Cases as a knowledge management tool for companies

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Contents

1. Introduction

1.1. The search for efficient methods of knowledge management

In the normal course of their work, members of project teams acquire and share knowledge about managerial practice. When the project is completed, however, the teams disband, individual knowledge is dispersed, and collective learning is often lost. There is little motivation to reflect on the experience accumulated during the project, or to document it for re-use in the future. To avoid this loss of knowledge, and the attendant costs of repeatedly re-inventing the wheel, companies are increasingly using databases to store organisational experience and knowledge (Tenkasi & Boland, 1996). However, investment in IT solutions does not always bring the expected rewards. One problem is that the knowledge entered in the databases is often too specific to a particular task to be useful in other contexts. Another is that the databases are not always accepted and used by employees. Novartis, for example, set up a Yellow Pages database for identifying experts amongst its 90,000 employees around the world. At the end of the first year, the database had only 200 entries.

There are many possible reasons for this lack of acceptance: the database may be too complicated, employees may not have faith in it, the idea may conflict with company culture or accustomed management style, etc. If the database is not used, knowledge is not transferred to other employees who might be able to benefit from it. In these circumstances, the organisational knowledge base does not evolve.

Companies must therefore find ways to ensure that knowledge is shared and transferred throughout the whole organisation (Probst, Raub & Romhardt, 1997). This issue is not new, but it becomes ever more pressing. We live at a time when new knowledge is abundant, its useful life grows shorter, and products and services are more knowledge-intensive than ever before. Knowledge is therefore a key asset in gaining competitive advantage (Barney, 1991; Winter, 1987). According to Buce et al., "…. the central competitive dimension of what firms know how to do is to create and transfer knowledge efficiently within an organisational context" (Buce, Kogut & Zander, 1993). The perceived need for efficient ways of sharing and transferring knowledge - i.e. of managing it – is therefore growing.

An unused database is no more than a cemetery. IT solutions do not in themselves address the problem of *integrating new knowledge* into the behaviour and functioning of the company (Lyles & Schwenk, 1992), i.e. they do not translate new knowledge into action. The question is therefore how to initiate a process of organisational or collective learning so that new knowledge will influence company activity.

In this paper we present a method based on the joint writing of case reports. This method addresses the problems described above. It also provides a medium through which conceptual and relational knowledge can be expressed effectively.

Cases are one of the commonest teaching tools in management training. They are widely used in MBA programmes around the world, since they enable students to learn from real life situations like the ones they will encounter in their future roles as managers (Abell, 1997; Wright, 1996). Working with cases gives students an opportunity to compare their own suggested solutions with what the company actually did. Discussing and evaluating alternative possibilities helps them to acquire a more developed view of realistic management options.

In industry, however, little use has been made of cases as a method of management training. We are not suggesting here that companies should organise seminars or workshops to study case histories taken from other organisations. Our proposal is rather that companies should systematically document their own cases, i.e. the knowledge they have acquired themselves in the course of their own activities. During the documentation process, knowledge that is implicit and closely linked to experience can be made explicit; this may lead to learning at different levels within the company.

1.2. The concept

The object of our research is to discover what can be achieved if managers write their own accounts of change projects in which they have taken part or which they have researched personally. Such reports would contain the managers' own reflections on the project and its results (Bailey et al., 1997), including the lessons they learned, the difficulties they encountered, how they coped with them, what mistakes they made, and what they would do differently next time. The account is written jointly by a group of managers from the "case company", i.e. the company where the change project took place, and managers from other companies; the latter must also have had experience of change projects. The inclusion of both "insiders" and "outsiders" creates a broader approach to the evaluation and interpretation of the cases. Before they start to write, all the managers spend some time at the “case company”, interviewing employees who took part in the project and who are selected from different hierarchical levels and functional areas.

1. 3. Aims and methods

The purpose of the research is to explore to what extent the joint writing of case studies can (a) serve as a method for transferring to others knowledge that has been gained through experience, and (b) initiate a process of collective learning (Garvin, 1993).

We carried out some preliminary research in the hope of identifying conditions that promote effective case writing. To this end, we worked intensively with students on the Geneva MBA programme to produce case reports on Novartis, Holderbank, Arthur D. Little, and Multilink, the French-German telecommunications joint venture. This exercise yielded some valuable insights into successful joint case writing.

