

Effects of IS Standardization on Business Process Performance: A case in HR IS Company Standardization

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Abstract

In this study a research model is designed that describes the effects of IS company standards on business performance. This model is based on a pilot case study and on the small amount of literature available on company standards. Subsequently, the descriptive model is used in an in-depth case study at a large financial services corporation. This study is part of a series of case studies that will be used to validate the model. The case study describes the implementation, usage and effects of a HR IS standard. The goal is to provide a HR information infrastructure to support HR processes on a global, Business Unit and local level. The effects of these standards on HR business process performance are identified. To conclude, implications for future research are presented.

1. Introduction

In today's competitive world, companies are increasingly confronted with cost cutting issues, whilst at the same time the market demands an increasing flexibility towards the customer. This is certainly the case for financial service companies because they are faced with constantly rising costs in both IS development and delivery. These costs are incurred due to the necessary adaptations in IS as changes in the business environment take place, such as globalization and customer attitude. Consequently, organizations have to provide customized products and services in a timely and cost-efficient fashion. One of the ways to break the trend of constantly rising IS costs is to introduce standardization of the IS infrastructure. Standardization simplifies interoperability and re-usability but may impact the agility and responsiveness to adapt IS services to business changes. There is an intuitive tension between standardization and flexibility [6].

In this paper we investigate the effects on business performance of IS standards that facilitate business

processes. It is part of a larger program, in which a number of case studies [18] will be carried out, in order to better understand these complex dynamics and augment a basic research model. Five anticipated improvements in business performance are listed, resulting from IS usage in general [15]: 1) improved quality, 2) reduced costs, 3) increased flexibility, 4) improved customer satisfaction, and, 5) overall improvements in operations. In this study we will investigate how these benefits hold for the usage of IS standards as well. The justification for carrying out this research on the effects of IS standardization stems from the fact that this phenomenon has hardly been investigated in academic literature and that results in practice are not well understood. Typically, in standardization there are significant uncertainties on the factual costs and benefits as well as adequate planning and control strategies [17]. Others even argue that although the organizational adoption of information technologies is at the center of MIS's domain, the role of standards in IS production and use is generally ignored [19]. Moreover, the economic value or impact of standards has been rarely measured. Some examples include the assessment from a macro economic perspective or the business perspective of SMEs participating in formal standardization [1, 13]. This brings us to the research question: *What are the effects of using standardized IS processes and products on business process performance?*

2. Company Standardization

Since the eighties, economists have paid a lot of attention to standardization, but their focus has mainly been limited to the consequences of product standards for market share [4, 16]. Still one of the classic problems facing company standardization is that of demonstrating its contribution to the company's total success [7]. In general, company standards have the form of [4]: 1) a reference to one or more external standards officially adopted by the company; 2) a company modification of an

external standard; 3) a subset of an external standard; 4) a standard reproduced from (part of) other external documents; or 5) a self-written standard.

IS standards provide long-term benefits to the enterprise as a whole, however business units may not observe a direct benefit from using the standards in the short term. It is shown that IS infrastructure standards can facilitate simultaneously localized exploitation and enterprise-wide integration that seems at first sight contradictory [9]. In other words, this means that standards are able to facilitate flexibility. The topic of company standardization is also addressed regarding corporate IS architectures [12]. In a four staged model, standardization of technology components (stage 2) and standardization of data and business processes (stage 3) are discussed. Benefits identified relate to total cost of ownership and flexibility.

With respect to the governance of IS standards within a company, three methods have been identified by which a company can bring about internal standardization [3]: regulatory style, laissez faire, or a combination of both aspects. Through a regulatory style standards are made mandatory and this style is more suited to a mature business (i.e. large and bureaucratic). Cargill argues that for matters that are regulatory in nature or deal with safety regulations, this style is to be preferred. For industries where stringent quality is key this method also suits well. A disadvantage of this style, when it is carried out rigorously, is that it may cause any standard to become an end in itself forgetting why the standard was imposed in the first place. The second style allows the developer or user to ignore the standard, effectively making the whole standards program useless. Cargill explains that the third style is probably the most difficult to exercise since every potential standard requires evaluation for its return and impact on the company and customers. He also stresses the active participation of management in this governance process and also comments on the selection of IS standards within a company *"A standards group should begin by determining what its own purpose will be. While this necessity is so obvious as to be axiomatic, it is neglected by many internal standards groups"*.

