson (1979) discussed "surviving failures" – projects that continuously consume more value than they give rise to – as a common feature of society. He suggested a number of reasons for why such projects are allowed to survive: First, the project might be so complex that no one involved can or will judge it as a failure. Secondly, it might not be enough for a single person to take an active

decision to abort the project, because there are so many other actors with other interests involved. And thirdly, he mentioned ideological reasons such as the belief in the power of technology. Apart from Persson's examination of permanently failing projects, the one-dimensional treatment of project work with its focus on market, efficiency or technical criteria alone, has met with a variety of related criticism. It has been described as a simplifying approach in two ways: First, in that it fails (excuse the pun) to problematise and specify for whom – people, organisations, social groups, etc. – the products or outcomes of the project are considered as a success or failure (Braun, 1992, p. 216). And, secondly, because it adheres to what Latour has referred to as the "diffusion model" (1986; 1987) according to which innovation projects proceed in a linear fashion, deviations from the path initially plotted need to be met by corrective action and those projects that are heading towards failure should be avoided to begin with, if possible.

In contrast to the assumption that the introduction of Knowledge Management is the result of a rational decision-making process and a strategy, successfully implemented in the organization, many researchers have over the past decade shown that innovative projects, change processes and reforms originate in ideas that circulate in and between organizations, travelling from one time/space to another (see Latour, 1986; Star, 1995; Czarniawska & Sevón, 1996; Latour, 1996; Sahlin-Andersson & Engwall, 2002). Locally translated, such ideas contribute to the construction of many other things: new identities, new institutions, new products, new practices, new technologies or new structures. The intentionality of the consequences (i.e. what did the participating actors plan to achieve from the beginning) of the circulating ideas is only one aspect that can be captured; the unintended consequences, however, are as important as the intended ones (Czarniawska, forthcoming). Thus, it can be said that judging a technology or an innovation project to be a success or a failure has many dimensions that can only be addressed by considering the context within which they are embedded.

Success and failure can be understood as labels (Strannegård 2003) which are translated – created and maintained – in social interaction between people. Individuals can of course view their own actions as successes or failures, but it is only once these actions are viewed in relationship to others that the labels, feelings and experiences of success or failure are created. Accordingly, in the limited space of this paper, I attempt to show *how* the idea of knowledge management in the form of the Best Practice Tool (BPT) was translated into an organizational setting by a group of engineers, managers and IT consultants (henceforth referred to as the innovators) at Engico, a large Scandinavian engineering company (*I have changed the original names of the project, company and people involved).* It is only when the innovators themselves interpreted the project as a failure that I joined them in trying to explain it, with explanations that often went beyond theirs or even sometimes contradicted them. It does not mean that my interpretations are "correct"; hopefully, their value lies in that they are different, and therefore add to the possible repertoire of interpretations.

The paper is structured in the following way. First, I present the setting, the company that opened its doors to me and the KM project that is the focus of this paper. I also discuss the methods used in the field study. Second, I present my empirical findings, before discussing them and presenting some concluding remarks.

2 THE SETTING AND FIELDWORK

Engico is one of the leading global manufacturers of products and components for, among others, the electrical and heavy machinery industries. The company employs over 30 000 people in 50 countries, and is the world leader in a number of product segments. The company is organised into six divisions, each serving a global market and focusing on its own specific customer segments and an equal number of staff departments. At the head of each division is a divisional management team of process development managers and product managers, coordinating the manufacturing and product development process activities of the different factories. Some of them work at the different production sites; others are stationed at Engico's headquarters. The company's strong engineering culture is especially tangible in one of its staff departments, Corporate Technical Development (CTD),

which, apart from coordinating Engico's R&D and technology innovation activities, is also responsible for the development and implementation of the BPT process. At the CTD highly-educated engineers work with R&D activities focused on both the development and improvement of the manufacturing processes and the products manufactured in the factories. Recently, a number of KM techniques and models had been developed and implemented at Engico in order to, according to the senior managers, counteract the "not-invented-here-syndrome" and the somewhat related "reinventing of the wheel", believed to result in much effort and money being wasted in one part of the organization on solutions that were already developed elsewhere. These remedies included knowledge mapping, e-learning, knowledge repositories and best practice – all aimed at achieving efficiency and an increase in productivity through the optimisation of the knowledge resources of the company. The BPT project formed part of these efforts and focused on constructing and implementing a KM technology: an Intranet-based software application and a system of practices aimed at facilitating knowledge sharing in the form of best practices throughout the organization.

