

Working with ERP systems—Is big brother back?

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Abstract

This article analyzes the results of an 18-month research study examining the implementation of an ERP system within a multinational firm specialised in the extraction and transformation of raw materials. The analysis focuses on the social effects software can have on working procedures and power-sharing structures within an organization. The three principle results show that implementing an ERP system is not a neutral process. Indeed, the ERP triggers fundamental changes in the way managers and assistants organize themselves and it tightens the control of their work. However, it also presents a paradoxical characteristic, managers transgress procedures in order reach their targeted goals. Finally, the rules by which everybody has to play tend to give more importance to specialists, such as purchasing buyers.

We conclude this article by raising the hypothesis that both the ERP and the top management, who decided its implementation, generate social changes.

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1. Introduction

This article examines the social side of an ERP implementation, and, more precisely, gives an illustration of how the implementation of such a tool can modify working procedures. Such a topic seems to emerge in the literature in managerial sciences [5]. Without seeking to be utterly exhaustive, the greater part of current research can be summarized and divided into three main themes. The first one explains why so many ERP implementations are unsuccessful [1,11,4]. The basic conclusion is the approach used to conduct the project is often responsible for this result.

The second theme tends to reveal the dark side of ERP implementation. Davenport [6] focuses on the loss of autonomy in defining corporate strategy and warns managers who may be interested in ERP implementation, against these effects, such as the impact of ERP implementation on long term strategy (inflexibility versus need for flexibility. . .) and the profound effect it can have on organizations in terms of control, ERP implementation involves the centralization of control and again influences hierarchical systems. Other research studies point to the same conclusions [2,3,9], ERP implementation seems to have an impact on jobs, power allocation and stakeholder value. From a more general perspective, Gilbert and Gonzalez [7] reveal that, whatever the job, the ERP system is seen as a

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means to dominate employees and force them to act according to certain decisions. ERP could be a new way of managing employee autonomy while, at the same time, controlling their actions.

Finally, the last theme raises the question of who (or what) is responsible for all these bad consequences. Recent work strives to answer the debate about the consequences of ERP implementation, is it the technology or the humans who manipulate it that is (are) responsible for the implementation. Grant et al. [8] note that ERP systems are considered as potentially capable of transforming the structure and management of work in a “beneficial way”, regardless of organizational context. These authors tend to minimize the role of techniques in such implementation and highlight the importance of the actors’ discourse in achieving results.

With respect to this last topic, we can note that even if these authors retrieved corporate control, few case studies have actually addressed the subject. In this paper, we aim to present the case of an ERP implementation within a division of Pechiney, where we conducted a longitudinal study, and present two categories of initial conclusions that feed the debate on ERP and corporate control. More precisely, our first results reveal the ERP implementation, conducted by the top management of the firm, triggers fundamental changes in the way managers and assistants organize themselves and it tightens the control of their work. However, it also presents a paradoxical characteristic, managers transgress procedures in order reach their targeted goals. This transgression, which is legitimized by the top management, appears to be the only remaining way for the software to justify itself. Finally, the new procedures, which are brought about by the software, tend to give more power to buyers, who have the right to control everybody’s spending.

2. An exploratory study to put forward hypotheses for qualifying ERP systems: the Pechiney case

2.1. Data collection

In order to “grasp” the impact of an ERP on working procedures, a longitudinal study was conducted within a specific business unit of *Pechiney*, specialised in

commercializing competencies and “Know-How”, where several modules of SAP R3 have been implemented. Results are based on information collected from three different sources [12], 80% of the employees of the business unit, i.e. 25 people, were interviewed. We also met with SAP users as well as managers or people who participated in the SAP implementation workgroup. They belonged to several different services, such as human resources, finance, accounting or various sales services. All of these people were interviewed three times during the first few weeks following the ERP implementation, 6 months later and 1 year after the implementation. The results also came from the analysis of several internal documents, such as written SAP working procedures or minutes from trade-union meetings, as well as from direct observations made during our visits to the firm to conduct interviews or, as a teaching assistant, to participate in training seminars. To be more precise, we focused our research on the way people use specific modules of ERP software, and especially, the finance and reporting module, the purchasing module and the human resources management module [13,14]. In this paper, we will focus our attention on the way the purchasing module was used.