An example of IS standard governance describes IS software development projects within an enterprise [11]. The company started the standardization of software development with a strict division-wide approach, but evolved into a loose one that hindered productivity. Therefore special measures were taken that ranged from monitoring and advising staff to ensure compliance with the standards, to awareness training and continual standards refinement and development. The enhanced standard governance and selection initiative resulted in: 1) proactive involvement and alignment of business and IS management; 2) formalized control by a newly created technical review team on the projects and associated

standards; 3) significantly more projects completed on time, on target and within budget.

In another case, the importance of the alignment between Business and IT in company standard governance was also recognized [10]. This concerned a company-wide rationalization of a Lotus Notes infrastructure. This was called 'continuous re-appropriation' in order to size opportunities and improvise in response to changes on the fly.

3. Theoretical Framework

Since only a very limited amount of scientific literature exists on IS standards selection and governance processes within organizations, a pilot case study has been carried out in order to gain insight into these processes. The objective is to explore this aspect in practice and complement the scarce literature with new empirical observations. The pilot case study was carried out at group/corporate level of a large financial services company.

Experts in this field have been interviewed on how standard selection and governance is carried out. In addition, several types of material have been analyzed, such as official documentation on policies and standards, newsletters, presentations and leaflets. The product standardization policy and the corporate approval process regarding IS standards were reviewed. In particular, standard selection and governance for an initiative to provide the means for corporate IS architecture has been explored. This initiative was started to improve the application's global integration capabilities and reduce the costs and time-to-market of the development process. It involved establishing a process and dedicated organization in order to develop and implement systems 'under Architecture'.

The key observations were that the Strategic Business Units (SBUs) massively discard initiatives at corporate level since these are not mandatory. An example of such a failure was a standard global desktop initiative. The main reason for laying aside corporate standards was that cross-SBU synergies have no direct profitable effect to the local business' initiatives. Secondly, for corporate standards no implementation specifics are provided to projects that use these standards within the business units. Nor is there a central authority that enforces the usage of these standards.

Data from this pilot case provided considerable insight into the basic issues of the topic, especially from the selection and governance perspective. Conclusions from this pilot case regarding standard selection are: 1) The key relationship with business drivers and general business involvement; 2) Business-IT alignment (B-IT) is essential; 3) standards are the guidelines for architecture; 4)

standards have to meet business requirements. With regards to standards governance it was learned that the following variables are essential to its success: (1) commitment of management; 2) formalization by means of implementation processes; 3) enforcement by the organization.

3.1. Research Model

Unfortunately, in literature there are few examples on the selection and governance of IS standards within a company. Contributions on product and process standards [9, 11] were discussed in the previous section. Other lines of research focus on network effects of EDI/XML standards or the socio-economic effects of standards [17, 5].

From the literature and pilot case study it became clear that there are predominantly two major impetuses that determine the effects when IS standards are applied within a company. These are the internal IS standard selection process and the IS standard governance within the company. Finally, business process performance is highly dependent on the firms' business activities and objectives. The concept of business performance can be assessed from various scopes and a mixture of vantage points. As discussed in [14] many traditional measurement and evaluation methods (like Return on Investment, Net Present Value, Economical Value Added and Return on Capital Employed) only include tangible financial benefits and have failed to provide appropriate measurements on performance. We will follow the Balanced Score Card [8] (BSC) framework, since, in addition to the financial perspective, non-financial measures are covered by the customer, internal/business process and learning & growth perspectives.