I followed the BPT innovators in their endeavours and recorded their activities and interactions over a 2-year period between November 2001 and September 2003. My fieldwork has been influenced by Alfred Schütz's (1967) ideas on the impossibility of understanding human conduct by ignoring its intentions, and the impossibility of understanding human intentions by ignoring the settings in which they make sense. Accordingly, I needed to gain an understanding of the *Lebenswelt*, or rather the "work-world" (Czarniawska 2002, p. 6) of the participants in the BPT project, a work-world dominated by the strong engineering culture prevalent at Engico. Apart from participating in informal conversations, observing computer use, training activities, modelling and other work activities of the innovators, I conducted a total of 18 interviews, observed 16 meetings and telephone conferences involving the innovators and the designated future users of BPT, as well as analysed a large amount of documents such as information pamphlets, training material, manuals, etc. produced within the project.

3 CONSTRUCTING THE BEST PRACTICE TOOL

The BPT project can be described as having passed through a number of different phases[1]. It all began in 1999 with what I refer to as the *Licensing Phase*. The engineers from Engico had read about Ford's Best Practice Replication (BPR)[2] process – a KM tool created a few years earlier to share best practices throughout the organization – in a report published by the Swedish Technical Attachés (STATT) and now they wanted to do what Ford was doing.

	Licensing Phase	**Development Phase**	**Launch Phase**	**Re-launch Phase**
Period	Feb 1999 - Apr 2000	Apr 2000 - Nov 2000	Nov 2000 - Nov 2001	Nov 2001 - Sep 2003
Main activities	Negotiating the licensing of the BPR process from Ford	Developing the BPT prototype	Introducing the BPT process in the factories and divisions	Developing new versions of the BPT process

Table 1. The BPT Project at a Glance.

1 I would like to stress however, following Latour (1987), that I do not see the distinctions between the phases as immediately given. I use them here in order to provide the reader with a brief, abstract overview of the complex interactions, which I followed for a longer period, realising at the same time that in reality the project did not lie along a clear-cut trajectory going through different phases.

2 For more on Best Practice Replication see Wolford (1999) or Kwiecien and Wolford (2001).

The managers from the CTD negotiated with Ford representatives to licence their BPR process. This "knowledge transfer", failed (see Diedrich, 2004 for a broader discussion about the reasons for the failure). The *Licensing Phase* ended as the engineers decided to develop their own system and their own tool based on the Ford model.

3.1 The Goodness of the Machine

The engineers and managers at Engico became innovators (or creative translators) as a project group consisting of six people – engineers, engineer-turned-managers and IT consultants – was established in order to build Engico's own best practice process, which eventually became known as the Best Practice Tool or BPT. The group fulfilled its task – to construct a "relatively well functioning" software application ready to be launched in the organization. Although some aspects of the BPT changed slightly during the two years between November 2000 and December 2002, the envisioned process displayed a certain inherent logic of how to get from a daily work practice of an engineer in a factory to an implemented best practice in another part of the organization. According to the innovators one of the key aspects of the BPT process was the identification and establishment of *communities of (best) practice*, organised around different parts of the manufacturing processes and different fields of knowledge, such as machine design, assembly, resetting or metallurgy, for example. These communities were to be Intranet-based, had their own homepages, and were envisaged to transcend organizational (divisional) boundaries and facilitate the sharing of best practices between factories and divisions. Different roles were allocated within the communities: the Community Head (CH) had the overall responsibility for the community and for accepting or rejecting proposed best practices. The Best Practice Coordinators (BPCs) were stationed in the factories and were in charge of identifying and describing (local) best practices and sending them off to the CH. The BPT project leader described the envisaged process in the following way:

> Ideally, the plan is that the people out in the factories or in a division can present an idea…it's carried out, and then he or she goes to the person who is the Best Practice Coordinator, who represents best practice in the company, and says: I have done this and that. And then we have a standard process of how to simply fill in the forms. When that is done, it's sent to the Community Head who has a look at it and says: 'As far as I know',…he's the one who has an overview of a community's competence…, 'this is the best'. And then he sends it out. And then we've constructed an IT-system that automatically…it goes out automatically to all the other members and suppliers in the system. And what the system demands from them is that they look at it, discuss it and get a decision from local management on whether to implement it or not. And they are then supposed to answer through the system…explain how it is done…. And they also have to answer in form of an implementation plan. [Erik, E011112:3]

