Chapter 2 : Why do Companies Implement ERP Systems ?
The Goals and Reasons behind ERP Implementation Projects

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2.1 Motivation

After decades of implementing MRP I and MRP II and their "successors," ERP systems, the ERP market targeting large-scale enterprises became saturated. Thus, ERP vendors were forced to identify new customers. A new target group/new group of users for their systems' small and medium-sized enterprises (S&MEs) was identified. In the beginning of the year 2000 ERP systems still had low penetration rates among S&MEs because such systems were considered to be too complex and much too expensive (Deep, Guttridge, Dani & Burns 2008; Koh & Simpson 2005). Not only did the saturation of the traditional ERP market encourage ERP vendors to expand into the S&ME market, but also some technological developments at the end of the millennium, which enabled a high scalability for rapidly growing S&MEs. This eventually led to the dismantling of resistances and doubt against ERP systems from an S&ME perspective (Buonanno et al. 2005; Deep et al. 2008; Gable & Stewart 1999). Today, ERP systems are implemented throughout enterprises of every size and industry. For example, according to a study conducted in Germany in 2009, more than 92 percent of all German industrial enterprises use ERP systems (Konradin 2009).

Despite the comprehensive functionality of ERP systems and the obvious benefits these systems can provide for an enterprise, the reasons to implement an ERP system, as well as the goals to be achieved by adopting these systems, will presumably differ more strongly the more heterogeneous ERP adopters become. In order to identify these reasons and goals, with a focus on the differences between large-scaled enterprises and S&MEs, we conducted reviews among 36 research cases published in the academic literature, as well as reviews from 201 customer success stories (CSS) published on the homepages of eight ERP manufacturers. The results of these reviews will be presented in this chapter.

The chapter is structured as follows : having described the motivation for the research, our data collection methodology will next be presented and described. The third section will focus on the reasons and goals in detail to provide an understanding of these aspects before presenting our results. Within the fourth and fifth sections the results of the conducted reviews will be explained, and the most important reasons and goals will be pointed out. Additionally, a comparison between the

results stemming from the research case studies and those from the CSS will be given, and the differences between the reasons and goals of large-scale enterprises and S&MEs will be analyzed. Finally, the chapter concludes with a summary on the results, as well as a critical acclaim of the conducted reviews.

2.2 Data Collection Methodology

To derive and evaluate the different reasons and goals for ERP implementation projects, we selected secondary data analysis as the data collection method. We used a subset of case studies and case descriptions which are published in scientific and academic literature, as well as so-called customer success stories (CSS), which were published on the homepages of eight ERP vendors as a basis. **Figure 1** gives a short overview of our data collection methodology which is explained in the following.

Figure 1 - Data Collection Methodology - Overview
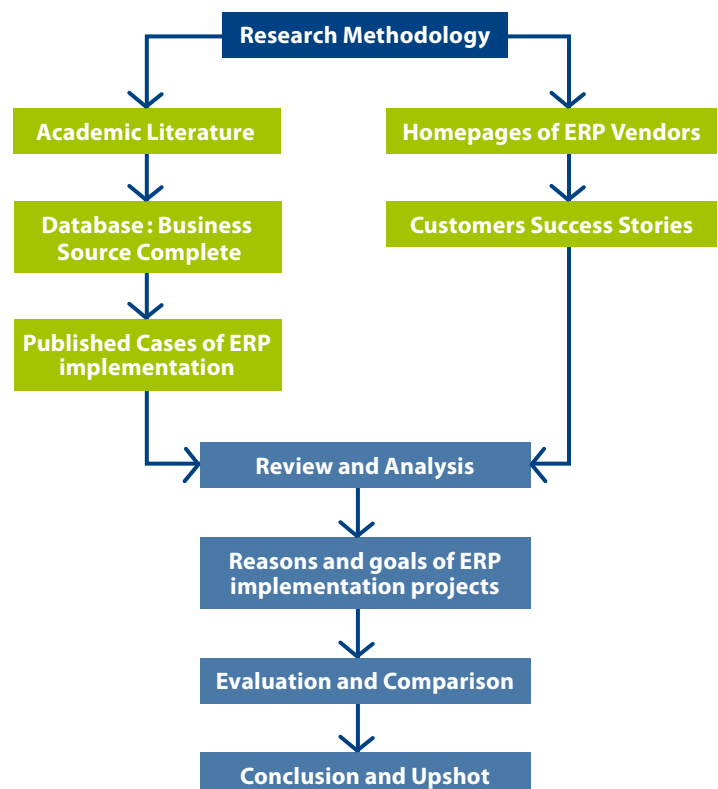
To identify several case studies in the academic literature, the database "Business Source Complete" was used. This database contains currently appearing and published international literature. With different combinations of the search terms "ERP," "Enterprise Resource Planning," "Goals," and "Reasons," several papers were found. To confirm the appropriateness of the discovered papers, their content was read in depth and they were evaluated according to the following three criteria:

- A case description should be provided. The description should not only focus on the technical implementation process itself, but should also describe the background of the enterprise and the issues which led to the initiation of the implementation project.
- The ERP implementations described should have resulted in success.
- Case studies that covered the implementation of an integrated ERP system rather than solely single modules were preferred.

Within some of the papers, surveys were conducted and/or the information about the companies was presented as a combined summarization, so we attempted to aggregate the information and handle these documents as one case. If this was not possible (e.g., due to less information, no reasonable aggregation of the companies), we did not include these papers as a data source. Within these restrictions, 18 selected papers remained (listed in the Appendix). Within these papers, 36 cases (six of them are aggregated information of different companies) were identified and analyzed in depth to identify the reasons and goals of the described ERP projects (cp. Appendix). The cases were evaluated regarding the company size, industry sector, and factors which led to the ERP implementation. From these cases we derived an initial framework of reasons and goals.