Next to the literature study, the pilot case study showed us that the success factors for IS standard selection are the relationship with the business drivers and requirements. Furthermore, B-IT alignment is essential. The pilot case also showed that regarding standard governance, three variables were essential in the effective usage of standards: 1) senior management commitment 2) facilitation of and adherence to implementation processes and 3) enforcement of the product and process standards by the organization.

From these lessons and the problem stated in the introduction, this study integrates these constructs into a research model. The model does not purport to reflect causality between the constructs although the arrows indicate the relationships found in the literature and pilot case study. The following four constructs are of importance:

I) *IS standard governance*: defines the procedures, techniques and organizational embedding of standard

selection and standard application including verification of prescribed measures.

II) *IS standard selection process*: defines the way the company standard is established;

III) *IS standard application*: defines the company standard and the way it is being implemented and used.

IV) *Business process performance*: defines the direct consequences of the company standard application, such as efficiency and effectiveness (e.g. quality and flexibility).

The research model portrays a holistic view on factors that influence business process performance as a result of the company standards. Via the selection process, standards are implemented and used in business processes. These business processes demonstrate a certain performance. Key to the business process performance is the way these standards are governed in both the selection and application phase. This should make influencing business performance by means of IS standards possible.

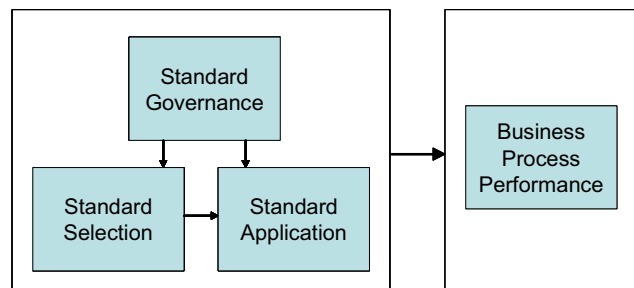


Figure 1. Research Model

Both constructs and relationships are depicted in the general research model of Figure 1. We will use this model in an in-depth case study, as part of a number of case studies [18], with the aim of validating the Research Model and obtaining a better understanding in company standards governance and of other factors that influence business process performance. The basic unit of study is the Business Unit where the standard is applied.

4. Field Study

4.1. Study Design

To gain experience with the research model, an in depth case study has been executed. The case study was carried out at a large financial services company with offices in over 50 countries globally. The IS product standardization in this study relates to HR modules of PeopleSoft including its accompanying HR processes. Semi-structured interviews were held with project management and project staff of the implementation

project. All interviews were taped and transcribed unless participants objected to the recording, which was the case in just one instance. All interviewees, six in total, reviewed the draft version of this document. In order to increase the construct validity [20] other sources of evidence have been used including project documentation, news letters, executive reports and the intranet site of this project. Financial, organizational and technical objectives and results have been evaluated. Effects on efficiency, effectiveness and flexibility have been investigated.

4.2. HR IS Product Standard

In November 1997, HR Managers from all (S)BUs of this financial services company decided to launch a project called ‘Common Human Resources Information System Program’ (CHRISP) consisting of an integrated HR management system and a global HR data warehouse. The goals of the global HR information infrastructure, as communicated were: 1) cost savings through empowerment of employees (self service) and therefore reduction of HR headcount and reduced HR IS costs; 2) provision of quality services that enable the enterprise to improve its HR function; 3) comply globally with requirements of data privacy and protection regulations, rules of accounting and the related HR corporate policies.

The main driver was the lack of consistency of HR information available in existing HR information systems and the impossibility of proper analysis and reporting. The HR administration was based on dispersed spreadsheet-like tools and often no historic data was available. Frequently, questions from the head office could not be answered adequately or addressed in the optimum timeframe due to the information needing to be processed manually. Table 1 lists the difference between current and intended future states as per 1998.