The main body of our research is being conducted within the forum of the Swiss Management Courses (Schweizerische Kurse für Unternehmensführung, or SKU). In this setting we are working with 80 middle and top managers from various industries, writing case reports on change management projects in their companies.

The research addresses the following questions:

- To what extent is the writing of case studies an efficient way of transferring knowledge?

- Is the method particularly suited to certain types of knowledge, i.e. factual, task-related, tacit, relational or conceptual?
- What kinds of learning does the method generate?
- What learning takes place in individuals? The individual persons who are most likely to learn from the case are (a) the case writers, both internal and external to the company, and (b) the report users, who may also discuss the case and add to the lessons learned.
- What learning takes place at the collective level of the company, and what is added to the common (IT-supported) knowledge base?

Each case study is produced by a group of 9 or 10 managers, with the support of a case writing assistant. The assistant is familiar with the reporting method, and can offer advice on what kinds of things typically appear in the case report, and which elements should be included in the teaching notes. To control for inter-group differences and ensure consistency, all the assistants work from the same set of reference materials and follow the same guidelines for instructing the groups.

In the first stage of the research, the groups will produce eight case reports, each complete with teaching notes, and will then complete partially structured questionnaires. The questionnaires address the questions listed above. We hope that the responses will give us an overall picture of the case writing exercise, its effects, and participants' perceptions of it. We shall then carry out in-depth interviews with selected group members on the most salient issues emerging from the questionnaires. In the course of these interviews we hope to explore any differences which may emerge between report writers who are members of the case company and those who are outsiders.

The case reports can also be read as stories. We therefore plan to apply interpretative methods such as discourse analysis. In this part of the study, we shall focus on how the content is conveyed: what themes are chosen, what stylistic devices are used (metaphors, direct speech, contrasts, verbal pictures, etc.). We shall be interested to see what types of discourse occur, and in what respects they differ from each other.

1.4. Purpose of this paper

This paper offers only a preliminary account of the research, since the empirical findings are not due until September. At this stage, our main objective is to introduce our ideas and hypotheses. We shall therefore consider four perspectives on joint case writing; we hope that we shall be able eventually to evaluate its merits from each of them.

First, we shall examine the joint writing process as a teaching method. We shall then move on to the narrative aspect, i.e. case studies viewed as stories, in which we can distinguish between tacit or implicit knowledge on the one hand and explicit knowledge on the other. This distinction will lead us to the third perspective, i.e. case studies from the viewpoint of knowledge in general. Finally we shall consider the issue of learning, i.e. what kinds of learning take place, and at what levels (Casey, 1993; Fiol & Lyles, 1985).

2. Four perspectives on cases

All four perspectives will be considered, but the emphasis will be on the last two, i.e. cases in relation to knowledge and cases in relation to learning. These two dimensions are obviously closely linked.

2.1. Cases as a teaching method

If case reports are written in order to record lessons learned and to facilitate transfer of knowledge through reflection on experience (Hedlund, 1994), then they are being used as a teaching method. This raises a number of questions.

First, it is legitimate to ask why a company should go to the trouble of organising joint writing of its own case reports for teaching purposes (Locke &

Brazelton, 1997; Thomas, 1998). Case reports from other companies are available from academic institutions such as IMD or INSEAD.

The answer comes from research into the psychology of learning, which indicates that an active role in learning dramatically increases retention rates. When participants actively produce and record information, the retention rate for the material can be around 90%, compared with only 20% for material that is heard and recorded, e.g. by taking notes in a lecture, and 10% for material that is simply heard, e.g. in a lecture. These findings have promoted a growing recognition of the “action learning“ approach in management. The approach is based on the view that learning is more efficient when it is combined with action on the part of the learners (Raelin, 1997). The learning process starts with practical experience, which is then subjected to a process of collective reflection. This leads to teaching activities, and thus to the transfer of lessons learned. The “live case method“ developed by Urban and Keys (1994) combines an action learning approach with real case studies. They believe that working on an existing company problem can broaden the thinking of middle managers, prompting them to see the company’s current difficulties from the point of view of senior management.