The "IT system" in the project consisted of two parts: the BPT software application, which had been developed by the initial project group earlier in 2000, and the CoolSnake Intranet platform. Senior managers at Engico had signed an agreement with PLM Dynamics, a US IT-consulting firm, to purchase the platform in 2000. CoolSnake, a Product Lifecycle Management (PLM) system, was described by those purportedly in the know at the Scandinavian company as "state of the art", one of the most advanced systems of its kind, "leading edge", to use the terminology of the IT specialists. In the eyes of the senior managers at Engico, the acquisition of the PLM system had been a necessity. In the past different communities of engineers within manufacturing had constructed and maintained their own local databases used to organise manufacturing and product data relevant to their immediate needs. The fact that these databases were relatively localised and differed from one another meant that there was no possibility for anyone in the organization to search the totality of stored data. Engico's Senior Vice President for Technical Development explained his vision for the company:

> We have a clearly expressed strategy today that says that we want to share knowledge over divisional boundaries. […]. We have too little of that at the moment. So, when the divisional managers visit other factories they see things and think: why is this not implemented in the other factory? […]. We're an organization with a large number of factories all over the world and a lot of those factories are experiencing very similar problems…and of course there are creative people in all the different factories

> that have solved a problem in a good and creative way. And…eh…to then not spread this method that they have developed or found, that is…we believe…that is plain wrong. [Jens, 030506:3]

CoolSnake, according to the Senior Vice President, would solve this problem. It would lead to the homogenisation of the product data available within Engico. The fact that Engico had not previously attempted to control its product life cycles was seen as inefficiency, as a problem that needed to be remedied. The company, after all, produced a large number of different products. The BPT project leader thus summarised the envisaged benefits from introducing the BPT process:

> If one tries to summarise the advantages, it can be said that we in the long run build a culture in which we share our knowledge much more. The problem today is that not a lot of knowledge flows between the divisions…they are very goal-oriented…bottom-line, it's the result that counts. It's obvious that you get good cost reduction and a better level of performance by completing these improvements…and that it is quicker…the improvement process…because you do not have to develop it yourself. You can use something that comes from another place. [Erik, E011112:3]

The innovators at Engico thought that they had the answer to all, or at least many, of the organization's problems. By managing knowledge in the form of best practices, everyone would benefit, they claimed: The engineers in the factories would gain knowledge about the work that other engineers in different parts of the organization had done – how others had solved their problems in an efficient way. The managers in the divisions and factories would gain greater control over their operations, and the organization would benefit from the faster continuous improvement, the establishment of a knowledge-sharing culture and company-wide cost reductions paralleled with increased performance. The innovators thought they had developed a fantastic system. For them the "idea of BPT as such" was so powerful, so positive and so strong, that they fully believed "soon, everybody will be using the BPT process because it is so clearly the right thing to do". Now, all that needed to be done was to launch the process.

3.2 Faulty People and the High-tech Villain

During the last few weeks before the launch, the IT consultants at Engico's Data and IT Services Department worked with the BPT software application trying to adapt it to the CoolSnake environment. They tested the application on the company's so-called "Greenhouse server" and subsequently gave the go-ahead for it to be installed on the mainframe "Production server".[3] BPT became the first software application at Engico to run on CoolSnake. The pilot community could now be entered through the BPT homepage by anyone who was registered as a community member. In November 2000 the BPT process was launched in an unpretentious manner. All that remained was for the users to begin identifying, describing and submitting their best practices through the system. Soon, it became apparent however that the BPT process was not greeted with open arms. The engineers and managers in the factories were not getting involved in the process on the scale the innovators had expected. One of the innovators explained the problem:

> Their [the intended users] focus at the moment lies firmly with their own organization…their own work with improvement. […]. And they have their network, and they have their meetings via telephone…and they meet once or twice a year in this network. And they are probably satisfied…they are successful in their area. But we do not get this [knowledge] from them in a structured way so that it can be shared with

3 Engico had three servers: the Development server, the Greenhouse server and the Production server. The Development server was the one on which new software applications were developed. It was not very powerful and frequently broke down when applications were tested. Once the applications were developed and worked promisingly, they were installed on the Greenhouse server, which mirrored the IT environment at the company. Software applications such as BPT were run and tested on the Greenhouse server in order to determine if they worked flawlessly. Only when the software worked on the Greenhouse server was it given the go-ahead to be 'launched' throughout the organization on the mainframe Production server facilitating all of the company's daily IT communication.