As the second main data source we used the CSS from several ERP vendors, since CSS also provide details about the enterprise environment, the background of an enterprise, about problems and challenges during the implementation of the ERP project, the corporate strategy, and the motivations/goals of the ERP project. The CSS are summarized and published by the ERP vendors themselves. Often they use experienced authors to write the stories to gain a certain consistent text structure for all published CSS. Therefore, almost every ERP vendor provides information about successful ERP implementation projects on their web page. For customers, this can be seen as a starting point to gain a first understanding of the advantages of ERP systems. For us, the CSS are a relevant source of information regarding the reasons and goals of ERP projects. We visited the homepages of eight ERP vendors to identify "qualified" CSS. To be "qualified" for our research we considered only CSS from companies which had (in analogy to the cases from the literature) implemented an integrated ERP system and not only single modules. Furthermore, the CSS had to clearly point out what the company was aiming at, or had to provide an appropriate description of its goals and reasons. If some cases could not be clearly verified or lacked clarity, we contacted the ERP vendor via email. Using this procedure, we collected 201 suitable CSS from eight different vendors.

The ERP projects analyzed were conducted within the years 1999 to 2009, are distributed over 30 different countries, and belong to five different industries. About 48% of the enterprises within the CSS are small and medium-sized companies. In the Appendix an overview of several vendors and some information about the identified customer success stories are provided.

2.3 Goals and Reasons of ERP Implementation Projects

Based on the review and analysis of the case studies in the academic literature, and of the CSS we identified several goals and reasons for the initiation of ERP projects. As it is sometimes difficult to distinguish between reason and goal, we will describe and explain the different aspects within this section.

2.3.1 GOALS OF ERP PROJECTS

We determined 20 different goals which are named and explained in the literature. **Table 1** gives a short overview of these goals.

Table 1 - Overview of ERP Project Goals

ID	GOAL
G1	Cost reduction in general
G2	Reduction of IT costs
G3	Supervision improvement for management
G4	Achieving price/cost leadership
G5	Improvement of customer services
G6	Increasing the ability to respond / react
G7	Improvement of product differentiation
G8	Customer loyalty strengthening
G9	Quality improvements
G10	Reduction of cycle times
G11	Standardization of the IT landscape
G12	Resource management improvement
G13	Information management improvement
G14	Decision support improvement
G15	Standardization throughout the whole affiliated corporate group
G16	Increasing employee productivity
G17	IT upgrade for facing future changes
G18	Increasing the satisfaction and skills of employees
G19	Supporting the company's growth
G20	Improvement of competitiveness

G1 – Cost reduction in general :

Cost reduction is one of the most cited goals for initiating an ERP implementation project. With the implementation of ERP systems, companies aim for process automation and the removal of redundant processes. For example, it can lead to a decrease in manual tasks to be performed in different departments ; therefore less staff is needed, and expenditure for wages and salaries can be reduced. ERP systems can also cause storage cost reductions, and lower administrative expenses. Examples for this goal : *Company C* (Motwani, Subramanian & Gopalakrishna 2005) and *DefenseCo* (Bradley 2008).

G2 – Reduction of IT costs :

Regarding IT infrastructure, the implementation can lead to a reduction of IT costs. An ERP system is an integrated system that can fulfil many tasks performed by legacy systems. Thus, these older systems can be replaced. This replacement reduces the costs associated with running the legacy systems, of providing and developing interfaces between systems, and improves the maintainability of the overall IT infrastructure, since only one system remains to be updated regularly.

Additionally, sometimes the IT architecture (especially the hardware) can be downsized/modernized and fewer IT staff might be needed to handle the remaining systems. Examples for this goal : This goal was not cited in the cases.

G3 – Supervision improvement for management :

The implementation of an ERP system can lead to improvements on the senior management level in various ways. An ERP system enables control and monitoring throughout all levels of the organization and throughout all departments. Therefore, senior management can get "real-time" information on all business aspects. For example, with the use of a financial module, controlling is possible regarding different combinations of products, regions, customers, and sections. Manufacturing modules can also be used for production supervision, forecasts, and for quick adjustments. In sum, effective and efficient management of the entire enterprise can effectively be supported by an ERP system. Example for this goal : *Water Corporation* (Mandal & Gunasekaran 2003).

G4 – Achieving price/cost leadership :

If the company operates in a low price market and aims at cost or price leadership in this market, ERP systems can support this strategy. Through cost reductions and rationalized processes, product prices can be decreased and therefore cost/price leadership can be achieved. Examples for this goal : This goal was not cited in the cases.

G5 – Improvement of customer services :

Through one consistent database comprising all relevant data, customer service representatives have easy and complete access to customer data within one system. Representatives can access all relevant data quickly without switching between several legacy systems. Therefore, they can coordinate with customer needs more efficiently and react or reply to customer requests more smoothly. An ERP system can lead to an improvement of customer services. Example for this goal : *Company A* (Motwani, Mirchandani, Madan & Gunasekaran 2002).

G6 – Increasing the ability to respond / react :

As mentioned within G5, the ERP system enables easy access to all of the company's data. Reaction times for customer requests and to changing market conditions or unexpected incidents can be improved and enhanced. Example for this goal : *Company B* (Motwani et al. 2002).