Table 1. Current and future states of HR service delivery at project commencement

Current HR state	Planned HR state
Disparate HR departments and services	Single HR organization, process and tool
Several points of contacts per service	One point of contact for all services
System focused	HR-user and staff focused
One password per HR application	Single sign on for all HR applications
Requested information difficult to obtain	Easy information access
Branding differs per website	All web-sites have the same look and feel
Training required for each new service	Only a Minimal amount of training necessary

The root cause of the problematic HR service delivery is largely related to the decentralized organizational structure. The case company consists of three strategic business units that had the authority to openly reject central dictates. In our discussion on standards governance we will elaborate on this topic.

4.2.1. Governance. The CHRISP initiative originated from Corporate HR and was transferred to Group Shared Services (GSS) in January 2005. The SBU formation of 2000 impacted the project heavily. As the SBUs were increasingly forced to settle their own Profit & Loss, arguments to implement PeopleSoft (and to change HR-processes) became more difficult. Synergies were endangered since participating countries & (S)BUs reduced implementation scope or even stopped entirely.

Because CHRISP is, since early 2005, part of the HR-Transformation Program (HRTP) within GSS HR, the implementation of PeopleSoft is now accelerating. There is much more management commitment for standardization. Previously, there was a great deal of resistance, mainly because of the large changes that go along with the implementation of PeopleSoft, and because it was perceived as a dictate from head office.

The implementation of PeopleSoft has accelerated because of: 1) the implementation of HR shared service centers 2) it was integrated with an organizational change program (HRTP). Ad 1) The inclusion of the HR shared service centre concept requires a global HR information system infrastructure. Countries can no longer refrain from migrating to PeopleSoft since the only HR services are based on PeopleSoft HR whilst support will be delivered from these centers only. Ad 2) The difference between CHRISP and HRTP is twofold: a) system versus process focus¹ b) recommended versus mandatory nature.

The CHRISP blueprint defined the HR IS standard (PeopleSoft/Business Objects with menus, data elements, etc) which delineated how HR processes could fit in. HRTP, on the other hand, started with standardized HR processes (holiday allowance, promotion, etc) and only then aligned PeopleSoft/Business Objects with these processes. Before HRTP, the approach was to implement the basic functionality (PeopleSoft Admin workforce) in a country followed by a gap analysis. Timelines for implementation of other modules were in practice set at the discretion of the country. When, from the gap analyses, it turned out that some functionality was not available in the existing service offerings, the project tried to identify requirements from other countries to arrive at a new global process. An example of this is the global

¹ The process focus is preferable since this forces stakeholders to unequivocal follow the standardized process flow that is subsequently implemented in the information system. The other way round showed that this not necessarily results into standardized HR-processes.

recruitment process and tooling that originated from a request from the US branch. This same concept is institutionalized in HRTP with the exception that in HRTP one starts with the HR-process and not with the PeopleSoft system. A so-called process stream in HRTP is exclusively dedicated to HR-processes that delineate the required functionality. Then CHRISP is advised whether this functionality can be implemented in PeopleSoft. Not surprisingly, when CHRISP was included in HRTP it became the IS part of this transformation project.

CHRISP used to be run as a corporate project that did not have the mandate to demand changes in the (S)BUs. HRTP is a continuation and extension of CHRISP that is mandated directly from the managing board. Before its move to GSS, the project could not demand from the SBUs and countries to harmonize their HR activities (processes and data definitions, etc). This resulted in a 50-60% match compared to all HR processes in scope.

No deviations are allowed from refraining using PeopleSoft. Nowadays, requirements can be severe and harmonization of processes and data will become as much as 80%. This includes general staff data, a recruitment system, performance management of staff, the payroll interface and career development. All HR departments world-wide will have to comply to these standards when there are no country-specific fiscal or legal objections. As an example of this, the learning & growth modules will now be implemented unconditionally which could not have been accomplished by CHRISP alone.

There is now considerable commitment for CHRISP at various levels:

- sponsorship of the Management Board;
- HR directors and HR professionals across all (S)BU's;
- Increasing business demands for strategic HR input.