> others…apart from the fact that two people in that group talk with each other…this informal interaction. [Karl, 020806:19]

One of the few places at Engico where a handful of best practices were actually described and submitted to the system after the first launch was one of Engico's production sites in Germany. One of the innovators recounts:

> [T]hey did have good stuff. They had the ideas ready and within a week they had submitted 8 high-quality better practices, which they had created in their project. And then the Community Head said: 'ok, now I want to see what the others are submitting. Now, I am not prepared to waste any more time on this. […]. Why should I waste my time on distributing my stuff, if I don't get anything in return? Show me first of all that the others are submitting something.' [Karl, 020806:23]

But, "the others" never submitted anything the way the innovators had intended. Still, they did not understand why the CH and the other engineers at the German factory did not continue to contribute to the process by submitting more best practices. After all, the innovators believed, participation in their system would be beneficial to the whole company as well as the participants. But, the CH and other engineers at the factory had a different understanding of the situation. They had engaged in activities outside their usual way of doing business by joining the BPT training sessions in order to learn about the system, by identifying what they considered as their best practices, by describing them explicitly, and, finally, by submitting them to the system. In return, they expected to receive input from other factories which they could use in their own daily activities. When they did not receive this knowledge, they thought that instead of being involved in the mutual practice of giving and taking, they were doing all the giving, while others were doing all the taking. Subsequently, they saw the BPT process as a waste of time.

Other users explained the lack of interest in the BPT process by pointing out that they had not been sufficiently involved during the initial stages of the project in the design of the process. One prospective CH said:

> In my opinion more of us users should have been involved from an earlier stage. The system is…how should I say…is not very flexible, constructed too rigidly. And one problem that we experienced is…eh…that there are so many passwords in the process, which one has to remember; and they have a limited lifespan. And because we don't work with BPT on a daily basis, we have had the problem that our passwords have expired…and it is very inconvenient to update them again. This is unnecessarily convoluted. And there, I believe, one should have had more users involved from the beginning. [Hans, 020523:14]

Another point mentioned by the users was that the improvements promised by the innovators such as cost reductions, increases in performance and the standardisation and evaluation of knowledge in the form of best practices did not make sense to the engineers in the factories. Ford had been able to calculate benefits from their BPR project, and so would they once they found the right way of measuring improvements. There was no doubt in the innovators' minds that this right way would be found. The division managers however found it difficult, if not impossible, to place a value on the best practices submitted. As one designated CH from Belgium pointed out:

> How is this supposed to work? It is very difficult…to say what the benefits will be. How can we measure things like improvements in the quality of work…worker satisfaction? [François, 030313]

The innovators were in a quandary. How were they to communicate the potential value of the BPT process to the users? They did not understand why the factory managers were not committing themselves and their organizations to the process. For years management had acknowledged the problem of little knowledge being shared among groups, factories and divisions. Now, they had finally developed a solution to that problem. So, why was nobody using it?

The innovators were not only frustrated with the lack of commitment displayed by the intended users; they also managed to find a villain they could blame for their misfortunes: the CoolSnake Intranet platform. Although the innovators identified minor flaws with the BPT application itself, the CoolSnake intranet platform was described as the source of most of the problems. The innovators as

well as the managers and engineers in the factories were dissatisfied with the performance of the platform. They were complaining about its quality and reliability, about the customer support they received from the platform's supplier, and about the system's complexity and rigidity:

> We have had all too many problems with the intranet platform…and that's what currently creates the difficulties for us. And that's what the Community Heads out in the factories put the blame on…that's why they say they don't use the system. [Karl, 020806:7/8]

While Lotus Notes, the communication tool most frequently used by the majority of employees at Engico, facilitated all the e-mail communication within the organization as well as the creation of databases for storing product data or other information, such as manuals, project information and memos, CoolSnake was not yet widely known at the company. The Senior Vice President for Technical Development believed that it was a good idea to install BPT as the first application on CoolSnake in order to demonstrate the platform's superior characteristics. Of these characteristics, the most valuable was understood to be the option of establishing and controlling workflows. As one of the IT consultants explained:

> CoolSnake is a PDM system which Engico uses…and, above all, will use in the future within product management. It's a *Product Data Management system* used to follow a product's life cycle from the planning stage until it is finished. And when it comes to BPT, it even makes use of a document structure…one can create documents and let them follow a certain life cycle or a certain workflow. And that's what BPT is all about…that one is able to follow a workflow…that the right persons can know when it is time for them to go through a document…or to create such a specific document. [Stefan, 021022:1]

However, soon after BPT had been launched it also became apparent that not only CoolSnake, but the whole IT network at Engico, were not performing as had been expected by the innovators and senior managers. According to the IT consultants:

> Of course it [the problems] also has to do with the network…what the network looks like around the world. One can understand that in India, for example, the network infrastructure is not that good. But still, the people in India are expected to create something, which actually happens on a server here in Scandinavia. So, there one has to accept that it's going to take them more time [to create and submit a best practice]. So, it's a question of performance…and it's also a question concerning CoolSnake, concerning the network and concerning the type of data that is prioritised when it comes to the traffic over the network. [Stefan, 021022:7]

But not only "remote" places such as India were affected. At a telephone conference involving the innovators and a divisional manager (DM) from Belgium, the following conversation took place:

> DM: It still takes a long time to create a best practice, even without attaching a file. This is something that should've been different now with the new release [of CoolSnake].
> Erik: It could be that your network is too slow. I do not have that kind of problems here…
> […].
> Erik: Let us try using the system.
> *They take on different roles and try to create a best practice.*
> *Later, as DM is trying to create a Response:*
> Erik: Oh, it's very slow…(pause)…I'm blocked…nothing…
> *Nothing happens for a couple of minutes.*
> Erik: It's doing it, but very slow.
> Erik: (*talks to me*) Oh, this sounds very bad.
> DM: What can I do? Oh… It's very slow…
> Erik: This must not have anything to do with the BPT system. We are still working in the Test server environment. It could be that a lot of people are using that at the moment.
> *DM has to leave the room and take a phone call. Erik talks to me.*
> Erik: This is bad. Their network is probably slow…I did not have any problems creating the best practice, even with a file attached. If it takes too much time, the people will not accept the system…they will not work with it. [Notes from a telephone conference, 020906]

After struggling for a year to get the BPT process underway, to convince the process development managers out in the divisions to establish new communities, to obtain a commitment from managers who had already established communities, and to persuade the members of the existing communities to describe and submit their best practices through the system, all without success, the innovators acknowledged in November 2001 that the initial launch of their process had been unsuccessful and took the BPT application off the Production server.

3.3 Improved Versions of the Machine

The innovators remained confident, however, and responded by making improvements to the system. They admitted that mistakes had been made in the past, but these mistakes need not be repeated in the future. From now on they would do things differently. This time they would ensure that the IT system worked smoothly before the BPT process was re-launched:

> As far as I know very few people have actually used BPT because…very much because of the performance of the system. So, we'll try and get that in order […] and I have been involved in improving the workflow and so on…not only in CoolSnake, but in BPT also, so that it will be easier for the user to use it. [Stefan, 021022:5]

With BPT having been taken off the Production server and placed on the Test server, another phase in the project began. During a period of roughly one year, the innovators were involved in simulations, test runs and training sessions with the prospective users. At the same time the IT consultants at PLM Dynamics worked on, and continuously released new versions and upgrades of the CoolSnake platform. These upgrades, they promised the innovators, would resolve many of the problems experienced with the platform. The upgrades were tested on the Test server or the Greenhouse server and the BPT software application had to be continuously adapted to the changing CoolSnake environment by the IT consultants at InfoCorp. The BPT project leader described this period as dominated by a "three-way battle" between Engico, InfoCorp and PLM Dynamics. In the end, the innovators had to wait until January 2002 before the BPT application was finally installed on the Production server in the new CoolSnake version. But this did not end the problems. Even this new "Version 6.2" was not working flawlessly. Time-outs persisted and the system had not become less complex and easier to use. On the contrary, CoolSnake had become more complicated, and, in a way, more unstable as the project leader explained:

> [I]f I want to make changes to the BPT software […] I have to at the same time check all the other applications running on CoolSnake in the whole organization in order to make sure that the changes I make, do not affect them. And why is that? Yes, that is so, because the CoolSnake system is so unstable. That's why one is forced to do that. The system's performance can be disrupted for the most mysterious reasons. [Erik, 030128:6]