G7 – Improvement of product differentiation / G8 – Customer loyalty strengthening :

A well based strategy for product differentiation can be necessary to "survive" market challenges. Since an ERP system integrates all functions and departments of the enterprise, companies can offer customer specific products or solutions (e.g., different lot or product sizes up to an individually manufactured product), or they can offer specific and unique services available only to their customers/ available only to each customer individually, e.g., individual project services concerning specific customer requirements, as well as different service level benefits depending on his/her relationship to the company. These special offers will also strengthen a customer's loyalty. Example for G7 : *CompGroup* (Al-Mashari & Al-Mudimigh 2003). Example for G8 : *Threads* (Holland & Light 1999).

G9 – Quality improvements / G10 – Reduction of cycle times :

Quality improvements are enabled through the enhanced measurement of performance and monitoring which can be done using the ERP system. This is because the system provides all necessary information in "real-time." Therefore, a reduction of cycle times can also be achieved. It may affect three different activities : those for customers (handling of orders, invoicing, production, and customer support), employee activities

(reporting, salary statements, business learning, and deployment) and activities for and with suppliers (payments or collective orders with discount). ERP systems can support all of these and can thus enable a reduction of cycle times. Examples for G9 : *Manco* (Sarker & Lee 2003) and *Company X* (Akkermans & van Helden 2002). Examples for G10 : *Manco* (Sarker & Lee 2003) and *Company B* (Motwani et al. 2005).

G11 – Standardization of the IT landscape :

As mentioned in G2, an ERP system integrates many functions often performed by different legacy systems. Therefore, these systems can be replaced along with their hardware. In a best case scenario, only the ERP system hardware and the system itself remain. This can lead to standardization of the IT landscape. Examples for this goal : *Statco* (Holland & Light 1999) and *PAE* (Bradley 2008).

G12 – Resource management improvement / G13 – Information management improvement / G14 – Decision support improvement :

Important goals of ERP system implementation are improvements in resource management, information management, and decision support. With the help of an ERP system, the enterprise can increase its productivity, flexibility, and efficiency at the business process level in the field of resource management This enables better budgeting and stock management, improves the production output, and assists in employee management. One of the main tasks of information management is the timely provisioning of relevant data. Examples of this data may include customers, sales, and financial information. This again is supported by the central database of the ERP system. Additionally, optimized reports that improve analysis due to more precise and more reliable data can be generated through ERP system functionality. With this data at hand the decision making process is supported as well. Example for G12 : *Company A* (Motwani et al. 2002). Examples for G13 : *Water Corporation* (Mandal & Gunasekaran 2003) and *Elf Atochem* (Davenport 1998). Examples for G14 : *Company A* (Motwani et al. 2005) and *GlobalEnergy* (Bradley 2008).

G15 – Standardization throughout the whole affiliated corporate group :

By implementing an integrated ERP system throughout affiliated groups, communication between several companies is enhanced. Interfaces are no longer needed between each company's legacy systems. Media breaks (e.g., from electronic to paper-based formats and back) can be minimized as well. This also reduces mistakes caused by employees during these steps.

Hence, the standardization of the application landscape within not just one company, but throughout the whole group, can be an important goal of ERP system implementations. Examples for this goal : This goal was not cited in the cases.

G16 – Increasing employee productivity :

An ERP system can reduce cycle times and avoid data exchange errors. Processes are reengineered and can be performed much faster. Communication is improved both within the company and the group as a whole as the "real-time" monitoring is enabled. Therefore, if employees are well trained in using the ERP system and do not show resistance against it, an increase in their productivity is usually achieved. Example for this goal : *ClayProducts* (Bradley 2008).

G17 – IT upgrade for facing future changes :

As mentioned before, an ERP system implementation can lead to a standardization of the IT landscape. Often, hardware is modernized to be used with the new ERP system as well. Therefore, these new hardware and software systems are better prepared for future changes. Since continuous improvement of processes and systems is mandatory, the ERP system provides a standardized, optimized, state of the art technological platform suited for future changes. Examples for this goal : *Company D* (Motwani et al. 2005) and *Manco* (Sarker & Lee 2003).

G18 – Increasing the satisfaction and skills of employees :

The implementation of an ERP system always requires extensive training and education of employees. Thus, their technological skills are improved. As the employees' skill level is analyzed throughout the implementation process, the need for additional training can be determined. Usually, new software systems do not increase employee satisfaction in the beginning. Almost every implementation project is confronted with resistance and unwillingness to use the system, as it often causes extensive changes in processes and daily routines. An ERP system makes processes quicker and can support employees in their work (e.g., reduce entering redundant data in different systems, provide necessary data within one database…), so they become more satisfied after working with the new ERP system for quite a while. Examples for this goal : *Company A* and *Company B* (Motwani et al. 2005) and *Manco* (Sarker & Lee 2003).

G19 – Supporting the company's growth / G20 – Improvement of competitiveness :

Since ERP systems are highly scalable, they can support the company even if its growth is exploding. Therefore, it is vital to choose a system that fits the company very well and can easily be adapted.

Along with faster reaction time, improved customer services, or differentiated products, company competitiveness is also improved through an ERP system implementation. Examples for G19 : *CompGroup* (Al-Mashari & Al-Mudimigh 2003) and *Elf Atochem* (Davenport 1998). Examples for G20 : *DefenseCo* (Bradley 2008) and *Elf Atochem* (Davenport 1998).

2.3.2 REASONS FOR ERP PROJECTS

Parallel to the identification of ERP implementation goals, we identified the reasons for initiating such projects. We encountered difficulties when attempting to clearly distinguish between reasons and goals. Sometimes goals can be viewed as reasons and vice versa. For example, the reduction of IT costs can be described as a goal for an ERP project. It may be necessary for the company to cut IT costs, so this apparent "goal" of cost reduction could be identified as a *reason* for the ERP project, too. Thus, to avoid duplication, in this subsection we will only consider and describe those reasons that may not also be interpreted as goals. **Table 2** shows an overview of the reasons for ERP projects.