In spite of this commitment, neither the product nor its implementation process has been incorporated in the set of corporate standards. The first because the corporate standardization organization was not involved in the standard selection process of the HR IS standard whereas the latter is not surprising because no implementation standards are part of the standardization methodology of this enterprise.

At corporate level there has been an initiative to standardize all kinds of HR data semantics (like FTE, retirement age, hours in working week) but which failed because of political aspects. Basically, it is a governance issue on the HR data elements where roles, responsibilities and accountabilities are not properly assigned and positioned.

In conclusion, the standardization of HR processes is now progressing with full endorsement at the highest management levels and strict enforcement.

4.2.2. Selection. In 1998, the project selected the PeopleSoft Human Resources Management System ERP package and Business Objects as the reporting tool. The required functionality offered by PeopleSoft was the main reason for its selection. Other contributing factors were purchase and license discounts and its Best-in-Class rating by e.g. HRMS industry analysts & Fortune Top 100 listings.

4.2.3. Application. During the case study it was determined how the implementation of PeopleSoft has been carried out, whether it was possible to deviate or customize the chosen standard and how this reflected in the standards usage.

Implementation started in April 1999 as a conference room pilot of 10 days in which HR representatives from all over the world participated in workshops to determine process scope and functionality. Initially, there were no standard HR processes, reports, data definitions, etc. A basic set was defined and a successful pilot implementation in three countries proofed the concept. In September 1999 the business case was approved by the Management Committee. On the basis of that implementation scenario a standard implementation toolkit, consisting of the PeopleSoft Basic HR Administration (back office HR processes, forms, and templates) was created and rolled out in other counties.

At a high level, almost all HR processes were to be standardized. The recruitment process, for example, is basically the same for all countries. As a consequence, identical processes and Graphical User Interface can be used. But small differences may remain at a detailed level. An example of this is graduate recruitment, since school systems differ per country. The data structures regarding HR data in the data warehouse are also standardized as far as feasible. One of the interviewees explained that these standards are based on corporate or country-specific standards. However, 100% standardization cannot be achieved because of country-specific and legal requirements. Therefore there are basically two parts within CHRISP: a global part and a country-specific part.

The implementation is as much plain vanilla PeopleSoft as possible to minimize support costs and increase adaptability and portability unless local requirements dictate otherwise. Regarding the different languages used throughout the enterprise there was the tradeoff between user acceptance and costs of implementation and support. This holds for both the user interface and data storage. The overall aim of the language strategy was to provide a system that can support both local and global needs. For each specific country, therefore, implementation of both the English and local language were incorporated.

PeopleSoft was implemented in phases. Initially, the Basic HR Administration was implemented like Starters,

Leavers, Suspension and Termination. Later on, other processes/functionalities were added such as e-recruitment, employee self services, staff performance modules and helpdesk. Each new development of new functionality constituted its own project. HR policies were translated into best practice core processes that were presented to BU representatives for validation and approval. These additions were carried out at the BUs request and were designed by the project in close conjunction with corporate HR. The functional scope, therefore, differs per country since implementation of the full PeopleSoft HR-suite was not strictly mandatory. In the Netherlands for example, only the Back Office functionality was implemented.

At this moment (May 2005) 60% of staff is captured and the data warehouse (DWH) contains almost 100% of all staff. This DWH is used to support the local HR processes and to provide global strategic HR metrics. Three types of common Business Objects reports are provided: 1) operational reports that assist countries in performing an efficient HR service (e.g., recent joiners and future leavers); 2) management information reports that allow tactical and strategic analysis of the organization (e.g. quarterly headcount per month or gender); 3) exception reports that allow countries to focus on quality assurance (e.g. report of all employees without a local ID).

4.2.4 Performance. In this section the four perspectives of the BSC framework will be analyzed.

Financial perspective - CHRISP is in essence a 'soft' project and this HR IS is a prerequisite set of tools to turn HR into a decisive organization. This requires a standard way of data storage, data representation (syntax and semantics) and HR processes. Therefore, the costs in this respect are of secondary importance.