At the same time as the innovators demonised CoolSnake they attempted to convince the future users of the good working order and the righteousness of their BPT. The project leader recalled an attempt to involve divisional managers in a steering committee that was to meet regularly and discuss identified best practices:

> My idea was that we could work through telephone conferences in this committee…that I could get support in that way. We had three such meetings…then it died. It died by itself…there was no acceptance. And the CoolSnake platform was so bad…even with the best intentions one could not drive an implementation of such a system. And then they refused to do other things. This benchmarking, which we are doing now, I tried to get that going then. And then their answer was always: make sure that the system works, and then we can do the rest later. That's my picture of the situation. I have a number of mails, which I wrote to Bertrand [a process development manager from Belgium] where I said to him: we can do a lot of things before the system works. We can identify best practices; we can describe them so that we really have them the day the system works. [Erik, 030922:10]

However, for the intended users from the factories, the main criterion for assessing the project was convenience. Compared to Lotus Notes, the engineers judged the BPT process as being far too

complex and too rigid. And, it did not work yet. Why should they get involved in BPT if it did not work – if it did not make their work easier?

In line with the fact that the innovators continued to make improvements to the system they revised their expectations as to the final outcome of the project. These expectations revolved around the time at which their process would be up and running and the first best practice would be submitted to the system and implemented in another part of the organization, allowing for a "value-added" measurement of the return on investment. Initially they planned that the process would be up and running before the end of 2000. These expectations were revised once it became apparent that the first BPT launch did not go as planned and that the BPT software application was taken off the CoolSnake platform and placed on the Test server for further improvements. One year later, in November 2001, as the innovators were preparing for a re-launch, they expected the process to be up and running sometime during the Spring 2002. In line with the continuous deferments of the deadline for implementation, the expectations of the innovators were also revised.

Also, apart from the fact that expectations were continuously revised as the BPT project lingered on, the view of probable alternatives to pursue was increasingly blocked. The initial goal of the project was to save money by "identifying, managing and sharing best practices" throughout the Engico organization. Once the BPT software application had been developed and the choice had been made to run the software on the CoolSnake Intranet platform, other options for achieving the project's explicit goal moved further and further into the distance. Running the BPT software on Lotus Notes could have been a possible alternative to running it on the CoolSnake platform, even in the later stages of the project. Paradoxically, as time went by and problems with CoolSnake persisted, Lotus Notes was nevertheless described less and less as a suitable alternative while CoolSnake was depicted as the "system of the future". Just as the "new" technology was defined as the solution to the lack of knowledge sharing across divisional boundaries throughout the organization, so was the old technology implicated as one of the problem's causes. Lotus Notes, although widely used at Engico, was increasingly described as old fashioned and ineffective in achieving senior management's dream of the "homogenisation of product and manufacturing data" throughout Engico.

After struggling for nearly three years to get the BPT process underway by attempting to convince the process development managers out in the divisions to establish new communities, by obtaining a commitment from managers who had already established communities, by solving the technical difficulties, and by persuading the members of the existing communities to describe and submit their best practices through the system, to no avail, the innovators acknowledged towards the end of 2003 that the BPT project was a failure.

4 DISCUSSION – THE BEST PRACTICE TOOL PROJECT AS A SURVIVING FAILURE

As I mentioned, my interest in this paper has not been to approach the phenomenon of Knowledge Management using technological, functional or efficiency criteria so often used in research within this field in order to determine why the project failed or succeeded. In other words, I did not wish to assess whether the system developed by the engineers and managers at Engico was the correct solution, and to decide as a general rule what type of practical solutions for the development and implementation of KM systems are superior to others (This is in any case decided by the organizational actors in the context of the project itself. Efficiency in this respect will be the consequence of who of the participants in the project succeeds. It is not meaningful for a researcher to stand outside the context of the project and decide what is efficient and what is not, who is right and who is wrong. The participants in the project do this themselves, not because they know something better than the researcher, but because they know). Instead, I focused on the question of *how* Knowledge Management fails by examining how the idea of Knowledge Management was translated into the organizational context at Engico.

As my account of the BPT project has shown, the idea of Knowledge Management appeared as a fashionable concept to the engineers at Engico, something every company should do in order to remain competitive. It provided the engineers with the opportunity of building systems and structures aimed at replacing opacity with transparency, creating order, organising the previously unorganised, and, in general, of constructing the perfect version of society in which "systems shall replace chaos" (Shenhav 1999).