Table 2 - Overview of ERP Project Reasons

ID	REASON
R1	Solution to the Y2K-problem
R2	System upgrade to obtain new functions
R3	Adjustment to company's growth
R4	IT support for multiple currencies and languages
R5	Adjustment to changed business processes
R6	Adjustment to changed laws and regulations

R1 – Solution to the Y2K-problem :

The Y2K-problem is mentioned as one of the main reasons for the initiation of ERP implementation projects before the year 2000. Many software systems (including ERP systems) were only using a two digit number for referencing years. Therefore, "00" was the reference number for the year 2000. This had the potential to cause problems because most of the software systems could not handle this two digit number and thus, were not able to process the years after 2000. Replacing the old systems with new ERP systems made it possible to solve this problem. Examples for this reason : *Rolls Royce* (Yusuf, Gunasekaran & Abthorpe 2004) and *GlobalEnergy* (Bradley 2008).

R2 – System upgrade to obtain new functions :

Another reason for ERP projects is the necessity to upgrade systems to obtain new functions. Sometimes new functions are included in updates, but if these functions are too complex or if there are even more recent modules included in the new ERP version, upgrades are unavoidable. Often, companies need these new functions and modules to stay competitive in the market, or the old module version cannot fulfill changed business requirements any longer. In this situation an ERP system upgrade becomes mandatory. Examples for this reason : *MudCo* and *DefenseCo* (Bradley 2008) and *Water Corporation* (Mandal & Gunasekaran 2003).

R3 – Adjustment to company's growth :

Most enterprises, particularly small and medium-sized enter-prises, are confronted with fast expansion and growth or heavy changes within the business. As mentioned in the goal's section (G19), the aim of an ERP implementation can be to provide support for the company's anticipated growth ; however, expan-sion and growth cannot always be predicted.

For example, the enterprise can expand so fast that either the existing ERP system functions do not cover the new business requirements any longer, or the system is not scalable enough to handle this growth. Therefore, company growth and expan-sion can be seen as a reason for ERP projects, too. Examples for this reason : *GlobalEnergy* (Bradley 2008) and *FurnitureCo* (Xue, Liang, Boulton & Snyder 2005).

R4 – IT support for multiple currencies and languages :

Enterprises operating internationally are confronted with a multitude of details such as country-specific financial questions and tax requirements, as well as multi-language aspects of doing business. Not all ERP systems support this "multi-nation-ality" requirement and thus, the replacement of old systems can become necessary. Examples for this reason : This reason was not cited in the cases.

R5 – Adjustment to changed business processes :

Fundamental changes throughout the whole company are sometimes necessary to stay competitive. Companies have to adjust their products, reduce their production cycles, make their business processes faster, improve their customer services, and more. All these changes have to be implemented within the ERP system as well. Sometimes older ERP or legacy systems are not capable of handling these changes and cannot be adapted to meet new requirements. Thus, changes in business processes as well as in the business itself may require a new version of the existing ERP system, or even a completely new system to be implemented.

Examples for this reason : *Statco* (Holland & Light 1999) and *MudCo* and *PAE* (Bradley 2008).

R6 – Adjustment to changed laws and regulations :

Enterprises operating in specific industries must perform their production, production processes, and business procedures in conformity with certain laws or guidelines. Therefore, a suitable and appropriate ERP system that fulfills the specific industry requirements is mandatory for those enterprises. Again, changes of specific laws and regulations may lead to implementation of a new ERP system if the legacy system cannot handle the new requirements. Examples for this reason : This reason was not cited in the cases.

2.4 Results of the Case Study Review

As mentioned above, we identified 18 papers that include 36 case studies. The companies studied in these cases are 28 large-scale enterprises and eight S&MEs. These companies operate within the manufacturing sector (22 companies), process indus-try (10 companies), and the public sector (4 facilities).

2.4.1 GOAL EVALUATION

In examining the goals of ERP implementation projects, 15 of the 18 described goals were mentioned by the case study compan-ies **(Table 3)**.

Table 3 - ERP Project Goals within the case studies

GOAL	RANKING	FREQUENCY
G13 – Information management improvement	1	15
G12 – Resource management improvement	2	14
G1 – Cost reduction in general	3	10
G18 – Increasing the satisfaction and skills of employees	3	10
G3 – Supervision improvement for management	5	8
G10 – Reduction of cycle times	5	8
G17 – IT upgrade for facing future changes	5	8
G6 – Increasing the ability to respond / react	8	5
G20 –Improvement of competitiveness	8	5
G5 – Improvement of customer services	10	4
G9 – Quality improvements	10	4
G8 – Customer loyalty strengthening	12	3
G14 – Decision Support Improvement	12	3
G19 – Supporting the company's growth	12	3
G7 – Improvement of product differentiation	15	2
G11 – Standardization of the IT landscape	15	2
G16 – Increasing employees' productivity	17	1
G2 – Reduction of IT costs	18	0
G4 – Achieving price/cost leadership	18	0
G15 – Standardization throughout the whole affiliated corporate group	18	0

The results show that four goals were mentioned ten or more times. These goals are : Information management improvement (G13), Resource management improvement (G12), Cost reduction in general (G1), and Increasing the satisfaction and skills of employees (G18). A comparison between goals depending on company size is given in **Figure 2**.

It becomes obvious that goal ranking does not vary much, regardless of company size. However, at this point, we argue that a larger number of companies is necessary to identify differences. This will be shown within the evaluation of customer success story results in the next section.