Although project costs, investments, depreciations and ongoing maintenance calculations have been made, it was hard to determine the financial benefits for the business case. The reason was because most countries could not provide the required figures of existing HR costs. By itself this was a very strong argument to introduce a global HR information system. However, an indication of financial benefits was given by using the HR ratio (i.e. the number of HR staff per number of total staff). The original figures differ per region from 1:50 to 1: 150 and the general aim is to move this ratio up to 1 to 200. This results in significant reductions of HR staff (up to one third of the total HR community).

Also regarding CHRISP/DWH, the interviewed team leader indicated that cost savings were very difficult to quantify as the perceived benefits are typically 'soft'. For example, since all staff data is stored in the DWH one can now easily query whether men and women in equivalent roles are rewarded in the same way (the answer was

"yes"). Moreover, it turned out that the career opportunities of women seem to be even better as the average age and amount of time working for the bank of women in senior management positions is lower than those of men. Without the DWH, in order to gather these data, over a hundred questionnaires would have to be sent, completed and analyzed. Obviously, this costs lots more in terms of time and money. There are a lot of other benefits (like checks on number of software licenses related to staff housed per building; starters and leavers data to update user access entries of information systems; staff turnover per department/country/business unit) that result from the data warehouse because the data is readily available.

For countries that already have an adequate local HR information system, the benefits are not that great. Nevertheless, introduction is still advantageous at corporate level since this allows transparency and enhanced interoperability and flexibility.

Customer perspective - In general, staff is satisfied and the PeopleSoft GUIs are perceived as user-friendly. For end-user satisfaction the key success factor is that the system allows easy changes (e.g. in home address and marital status). A few anomalies had to be taken into consideration. One of the interviewees mentioned an example of a number of HR staff in France who had used personal computer systems before and therefore switching to PeopleSoft proved to be a major change.

Customers of the data warehouse are very pleased since they can make use of a service that was not there before. Information is presented using Business Objects and reports that are user-customizable. Certain requests cannot be met since some information is not available. Examples of this are comparisons of cashier's offices and bond trades between countries since no global function description and reward system exists yet.

Internal/business process perspective - Benefits like no paperwork for address changes and other administrative tasks result in changed daily work and less required HR staff. The core of the daily activities of HR staff is to shift from operational to tactical tasks. Furthermore, a significant HR staff reduction is carried out, with this HR IS as an essential prerequisite.

With regards to productivity and quality, it is clear that the quality of the data has improved significantly. Several data elements can be used to demonstrate this. For example, headcount/FTE differed at first 15% from numbers of the annual report and this figure is now less than 3%. Other examples include sex (at first too few women reported) and date of birth (at first many at 1 Jan. 1900). So with the existence of standardized data elements and structure it is now possible to instantly report on these figure with high quality. Before introduction of the DWH it took an enormous effort to produce this management information. This effect of the introduction of the IS Standard greatly improves strategic decision-making.

The quality of the PeopleSoft implementation as a whole also improved. One of the interviewees had elaborated that “during the course of the project the total number of support staff doubled, the number of supported end-users increased by more than a factor of two, whereas the number of incidents concerning the PeopleSoft application per support staff remained the same.”

Learning & Growth perspective - Considering this final perspective HR staff satisfaction and IS availability have been evaluated. HR staff satisfaction differs per country since each country had its own implementation. Differences were observed regarding: 1) HR staff participation, 2) implemented functionality, 3) added value of new system compared to legacy HR system.

The responses of HR staff from the countries are varying, partly depending on the way PeopleSoft has been implemented. If hardly any HR IS systems were available, improved satisfaction could be easily improved. For countries that already had a local HR IS infrastructure, HR staff feelings are mixed. In small counties, for example browsing through 28 PeopleSoft pages for new hires seems to be a big overhead. Another striking example was found in the Netherlands, where feedback was not positive since only the back-office part of PeopleSoft was realized. This could happen since the full scope of the HR ERP suite did not have a mandatory nature and thus one cannot speak of a standardized way of implementing the suite. As a consequence, a lot of manual work, which in the PeopleSoft self service philosophy is performed by the employee, has to be done twice because no automated link exists between front and back-office applications. Obviously, this has yet to be fixed by introduction of the Front Office tools. In the North America branch, the PeopleSoft suite has been implemented full swing (Front and Back Office) and responses are very positive indeed. For all other countries, reactions are in between these two extremes.