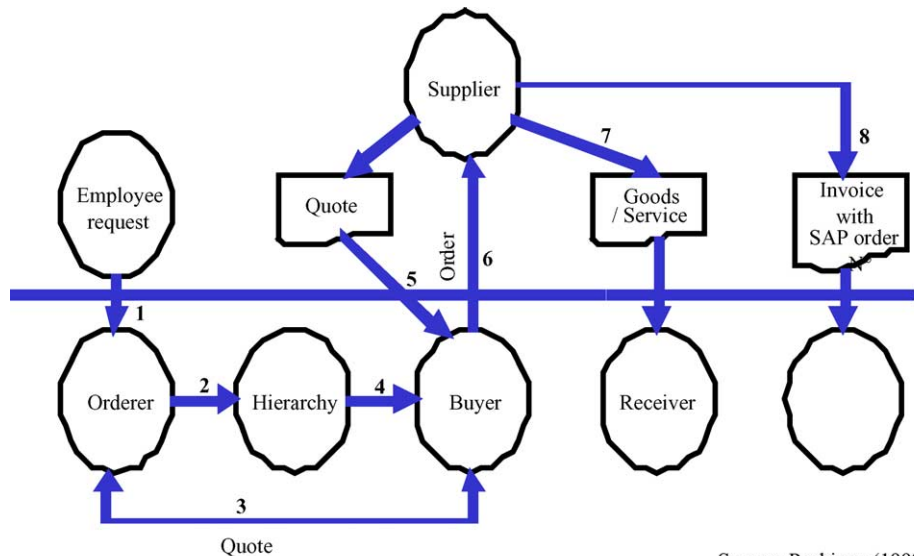
2.2. Spotlight on the reasons for the implementation

Upper management, i.e. *Pechiney*’s CEO, decided to implement an ERP system for two main reasons. Firstly, the existing information system, and especially the purchasing module, which we will present in more detail later were getting old; secondly, the CEO wanted to conduct a cost-savings project which was launched towards the beginning of the 1990’s. As leader of the ERP market, SAP was chosen.

SAP was implemented in quite a traditional manner a project group designated by the CIO and assisted by external consultants, made what we call a “business process reengineering” [10], established the procedures of each module and defined the parameters. The implementation was very fast, it began in 1998 and the first users started working on it in January 1999!

2.3. The purchasing example

Before the SAP implementation, the purchasing process was rather informal, and nearly everyone



Source: Pechiney (1999)

Fig. 1. The purchasing procedure with SAP R3. Source: Pechiney (1999).

could order what they thought best for the situation. Thus, if a service needed a specific material, which was not available on stock, the assistant would call the supplier and order the required quantity. As the head of the business information service in charge of economic intelligence and procurement for the group comments:

“With the old information system, we received invoices. They were stamped, signed and sent to the accounting service. Then, once the order was received, a fax was sent and the invoice was paid”.

SAP implementation helped the group reduce spending and employ the same working procedures worldwide. The head of the information systems department explains:

“Why did we implement SAP? To make everybody work with the same procedures and to have a clear vision, at all times, of the financial situation of the group. As for the purchasing module, we managed to make everybody work with the same buyers. For every factory, for every service, purchases are now the same”.

These first comments are corroborated by the opinion of the head of the purchasing service:

“We cleverly used the procedures defined in while implementing SAP to organize the way people purchased. We realized purchasing was the second biggest expenditure of the group. So, if everybody watched his spending, we were sure to save money”.

With the SAP system, a global procedure, which everybody had to follow, was established. It is set out in Fig. 1, below.

We may note that these new procedure led to several modifications in terms of task organization. Indeed, all SAP users from every business unit, from every country, were forced to follow a series of procedures in a specific order, which seemed to correspond to the observed best practices within the group. If they refused to do so, SAP simply did not work. An SAP user, working in the accounting service, explains:

“As you can note, you can see fields you have to fill in on the computer screen. If you don’t, the transaction will fail: in this way, you are sure not to forget anything and you can follow the procedure properly”.

The compulsory procedures were more or less accepted by employees. As the SAP implementation project manager explains:

“So, the factories that used to function pretty well, i.e. those that used formalized working procedures,

encountered few problems. They just had to adapt to a new tool. Take the X Factory example: workers and managers only had to follow a training session on SAP and that's all. Its stock department already functioned under the same procedures as those that are established now. However, for other factories, where everybody was allowed to access the stock room and where hardly anything concerning stocks was on paper, employees encountered lots of problems: they had to change their working organization. . .”.

During our visits to the *Transmat*'s head-office, we noticed that the great majority of employees had to change their task organization. That is why 70% of the people interviewed thought that SAP formalised things considerably, not because managers or other people had devised formal procedures, but just because that was how the tool worked. Some comments personifying SAP illustrate this point: “(SAP), is Prussian. We sometimes seem to wear a spiked helmet!”