Figure 2 - Goal Comparison based on Company Size within the Case Studies
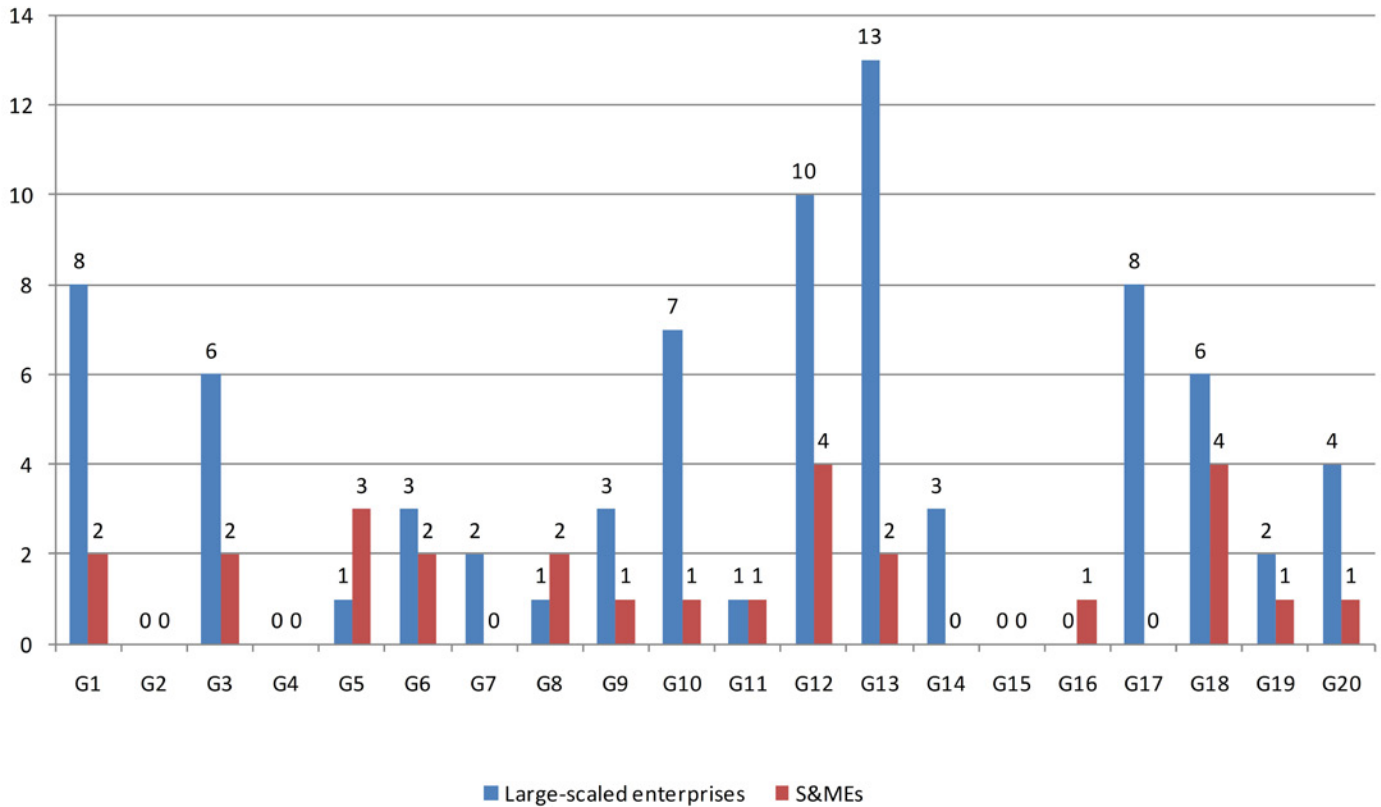
2.4.2 REASON EVALUATION

Regarding the six reasons for ERP implementation stated in the previous section, only four were named in the case studies. **Table 4** gives a first overview of the ERP project reasons, and the frequency with which they were mentioned.

**Table 4 -** ERP Project Reasons within the Case Studies

REASON	RANKING	FREQUENCY
R5 – Adjustment to changed business processes	1	19
R3 – Adjustment to company's growth	2	13
R2 – System upgrade to obtain new functions	3	12
R1 – Solution of the Y2K-problem	4	9
R4 – IT support for multiple currencies and languages	5	0
R6 – Adjustment to changed laws and regulations	5	0

As seen in this table, the top three reasons for ERP projects (each mentioned in more than ten cases) are : the adjustment to changed business processes (R5), adjustment to company growth (R3), and a necessary system upgrade to obtain new functions (R2).

A comparison of the reasons for large-scaled enterprises and smaller ones shows that the ranking of the reason does not differ much in comparison to overall ranking **(Figure 3)**.