From the beginning, the BPT innovators had big plans for developing a best practice process and implementing it in the organization by convincing everybody (or at least everybody of importance) of what they understood as the technology's inherent goodness. The innovators initially stated that the process would be established in a relatively short time, that they would soon be able to measure the value created by implementing best practices throughout the Engico organization in the same way as Ford had apparently been able to do, and that they would be able to show senior management that the BPT process was something "that Engico definitely should do". In line with the diffusion model, the innovators believed that the machine they were busy constructing was good even before it worked (see Latour 1987).

But, from 2000 the year the BPT process was developed and launched at Engico, until its eventual demise in 2003, the project was plagued by unremitting setbacks. Soon after the first launch the BPT innovators began to complain about a lack of commitment from the users and about the fact that the engineers and managers in the divisions and factories were not using the system in the way they had initially intended it to be used. The innovators were disappointed, but they did not give up. As is often the case in KM projects and innovation projects in general, they put the blame on the intended users and others who did not understand the tremendous benefits of using the new technology and/or technical problems (Latour 1996). When the engineers and managers in the factories did not get involved in BPT, the innovators interpreted their reticence as attempts to resist change. And when the technology resisted, when they encountered technical problems with the IT infrastructure – especially with the CoolSnake Intranet platform – the innovators argued that once the problems were solved, the BPT process would work, because the "idea of BPT as such was good" and in any case "had nothing to do with the IT system". The BPT innovators were certain that once their machine worked, everybody would be convinced of its goodness. But, the machine did not work and therefore could not "convince anyone *because* of its good working order" (Latour 1987, p. 11).

The BPT innovators' successive attempts at remedying the situation failed repeatedly however. Deadlines for possible re-launches had to be extended time and again as problems with the network, the servers and the CoolSnake system persisted, as the IT consultants from PLM Dynamics failed to deliver the promised upgrades in time and division managers failed to establish communities within the agreed time frames. As new resources were continuously made available in order to keep the project alive, without really delivering the expected returns, many of the actors in the project described it as unsuccessful. Yet, the project continued, perhaps because to abandon it would be to label it a failure, an event that is usually avoided if possible (Strannegård 2003). More and more financial resources were invested, more and more people were engaged, the innovators became more and more personally involved, and all of these sacrifices were made without achieving the goal of moving BPT from a prototype to a device used routinely in the daily work activities of the engineers and managers in the factories. After more than three years of trying to introduce the process in the organization the BPT project can be understood as a surviving failure (Persson 1979) when compared to the goals and visions established by the innovators and senior managers at the start of the project.

It should be kept in mind however that surviving failures are possible, not inevitable. One explanation for why the BPT project was allowed to survive might be found in the strong belief that existed among the innovators in the goodness of the machine they were constructing. As mentioned before, Persson (1979, p.22) suggested that the (ideological) belief in the goodness of automation and technology is one of the main reasons why permanently failing projects are nevertheless allowed to continue. The innovators put their faith in the process they were building to such an extent that even when things did not go according to plan, their belief was nevertheless untouched.

This is paradoxical in light of the fact that part of the technology, the CoolSnake Intranet platform, was implicated by the innovators in most of the problems with which they continuously had to cope. However, this did not have an inhibiting effect on their belief in the BPT process. Knights et al. (2002) suggest that if the belief in the goodness of the technology is strong enough, the problems experienced with it do not necessarily affect the belief in the technology itself. On the contrary, the authors claim, under certain circumstances failure may even reinforce belief. One merely needs a good reason to explain the failure. In the BPT project, failure was explained and justified by placing all the blame on the CoolSnake platform. The IT system became more and more decoupled from the (righteous) idea of BPT expressed in the innovators' frequent statements that once the problems with the CoolSnake platform were fixed, the BPT process would automatically work. In other words, through the innovators' focus on formal considerations – the continuous improvements they made to the IT system –, the belief in the (BPT) technology was maintained and even reinforced. Their preoccupation with plans, design, control and standardised documentation of knowledge made them mistake the tool they built to facilitate the process of knowledge sharing throughout the organization for the process itself.

The dream of building the perfect machine remained just that: a dream. After almost four years the project was eventually "put on ice" for good in September 2003.

References

Ahmed, P. K., Lim, K. K. and Loh, A. Y. E. (2002). Learning through Knowledge Management. Butterworth-Heinemann, Oxford.