The joint writing process is an important feature of case reporting as a teaching method. The act of creating a written report gives new meaning to the project, since the report includes personal impressions and additional information gained from company visits, interviews and presentations. During the joint writing process, managers describe in their own words the initial situation, the problems they needed to solve and the challenges they faced, and they evaluate the results of the project. They discuss as a group questions such as how to assess the "facts" presented to them, which features of the case are especially noteworthy, and what they hope to convey to the readers. In the course of these discussions, they construct meaning (Weick, 1995; Berger & Luckman, 1996). Input is provided by people from different backgrounds, i.e. managers from the case company, managers from other companies, and the employees who have been interviewed for the purposes of the case study. The study integrates the different viewpoints of all these people. The final report is therefore quite different from a case study written by one person.

A second legitimate question is why joint case study writing should be a better way of recording experience and learning from it than other established tools, such as project reports or lists of bullet points. This question can be answered in terms of the distinction between the two parts of the report, viz. the pure case study (CS) and the teaching note (TN) (Leenders & Erskine, 1989). The case study tells the story in a descriptive fashion; it is a narrative in which the writers relate the circumstances in which the project started, the difficulties endured, the changes introduced by the project, the questions it raised, the obstacles to be faced, and the range of options. The teaching note, however, has an instructive rather than a narrative function. It contains joint reflections on the lessons learned, the key success factors, any failures and the reasons for them, the results, and conclusions. The case study method is therefore doubly effective. First, the task of writing the report causes the authors to reflect on the content of the project. Second, the creation of the teaching notes requires them to reflect on the lessons learned (what points do I want to teach or illustrate by means of this case?). It also prompts the writers to consider how the knowledge can be applied, and how others can best learn what they need to know. Since the case study is about a real project, the teaching notes can contain a combination of theoretical background and real practical experience; this combination is likely to foster action learning. The educational concept behind the TN is the conviction that the ability to teach the case, i.e. to explain it to others step by step, is the best possible evidence that the teacher possesses a thorough understanding of it. A factual project report without the teaching element cannot offer this unique combination of narrative, analysis and instruction.

For a further discussion of case histories versus bullet points see Kleiner & Roth (1998). These writers argue that research reports present the case as a set of logical arguments, each sentence representing an analytical step on the path to validity. However, a research report alone does not help people to change their behaviour, since “it does not reach them at the level of deep understanding.“

2.2. Cases as narratives

The product of the writing process, i.e. the case report, is not simply a document containing data, information and knowledge. It can also be read as a story (Neuhauser, 1993).

Telling a story involves more than presenting facts in a logical order. In the case study (CS) part of the report, writers often use literary devices such as metaphors, vivid imagery, associations and characterisation. These and other stylistic devices add meaning to the case study, because they offer the reader access to the project at a different level (Cohan, 1988). If we read the case report as a narrative, and consider the images, metaphors and character descriptions, we find a layer of meaning containing knowledge that would otherwise remain hidden or implicit (Polkinghorne, 1988). In a case study of a merger, for example, it was clear that differences between the cultures of the two merging companies constituted a serious obstacle during the integration phase. The report group labelled the members of the two companies “cowboys“ and “English gentlemen“. These labels provide an effective characterisation of the two cultures and highlight the differences much more vividly than a list of adjectives. The metaphor conveys a different and deeper layer of meaning, which would be lost in a more factual report noting the presence of "considerable differences between the two company cultures."

Within groups and organisations, shared meanings are defined and perpetuated through the use of language. The labels, images and expressions used in the case studies are the outcome of such a process of constructing shared meanings (Berger & Luckman, 1996). The report conveys the case writers’ assumptions about how to describe aspects of the change project. The writers discuss ways of evaluating the results of the project, and of making sense of their own impressions, together with all the information gathered from documents, interviews and other sources. This process of “sensemaking” (Weick, 1995) depends on the use of language to convey and communicate the meanings assigned to various aspects of the case. Viewing the case study as a narrative, we plan to explore the construction of the shared meanings that appear in the stories (Czarniawska, 1997). We shall therefore examine the language using qualitative methods such as discourse analysis.