The great majority of users share this impression and are very aware of the constraints. Indeed, for ordering a service or materials, they have to enter all of the required information in the software. If they do not know something, they have to go looking for it. Consequently, some employees claim SAP created too much work.

A second source confirming this resistance to change claimed that SAP appeared to be useful for standard transaction processes, such as ordering software, supplies (. . .) but was too restricted when ordering complex services, such as freight. A SAP program trainer explains:

“The procedure established with SAP raises a huge problem when you have to take a decision in a hurry or if you do not have all the required information when processing an order. Indeed, let us take the specific case of shipping. Only two or three employees are concerned by this process within the whole group. The main rule with shipping transport is to work with a broker. The latter must be paid three days after the order, even if you do not exactly know all the trading conditions involved in the service. In this case, SAP do not allow us to work properly”!

These difficulties often led to procedure diversions. On the one hand, orders were often passed without

being recorded on SAP and were “regularised” later. On the other hand, even though the procedure was followed on the whole by all employees who had accepted the new tasks organization, a few managers still refused to change their habits. A trading assistant, whose boss refused the SAP implementation, says:

“At the present time, my boss doesn't even know his SAP log-in number. Everybody thinks he validates orders. In fact, he doesn't. I connect myself with his log-in number and I validate for him”.

On the other hand, even if a manager forgot, or refused to validate orders, the purchaser explained that if he had been waiting to purchase the product or service for ages, he had ended up accepting the request even though it was not appropriately or correctly formulated.

3. Initial comments on the impact of the procedure induced by SAP R3 implementation on the control of actors

The aforementioned description of the SAP R3 purchasing procedure reveals three specific results it tends to tighten control on actors. Paradoxically, the procedures of the tool can and must be transgressed if actors wish to achieve their goals properly. Finally, the tool gives more importance to specialists.

3.1. Control induced by SAP R3 and, indirectly, by the top management and the tool

We can observe that employees are subjected to a huge amount of control emanating from various different sources, their hierarchy, the tool in itself and the purchaser. Thanks to SAP parameters, and due to the fact that it does not work if procedures are not followed correctly, the tool in itself controls employees' actions and tasks. This is even more striking when one considers that all of the information entered into SAP, whether correct or false, is registered. Anyone with access to this information, managers as well as the purchaser, can control employees' mistakes in terms of procedure or ordering (overspending. . .). The information systems manager explains:

“Now, things are completely open. One can see all the blunders made: wrong accounting number, wrong manipulation. . . (. . .) And, anyway, if something goes

wrong, the managers or the buyers will go and have a look”.

3.2. SAP R3: a system that must be transgressed

Nevertheless, even though managers tend to be more controlled, transgression remains possible. For instance, a manager can delegate his validation's power to his/her assistant by refusing to enter and work with the software.

This transgression is all the more possible given that managers sometimes have to transgress the procedures induced by the implementation of the ERP system in order to make the software function properly and achieve their goals. Anti-dating the purchase when ordering freight is common practice in the business unit just to obtain the service! Contrary to the first, this second kind of transgression is accepted by the whole organization. Paradoxically, this transgression allows procedures and the use of the software to be changed. Consequently, the transgression gives added legitimacy to the software.

3.3. More power to the purchaser?

The analysis of the consequences of SAP R3 implementation, especially the purchasing module, illustrates that this tool tends to empower purchasers who now have the ability and the legitimacy to control top management decisions in terms of purchasing. The purchaser more specifically controls and validates the process, as one of them explains:

“I spend my life controlling and checking. For instance, I negotiated prices with specific suppliers. I still find people who manage to buy things from others! (...) In this case, I call those who issued the order, mainly managers. And, as I'm sure you know, managers hate being controlled. Thanks to procedures, SAP is THE tool that makes the process more efficient”.

4. Conclusion: who or what is responsible for the change?

The Pechiney example illustrates that an ERP implementation is not neutral for its users. In this case, SAP implementation tends to bring a multiplication of

the sources of control and to give more power to purchasers. Nevertheless, it also shows that all the procedures induced by the ERP can be, and sometimes, has to be transgressed to let people achieve their goals.

In our case, we have to agree the top management and the project team are responsible for the new procedures, the fact that any order requires the validation of the purchaser and the manager. All these procedures have been implemented to control expenditures. Nevertheless, we also assume the ERP software, and, at least SAP R3, can also be responsible for the multiplication of the sources of control, for instance, the fact people are obliged to use the procedure to order something. Consequently, we can raise the following hypothesis: control intensification seems to be due to a kind of collaboration between the tool and the top management to achieve a defined strategy.

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