Braun, H.-J. (1992). Introduction: Symposium on failed innovations, Social Studies of Science, 22, 213-230.

Chua, A. and Lam, W. (2005). Why KM projects fail: A multi-case analysis. Journal of Knowledge Management, 9 (3), 6-17.

Czarniawska, B. (forthcoming). Is It Possible to Lift Oneself by the Hair? And If Not, Why It Is Worth Trying. In Social Change and Organizational Change (Ahrne, G. and Papakostas, A. Eds.), SCORE, Stockholm.

Czarniawska, B. (2002). A Tale of Three Cities. Oxford University Press, Oxford.

Czarniawska, B. and Sevón, G. (1996). Translating Organizational Change. Walter de Gruyter, Berlin.

Davenport, T. H., De Long, D. W. and Beers, M. C. (1998). Successful knowledge management projects. Sloan Management Review, 39, 43-57.

Davenport, T. H. and Prusak, L. (1998). Working Knowledge: How Organizations Manage What They Know. Harvard Business School Press, Boston.

Diedrich, A. (2004). Engineering Knowledge: How Engineers and Managers Practice Knowledge Management. BAS Publishing, Göteborg.

Earl, M. J. and Scott, I. A. (1999). What is a Chief Knowledge Officer? Sloan Management Review, Winter, 29-38.

Earl, M. J. (2001). Knowledge management strategies: Toward a taxonomy. Journal of Management Information System, 18 (1), 215-233.

Knights, D., Nobel, F., Vurdubakis, T. and Willmott, H. (2002). Allegories of Creative Destruction: Technology and Organization in Narratives of the e-Economy. In Virtual Society? (Woolgar, S. Ed.), Oxford University Press, Oxford.

Knorr-Cetina, K. and Bruegger, U. (2001). Transparency regimes and management by content in global organizations: The case of institutional currency trading. Journal of Knowledge Management, 5 (2), 180-194.

Kreiner, K. and Mouritsen, J. (2003). Knowledge Management as Technology: Making Knowledge Manageable. In The Northern Lights: Organization Theory in Scandinavia (Czarniawska, B and Sevón, G. Eds.), Liber AB, Malmö.

Kwiecien, S. and Wolford, D. (2001). Gaining real value through Best Practice Replication, Knowledge Management Review, 4 (1), 12-15.

Latour, B. (2000). When things strike back: A possible contribution of 'science studies' to social sciences. British Journal of Sociology, 51 (1), 107-123.
Latour, B. (1996). Aramis, or the Love of Technology. Harvard University Press, Cambridge, MA.
Latour, B. (1987). Science in Action. Harvard University Press, Cambridge, MA.
Latour, B. (1986). The Powers of Association, in John Law (Ed.), Power, Action and Belief - A New Sociology of Knowledge. Routledge & Kegan Paul: London.
Lucier, C. and Torsiliera, J. (1997). Why knowledge programs fail. Strategy and Business, 4th Quarter, 14-28.
Mertins, K., Heisig, P. and Vorbeck, J. (2003). Knowledge Management: Concepts and Best Practices. Springer, Berlin.
O'Dell, C. and Grayson, C. J. (1998). If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice. The Free Press, New York.
Persson, B. (1979) Surviving Failures. Almqvist & Wiksell International, Stockholm.
Sahlin-Andersson, K. and Engwall, L. (2002). The Expansion of Management Knowledge: Carriers, Flows and Sources. Stanford University Press, Stanford.
Schütz, A. (1967). The Phenomenology of the Social World. Northwestern University Press, Evanston.
Shenhav, Y. (1999). Manufacturing Rationality. Oxford University Press, Oxford.
Star, S. L. (1995). Ecologies of Knowledge: Work and Politics in Science and Technology. State University of New York Press, Albany.
Storey, J. and Barnett, E. (2000). Knowledge management initiatives: Learning from failure. Journal of Knowledge Management, 4 (2), 145-156.
Strannegård, L. (2003). Flip eller flopp? Om misslyckandets dynamik. Raster, Stockholm.
Teece, D. (2000). Managing Knowledge Assets in Diverse Industrial Contexts. In Knowledge Horizons: The Present and the Promise of Knowledge Management, (Despres, C. & Chauvel, D. Eds.), Butterworth-Heinemann, Boston.
Wolford, D. (1999). Ford's Best Practice Replication Process: A value-based KM process that works. Knowledge Management Review, 10, 12-15.