3M is a company which makes deliberate use of the narrative form in its "strategic stories" (Shaw, Brown & Bromiley, 1998). Members of the company use strategic narratives in their planning processes, in order to clarify to others the thinking behind their plans, and also to capture the imagination and stimulate the enthusiasm of other employees. The technique is based on the recognition that a story defines a set of relationships and a sequence of events, and identifies causes and effects. The story weaves all these elements into a complex whole that is likely to be remembered.

2.3. Case studies and knowledge

Many writers on knowledge management make the distinction between implicit and explicit knowledge (see for example Nonaka, 1987; Eck, 1997). Implicit knowledge is often bound to particular experiences; the difficulty of making it explicit is widely recognised (Hedlund, 1994; Polany, 1966). We hypothesise that the act of reflecting on the lessons learned in relation to a particular project is a useful way of making knowledge explicit where it would otherwise remain implicit. There are a several reasons for this:

1. All those who took part in the project are questioned not only about <u>what</u> happened, but also about <u>how</u> it happened.
2. The group of case writers contains some outsiders as well as members of the case company; this adds an important dimension because the outsiders may

play devil's advocate, questioning and challenging the inside view of the project.

3. Since the outsiders did not participate in the project, they are expected to research the details and to try to understand how things work in the "foreign" company. This obliges the insiders to give careful explanations of details that they would otherwise take for granted. The outsiders in turn contribute an additional perspective because they come to the group with their own mental models of how things work in their own company.
4. When the "outsiders" are exposed to the different approaches existing in the case company, they may become aware of tacit assumptions, rules and behavioural codes which are prevalent in their own organisations, and which might otherwise never be questioned. Differences that are not otherwise obvious are thus revealed between the "case" company and the outside company. Discussion of these differences may also create a new awareness of certain rules, habits and behaviours in the case organisation itself that are usually hidden below the surface.

The process of group reflection goes beyond making implicit knowledge explicit; it can also give rise to new knowledge. The interplay between tacit and explicit knowledge during discussion can lead to what Nonaka calls "genuine knowledge creation" (Nonaka, 1987). The team considers what conclusions can be drawn from particular observations, what theoretical positions can be taught by means of the case study, and how the lessons learned can be shared, preserved, transferred and re-used. Team members elaborate on what they know, and may create new ideas by sharing their insights.

When one person teaches others about a case study, the teacher's knowledge becomes conscious and explicit and can thus be transferred to the students. There is much more to learning than the passive acquisition of information. An effective teacher elaborates the subject matter, reflects on its significance, considers links with other topics, and chooses an appropriate teaching method. Knowledge only forms an effective basis for action if the material has been well taught.

Discussion of the case and reflection on the lessons learned also lead to development of the collective knowledge base, since participants contribute their personal insights, recall their own work experience, and add the impressions they have gained during visits to the company. We shall discuss the development of the organisational knowledge base in the next chapter, where the focus will be on organisational learning.

We have already mentioned the distinction between implicit and explicit knowledge. We turn now to a further set of distinctions, i.e. between task-related knowledge, conceptual knowledge and relational knowledge: These three types of knowledge differ in scope, level of specificity, and degree of explicitness. *Task-related* knowledge is factual knowledge that tells us how to accomplish a given task. This type of knowledge is highly specific. Its scope - i.e. its area of application - is fairly limited. It tends to be relatively implicit. An example would be an engineer's knowledge of how to build or repair a particular technical device. *Conceptual knowledge* has a wider scope, but it is less specific; it is concerned with ways of approaching a problem or a project. Good examples of conceptual knowledge would be typical procedures for launching a product, or for implementing a research and development project. In its broadest form, conceptual knowledge is knowledge about methods for solving problems. It is usually explicit, and provides a framework within which specific tasks can be approached. *Relational knowledge,* however, is mostly implicit, and relates to particular persons, habits, rules of the game and hidden rules within an organisation. Its scope is relatively limited, though some generalisation is possible.