Figure 3 - Reason Comparison of Large-Scale Companies and S&MEs within the Case Studies
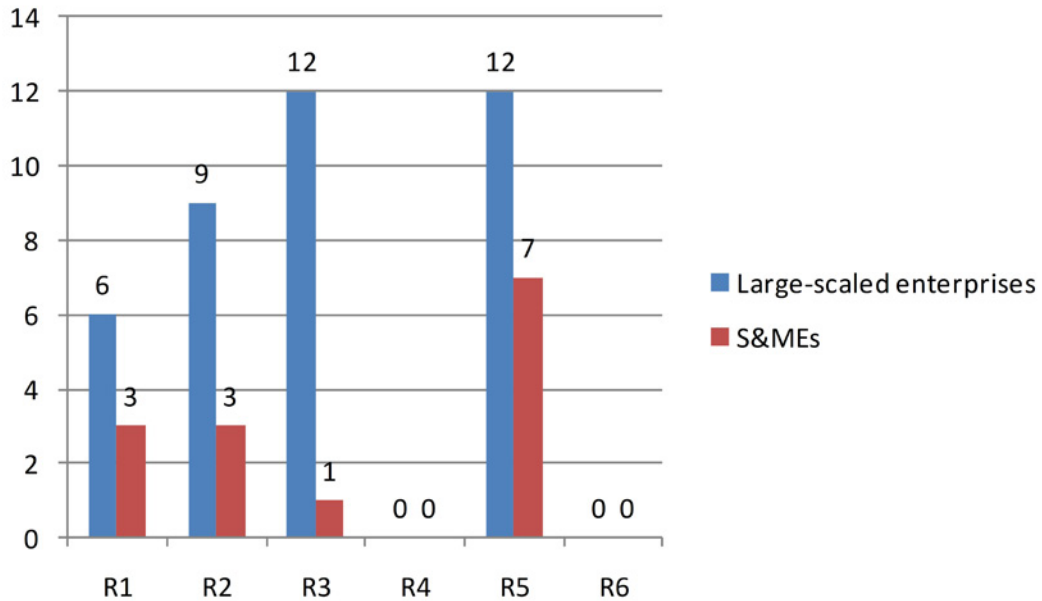
The only difference in reasons given for ERP implementation in relation to company size was R3 (adjustment to company's growth). This reason was only mentioned by one smaller company, and therefore scores at rank 4.

Since there are only eight S&MEs among the case study companies, this result will be explored in the evaluation section of the customer success stories.

2.5 Results of the Customer Success Story Review

Based on a review of the homepages of eight ERP manufacturers and vendors we identified 201 customer success stories (CSS). Within these 201 CSS are 107 large-scale enterprises and 94 S&MEs (cp. Appendix). Compared to the number of companies examined in the previously explained case studies, it can be concluded that a better differentiation of reasons and goals for ERP implementation is possible.

2.5.1 GOAL EVALUATION

Contrary to the goals mentioned in the case studies, all 18 goals were named by the CSS companies. Their rankings and frequencies are shown in **Table 5**.

Table 5 - ERP Project Goals within the CSS

GOAL	RANKING	FREQUENCY
G12 – Resource management improvement	1	108
G13 – Information management improvement	2	84
G3 – Supervision improvement for management	3	52
G10 – Reduction of cycle times	3	52
G16 – Increasing employees' productivity	5	37
G17 – IT upgrade for facing future changes	5	37
G1 – Cost reduction in general	7	31
G14 – Decision support improvement	8	30
G11 – Standardization of the IT landscape	9	29
G19 – Supporting the company's growth	10	25
G5 – Improvement of customer services	11	24
G6 – Increasing the ability to respond / react	12	16
G7 – Improvement of product differentiation	13	13
G9 – Quality improvements	13	13
G18 – Increasing the satisfaction and skills of employees	15	10
G15 – Standardization throughout the whole affiliated corporate group	16	9
G2 – Reduction of IT costs	17	8
G8 – Customer loyalty strengthening	17	8
G20 –Improvement of competitiveness	17	8
G4 – Achieving price/cost leadership	20	7

We see that two goals stand out as having been mentioned by 108 (G12) and 84 (G13) companies. Also, the ranking of these two goals is identical to the ranking within the case studies. The third rank is shared by two goals; supervision improvement (G3) and the reduction of cycle times (G10), which also ranked highly within the case studies, but not as high as number three. Regardless, it becomes obvious that goal rankings are similar.

Comparing results based on company size, goal distribution of the top three goals does not differ from the overall ranking **(Figure 4)**.

Figure 4 - Goal Comparison based on Company Size within the CSS
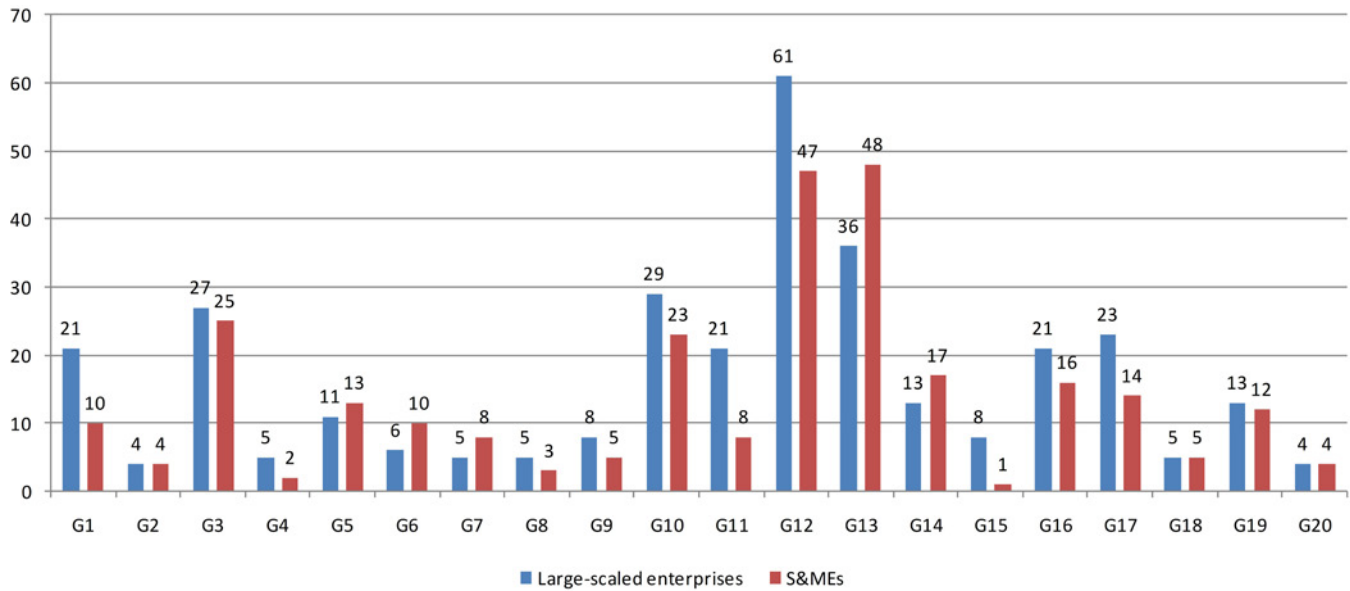
Again, G12, G13 and G3 occupy ranks one, two, and three within both large-scale companies and S&MEs.