Another important factor is the level of HR staff participation during the project. Satisfaction is high when participation is large and vice versa. Satisfaction also depends on the amount of functionality that had been requested and which % was actually implemented. At the individual level, there is negative sentiment since HR staff perceives PeopleSoft as the reason they lost part of their autonomy and in addition the standard software possibly affects their employability as well. Of course this latter effect is typical for any BPR/ERP implementation.

Regarding IS availability, this is considered to be sufficient and corresponding to the importance of this system. The system has a fully redundant high available system architecture. No differences were reported between hardware or software failures which were low anyhow. Although there is no quantitative data available from the old environment the new system is considered as a

significant improvement compared to the disparate legacy HR-systems.

5. Interpretation, Discussion and Conclusions

5.1. Interpretation of the Case Results

5.1.1. Governance and Selection. The stakeholders (senior HR business representatives, project management and corporate HR) in the governance of the IS standards played a crucial role in the selection process. Even though the stakeholders did agree on the HR IS standard, roles, responsibilities and accountabilities were not assigned effectively. Therefore it was not possible to standardize or even define all relevant HR data elements. As a consequence, the standardization process was limited to a relatively small set of data elements. For example, the agreed standard data structures of the DWH (as part of the IS Standard) are based on the few corporate and country-specific standardized semantics that were accomplished. A same line of reasoning holds for the HR processes in the initial phase of the project. Some HR processes were excluded since no enterprise-wide agreement could be reached. This was especially the case for HR processes linked to PeopleSoft Front Office functionality. Moreover, the end-user role in governing the standards was only quite marginal which influenced the perceived usefulness of the system. Enhanced commitment at various levels and changes in responsibilities and organizational structure addressed this situation.

5.1.2. Governance and Application. The selected HR IS standard has been implemented and is being used throughout the enterprise globally. In most locations, the local HR business was heavily involved during the implementation and was authorized to make key decisions. For example, new functionality within the standard was added at their request which positively influenced its usage. It was also observed that the project team could override customization requests, positively affecting the manageability of the system.

However, in the implementation phase it turned out that the HR business in some business units did not fully support the standard. Several evasive maneuvers to prevent full implementation have been observed. The full HR IS functionality was not of mandatory nature (so there was no standardized way of implementation) which negatively influenced its usage. Since the local HR business had a decisive say in the implementation timeframes, this allowed for slippage or even cancellation of parts of the implementation.

During the course of the standard implementation and usage, business process performance was not improving at the pace as initially anticipated. Because implementation

time took too long (the project running for 6 years in a row) and scope remained too narrow (only 60% of the community used the HR IS standard and with a maximum of 50-60 % standardization of the HR processes in scope) the governance and organizational embedding was changed early in 2005. As a result, positive effects on the application of the IS standard are already visible:

- The standard and its scope is now fully mandatory allowing no deviations;
- There is senior management commitment and endorsement on implementation and use, resulting in a strong mandate of the project;
- The implementation changed from a system focus into a process focus;
- A HR shared services concept was introduced that changed roles and responsibilities of supporting the system.

5.1.3. Process Performance. The four perspectives on business process performance show a number of influences as a result of the usage of this HR IS standard: 1) *Financial*: structural costs savings are being achieved due to reductions in HR staff, in which this HR IS standard is an important precondition; soft financial benefits like prompt and high quality management reporting making costly manual processing obsolete; 2) *Customer*: by and large, the HR IS standard is satisfactory, with as a key success factor, ease of usage. Regarding the DWH, the customers are very satisfied since up to now functionality, enabled by standardization, was not available; 3) *Internal*: quality of HR related data improved significantly; correct, complete and timely management information reporting; 4) *Innovation/Leaning & Growth*: The responses of HR staff varied, depending on the way of implementation; at times negative sentiment of HR staff due to perceived lost of autonomy and potential negative impact on employability; a more stable and integrated IS environment.