The joint case writing method can reveal knowledge of all three kinds. Task-related knowledge is found in the description of the change project, the design of the constituent tasks and the challenges faced. Conceptual knowledge is conveyed in the description of the project procedure and its phases**.** Relational knowledge is the most difficult type of knowledge to record; however, the narrative aspect of the case study is helpful here. Elements of relational knowledge may be found, for example, in descriptions of the management interfaces between different divisions or geographically divided teams, or in the characteristics attributed to persons who played an important part in the project. The use of images, metaphors and associations may also convey relational knowledge.

Learning and knowledge are closely related, since learning processes lead to changes in the organisational knowledge base. We shall now examine what kinds of learning processes can be generated by the case writing method and where the effects might be recognised.

2.4. Cases and learning

Case writing may prove a useful tool for promoting learning at different levels in the organisation. The “smallest unit of learning“ is the individual; this also has implications for collective learning (Argyris, 1982; Daft & Huber, 1987).

Learning processes at individual level

It will be interesting to examine the differences between the individual learning reported by managers who are members of the case company and that reported by managers who are members of other organisations. We might expect the managers from the case organisation to report more learning because it is their case, involving their mistakes and the lessons that they themselves learned from the project. Equally, we might argue that managers coming from a different background to a completely new project would have more to learn. The experience might help them to avoid the mistakes reported in the case study, or to see similarities with situations in their own past from which they failed to draw conclusions at the time. The results of the questionnaire will show whether one of these groups learns more than the other.

An important element in the learning process is the ability to make hidden rules of the organisation explicit and to reflect on them, thus revealing deep cognitive structures (Dodgson, 1993). Argyris (1997) has shown that case writing can be an effective tool for revealing the differences between espoused theories and theories-in-use. In his method, participants are asked to write a two-page case conversation. A “case“ in this context is an important situation experienced personally by the participants and relating to a problem that they have tried to solve within their organisation. They are asked to describe the steps taken to resolve the problem, including conversations with other members of the organisation; one of these conversations is chosen as the case conversation.

In the right-hand column of the page, the participant records the actual conversation; in the left-hand column, he or she notes the thoughts and feelings experienced during the conversation. Comparison of the two columns and discussion of the differences between what is said and what is thought or felt reveals the discrepancies between theories-in-use and espoused theories. In his role as moderator, Argyris explains how learning is inhibited because of the gap between what is actually said and what is thought and felt. Making participants aware of this obstacle allows them to identify unexplored learning opportunities, both for themselves and for those with whom they discuss it. Argyris concludes that “pre-thought and afterthought, thus reflection, can enhance learning“ (Argyris, 1997).

We expect the case writing method described here to make people aware of learning opportunities. It therefore has the same purpose as the case conversation method described by Argyris.

Learning at group level

We shall consider learning processes in two groups: the group of case writers, and the project group interviewed for the purposes of the case study. In the case writing group, we shall focus on the development of new knowledge through group discussion. We shall try to determine to what extent each participant's point of view has been influenced and broadened by the different views of other group members. We shall also be interested to see how far the actual writing of the case has contributed to learning within the group. If "writing is thinking" (Shaw, Brown & Bromiley, 1998), then joint writing is joint thinking. The results of this process of joint thinking will probably differ from the thoughts of a single case writer. Joint thinking may be expected to yield additional insights for the members of the case writing group.

The group of project workers who are interviewed will profit in two ways. First, the procedure gives each member of the group a chance to reflect on the project, and this is likely to reinforce individual learning. There is usually no such opportunity to reflect on the meaning of past events, because when a project ends, members of the project team are immediately assigned to new groups and have new tasks to perform.

At group level, the project group will receive feedback on the comments they made during the interviews, since the finished case report will be made available to them. They will then be able to see how their points of view have been incorporated into the case study and what they added to the final picture. Each member of the project group will also be able to read the complementary views of other group members.

Learning at company level

There are many ways in which individuals and teams can learn from their project experience. Unfortunately, however, there are few mechanisms that companies can use to ensure that this learning is utilised at organisational level (Bower & Hilgard, 1981).

Organisational learning mechanisms are structural and procedural arrangements that allow organisations to collect, analyse, store, disseminate and use information in a systematic fashion. These mechanisms become embodied in organisational routines, practices and beliefs, and are considered important in improving organisational performance in a number of areas (Huber, 1991). Organisational learning can be seen as the sum of changes in the organisational knowledge base.