We did not include a comparison between goals based on industry sectors, because there were no large differences among sectors in distribution of the first goals. Therefore, a detailed analysis would not make any further contribution to this study.

2.5.2 REASON EVALUATION

All six reasons were named within the 201 CSS. **Table 6** shows their frequency and rankings.

Table 6 - ERP Project reasons within the CSS

REASON	RANKING	FREQUENCY
R5 – Adjustment to changed business processes	1	101
R3 – Adjustment to company's growth	2	70
R2 – System upgrade to obtain new functions	3	31
R6 – Adjustment to changed laws and regulations	4	6
R4 – IT support for multiple currencies and languages	5	4
R1 – Solution of the Y2K-problem	6	1

R6, R4, and R1 are only mentioned by a few companies. These reasons do not seem to have great influence on the decisions involved in initiating an ERP implementation project. R1 in particular (the solution to the Y2K-problem) is only mentioned one time. Mostly, the CSS include ERP projects that took place after 2001. Also, it is shown that changes in business processes (R5) are a reason to initiate an ERP project for almost half of all companies.

Thus, it seems that older versions of ERP systems are not scalable or adaptable enough to handle large changes in business processes.

An analysis of the differences between reasons with regard to company size shows that the top three reasons do not differ. R5, R3 and R2 have the same ranking in large enterprises as in S&MEs **(Figure 5)**.

Figure 5 - Reason Comparison of Large-Scale Companies and S&MEs within the CSS
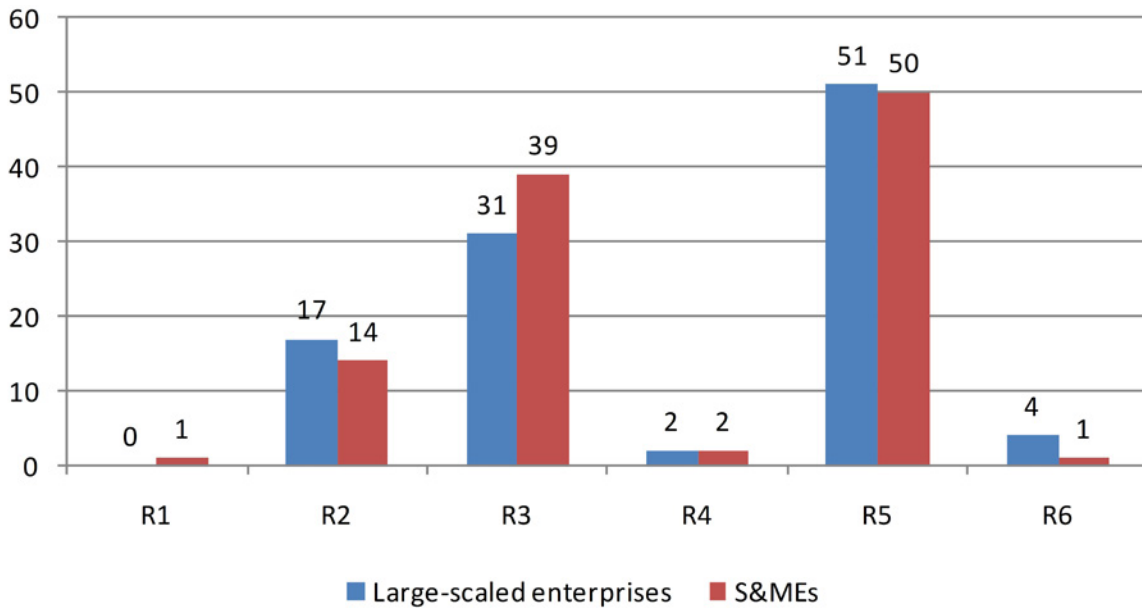
2.6 Conclusion and Future Research

The aim of our study was to gain insight into the reasons and goals for ERP implementation projects. Our study focused on case studies published in the academic literature, as well as on so-called customer success stories published on ERP manufacturer and vendor homepages. We identified 18 papers, including 36 case studies and 201 CSS – a total sum of 237 companies were analyzed. Within their case descriptions six different reasons and 20 different goals for ERP implementation projects were revealed. Comparing the case studies and the CSS, the most mentioned goals and reasons were very similar. There are no differences between the top three reasons, and only slight variations between the top five goals. Only slight differences can be seen by comparing reasons and goals regarding company size (large-scale enterprises and S&MEs) as shown in **Table 7.**

Table 7 - Goal Rankings - Case Studies vs. CSS

RANKING	CASE STUDY GOALS	CSS GOALS
1	G13 – Information management improvement	G12 – Resource management improvement
2	G12 – Resource management improvement	G13 – Information management improvement
3	G1 – Cost reduction in general	G3 – Supervision improvement for management
4	G18 – Increasing the satisfaction and skills of employees	G10 – Reduction of cycle times
5	G3 – Supervision improvement for management	G16 – Increasing employees' productivity

This similarity in reason/goal rankings also reveals the fact that CSS are a reliable source of information for studies concerning ERP implementations. They provide information regarding the same reasons and goals, and indicate nearly the same rankings.