5.2. Discussion and Conclusion

The four constructs of the research model, based on the literature study and pilot case study, were clearly present and several variables have been identified to possibly control business process performance.

Three variables related to IS standard *governance* identified in the pilot case study (section 3.1): senior management commitment; facilitation of and adherence to implementation processes; enforcement of the selected product and process standards were all found as key success factors in this case study as well. The standard adherence is mandated from the managing board. Furthermore, the decentralized organizational structure of the case organization, which is closely related to the IS standards governance, has been identified as a key

variable which influences the business process performance. Moreover, the politics around the IS Standards implementation and usage played an important role and these have been mitigated by means of strict mandates from top management and a change in organizational structure.

The IS standard has been *selected* based on functionality, costs and market dominance. The main drivers to introduce the HR IS standard were cost savings and the lack of quality HR services.

A default *implementation* has been chosen as much as possible to minimize support costs and increase adaptability and portability. Apart from the phased approach to alleviate the considerable changes required for successful implementation, the HR IS implementation has been piggybacked on an even larger organizational change program to take advantage of that momentum. Another interesting observation was that the implementation sequence a) technology, process vs. b) process, technology impacts the end-result. In other words, to first agree on processes, then on the supporting technology. Furthermore, the fact that only a single module of an ERP Suite has been implemented confirms the findings in [2]. They showed that by and large financial service companies are hesitant about extending their ERP systems outside some functional areas.

Finally, other influences, next to the application of the HR IS standard, might account for the observed changes in process performance as well. Contributing factors could be organizational change, active involvement of senior management and the fact that there is change anyway. As part of our research model, these are almost all related to the introduction of the HR IS standard and its accompanying standardized HR processes.

To conclude, there is a cross-reference with the five anticipated improvement areas resulting from IS usage in general [15], in Table 2 the results for IS standard usage in particular are listed.

Table 2. Improvements resulting from the standardized IS environment.

Area	Result
Improved quality	Positive: consistent and timely management reporting; improved HR data
Reduced costs	Positive: Reduction in HR staff; decommissioning of legacy HR systems
Increased flexibility	Positive: global changes can be effectuated easily
Improved customer satisfaction	Positive: In general, end users are satisfied. Negative: Local HR business feels that they lost a significant part of their autonomy and quite a few staff is in danger of losing jobs.

Overall improvements in operations	Positive: easier maintainable technical environment and thus more stable; created global information infrastructure that satisfies local and fiscal requirements.
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Apart from observed negative effects in customer satisfaction, other drawbacks related to introduction of global HR information system are: 1) At country level and specifically for countries that already had proper HR processes and tooling, the advantages of a global HR information system are only marginal; 2) It requires a tremendous amount of time and effort to align all stakeholders and come to a standardized environment. Resistance to change and even counterproductive behavior is experienced.

5.3. Generalization and Future Research

Generalization of this research is limited to IS product standards that are utilized in large bureaucratic organizations like those in the financial services sector. Whether the findings are likely to hold in ‘young’ organizations or companies with different organizational set-ups e.g., start-ups, centralized companies or SMEs, rather than in global and decentralized / divisionalized companies should be subject to further study. For other standards and organizations a different approach may be required. Other suggestions for future research are to carry out more case studies preferably at other companies and/or other industries, and perform a cross case analyses to improve generalization. This provides the opportunity to formulate specific propositions and to explore other potential relationships. To further zoom into similarities and differences between product and process standards is another direction that will add value to this research topic. A best practice model on this interesting subject of company standardization, that is definitely paid too little attention to, could be the end result of this study.

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