The writing and use of cases can contribute to the evolution of the shared knowledge base. The process of feeding the written cases back into the company is an institutional arrangement for collecting, storing and disseminating information. When the case report is presented and distributed throughout the organisation, it increases that organisation’s ability to reflect on its past, thus creating an environment conducive to collective learning. These days, a company with a superior capacity for learning possesses a key competitive advantage. The use of case studies can therefore ultimately enhance the organisation's competitiveness.

Internal management training programmes are one of the routes by which the case can re-enter and permeate the organisation. We shall follow the internal use of a case written jointly with Holderbank, in the hope of discovering how much people learn from discussing a case relating to their own company and written by other members of their organisation. We shall also consider whether case studies need to be adapted for use on management development programmes, and if so, how.

Internal management training programmes are not in themselves sufficient to effect change in the organisational knowledge base. This requires exchange and sharing of knowledge on a wider scale (Pankakoski, 1998). Information technology can facilitate exchange and sharing of cases. One possibility is to store cases in a “document development forum”, where they can be made available both to members of the organisation and to outsiders. Instruments such as case-based reasoning (CBR) systems are installed on an IT platform (Venugopal & Baets, 1995). A CBR consists of a case library plus a software system which allows the user to search for a case of a particular kind, in order to discover what experience the company has in solving a given problem. The documented case knowledge can then be applied in similar situations, and combined with experience gained on other projects. Instruments of this kind can be used to create a source of generalised knowledge that crosses organisational boundaries.

Figure 1 shows the levels of learning described above, together with the different types of knowledge that can be documented thanks to the narrative character of joint case writing.

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3. Limitations of the study

We are convinced of the merits of case writing as a tool for fostering learning and for transferring knowledge within the organisation. However, the method has some obvious limitations, and some aspects of our current research are also open to question:

- Case writing always refers to past experiences. Given that every project has its own particular characteristics, we might ask how far the lessons learned from one case can be generalised to subsequent projects. The purpose of the case-writing method is not to generate rules of management, and as a research method, the case study does not aim to be representative. However, one of the avowed aims of case writing is to re-use lessons learned. In support of this, it can be argued that the importance of experience is frequently mentioned in management literature; this suggests that practitioners do indeed find lessons learned on previous projects useful.
- It is not clear to what extent we are justified in generalising from our current research. Can the results of the SKU study be considered representative, when we have only 80 participants?
- The validity of the information provided by our participants is not established. We hope to reduce the risk of participants giving socially acceptable answers by using anonymous questionnaires. Managers are also given anonymous questionnaires to evaluate the SKU course programme.
- Munford's research has indicated that people have individual learning styles. This could affect individual perceptions of the merits of case writing.

However, Munford finds the case method compatible with all the four learning styles that he describes.

- Other uncontrolled variables that might influence the results of the study include individual motivation and group dynamics. It is difficult to assess what the effects of these factors might be.
- Power imbalances amongst employees could influence the success of a project, but might not to be mentioned by the managers involved in joint case writing, especially if they themselves had abused their power in the course of the project. We hope to deal with this objection at least in part by obtaining the views of other project members in interviews; it is difficult to say with what success, since internal power issues are usually part of the hidden life of the organisation.
- Finally, we do not yet know whether the knowledge acquired through joint case writing will lead to changes in behaviour. This can only be determined by following participants' future experiences and observing their behaviour.

4. Success factors

In conclusion, we should like to emphasise three factors that we believe are vital to the success of the case-writing method:

1. Collaboration between company “insiders” and “outsiders” is important, because it is through the interplay of questions and discussion within the case writing group that knowledge becomes conscious.
2. A narrative style should be not merely permitted, but positively encouraged. Managers are used to writing reports or executive summaries in an objective style; they may need encouragement to write their story without trying to make it sound rational.
3. Case writing requires collaboration not only amongst individuals, but also at company level. Companies must be prepared to disclose and discuss the problems and failures they have experienced if they are to learn from them. They need an atmosphere of openness about failure, which should be seen as something permitted and natural. Tolerance of failure is part of the overall company culture. The case writing method can only achieve its full potential in companies where this tolerance is present, and where there is a genuine desire to profit from experience.

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