For future research projects CSS should be regarded as a useful source of information. To further examine these findings, detailed comparisons between CSS and academic case studies could be conducted in future research projects, especially if they are not only focusing on ERP implementation reasons and goals. Although we could not identify fundamental differences in goals and reasons between large enterprises and S&MEs, we still suggest small and medium-sized enterprises as future research objects for identifying ERP-related areas that differ from larger companies. As mentioned in the motivation section, the ERP market for large companies is saturated, and ERP vendors shifted towards the market segment of S&MEs (Deep et al. 2008). However, there are still only a few academic studies addressing ERP implementations in S&MEs. As we expect remarkable differences between large-scale companies and S&MEs (Welsh & White 1981), researchers should also focus on the aspects of ERP implementations within smaller companies explicitly (Snider, da Silveira & Balakrishnan 2009; Winkelmann & Leyh 2010).

There are limitations which must be mentioned regarding this study. We are aware that we cannot be sure to have identified all existing reasons and goals for ERP implementation projects. The reasons and goals mentioned and analyzed in this chapter were derived from the reviewed case studies and CSS. Therefore, by including more studies, or even more CSS (from other ERP vendors), other relevant aspects may be identified. The coding of reasons and goals was another limitation of this study. We tried to reduce this subjectivity by formulating coding rules, and by discussing the coding of the reasons and goals among two independent researchers. However, other researchers may code these aspects in a slightly different way. Additionally, some of the academic papers and CSS have a big difference in the timeframe of data represented. The academic papers date back to the late 90s, while the CSS are current. This could explain some of the differences. Including current cases and papers also has the possibility to change the outcome of this study.

Appendix

Table 8 - Case Overview

PAPER – SOURCE OF DATA	CASE SUMMARY
Akkermans & van Helden (2002)	1 medium-sized company within the manufacturing industry
Al-Mashari & Al-Mudimigh (2003)	1 multi-national large-scale enterprise within the manufacturing industry
Beheshti (2006)	3 cases within the public sector --> 2 governmental departments, 1 university
Bradley (2008)	8 cases --> 4 large-scale enterprises within the manufacturing industry, 2 large-scale enterprises within the process industry, 2 S&MEs within the manufacturing industry
Davenport (1998)	1 large-scale enterprise within the process industry
Holland & Light (1999)	2 cases --> 1 large-scale enterprise within the manufacturing industry, 1 large-scale enterprise within the process industry
Koh & Simpson (2005)	1 aggregated case ---> Summarization of different S&MEs within the manufacturing industry
Kumar, Maheshwari & Kumar (2002)	1 aggregated case --> A survey among different Canadian organizations ; industry sector not specified in detail
Loh & Koh (2004)	1 aggregated case --> 8 S&MEs of the UK within the manufacturing industry
Mabert, Soni & Venkataramanan (2003)	1 aggregated case --> Different smaller companies from the USA within the manufacturing industry
Mabert, Soni & Venkataramanan (2001)	1 aggregated case --> Different S&MEs from the USA within the manufacturing industry
Mandal & Gunasekaran (2003)	1 large-scale organization within the public sector
Motwani, Mirchandani, Madan & Gunasekaran (2002)	2 cases -->1 large-scale enterprise within the manufacturing industry, 1 large-scale enterprise within the process industry
Motwani, Subramanian & Gopalakrishna (2005)	4 cases --> 2 large-scale enterprises within the manufacturing industry, 2 large-scale enterprises within the process industry
Olhager & Selldin (2003)	1 aggregated case --> Different Swedish S&MEs within the manufacturing industry
Sarker & Lee (2003)	1 large-scale enterprise within the manufacturing industry
Xue, Liang, Boulton & Snyder (2005)	5 cases --> 2 large-scale enterprises within the manufacturing industry, 3 large-scale enterprises within the process industry
Yusuf, Gunasekaran & Abthorpe (2004)	1 large-scale enterprise within the manufacturing industry
TOTAL	**36 cases --> 30 single cases, 6 aggregated cases**

Table 9 - CSS Overview

ERP VENDOR	NUMBER OF CSS	CSS SUMMARY
SAP	44	39 large-scale companies, 5 S&MEs, 5 industry sectors, 12 countries
Infor	22	5 large-scale companies, 17 S&MEs, 3 industry sectors, 2 countries
Microsoft Dynamics	41	24 large-scale companies, 17 S&MEs, 5 industry sectors, 8 countries
The Sage Group	12	3 large-scale companies, 9 S&MEs, 3 industry sectors, 1 countries
Oracle Applications	23	9 large-scale companies, 14 S&MEs, 3 industry sectors, 9 countries
Exact Software	21	7 large-scale companies, 14 S&MEs, 3 industry sectors, 13 countries
IFS	29	16 large-scale companies, 13 S&MEs, 2 industry sectors, 11 countries
Lawson	9	4 large-scale companies, 5 S&MEs, 3 industry sectors, 4 countries
TOTAL	**201**	**107 large-scale companies, 94 S&MEs, 5 industry sectors, 30 countries**

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Questions

1. What are the differences between R3 (Adjustment to company's growth) and G19 (Supporting the company's growth) ?

2. What is the most important reason for ERP projects identified in case studies ?

3. What are the top three reasons for ERP projects identified in CSS ?

4. What are the differences between the goal rankings identified in the case studies and the CSS ?