5-2009

What drives business process standardization? A case study approach

Bjoern Muenstermann
Otto-Friedrich-University of Bamberg, muenstermann@is-bamberg.de

Andreas Eckhardt
Goethe-University of Frankfurt, eckhardt@is-frankfurt.de

Follow this and additional works at: http://aisel.aisnet.org/confirm2009

Recommended Citation
http://aisel.aisnet.org/confirm2009/38

This material is brought to you by the International Conference on Information Resources Management (CONF-IRM) at AIS Electronic Library (AISeL). It has been accepted for inclusion in CONF-IRM 2009 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.
38. WHAT DRIVES BUSINESS PROCESS STANDARDIZATION? A CASE STUDY APPROACH

Bjoern Muenstermann
Otto-Friedrich-University of Bamberg
muenstermann@is-bamberg.de

Andreas Eckhardt
Goethe-University of Frankfurt of Frankfurt am Main
eckhardt@is-frankfurt.de

Abstract
Business process standardization is of growing importance for both researchers and practitioners alike. Corporate experts and process owners meanwhile consider business process standards to be a prime action item and major instrument in a firm’s BPM toolkit. An increasing number of scientific publications also show a growing interest of the scientific community. But to date IS research on business process standardization most notably is focused on the impact of business process standardization on business process performance abstracting away from a concise analysis of their antecedents. Therefore in this paper – based on an exploratory case study from healthcare industry – we provide a research model presenting three major antecedents of business process standardization: Top management support, involvement of the HR-, business- and IT departments and organizational governance/topology. As this approach is conceptual in nature future research should empirically evaluate our framework.

Keywords
Business process standardization, antecedents, drivers, case study, health care industry.

1. Introduction
Business process management (BPM), as "a structured approach to understand, analyze, support and continuously improve fundamental processes" (Al-Mudimigh, 2007), has played an important role in the evolution of organizations over the last years. The importance of this field of research for both, researchers and practitioners alike, not only shows in the existence of dedicated journals like the "Business Process Management Journal" (Business Process Management Journal, 1995) but also in vivid online discussion forums like "Business Process Trends" (Business Process Trends, 2001) where "business managers, IT managers, vendors and practitioners come for news and information focused on trends, directions and best practices in business process change". As more and more organizations shift from a solely functional view towards an increasingly business process oriented view BPM stands the chance to become even more important in the future (Skrinjar et al., 2008).
One important instrument within an organization’s BPM toolkit is business process standardization. All around the world companies are spending large amounts of money on
business process standardization activities, as an exemplary Computer Weekly headline shows: "BP Retail expects to save up to £600m over the next few years by standardizing business processes [...] and IT systems at all of its petrol stations around the world" (Hadfield, 2007).

Unfortunately to date IS literature stringently analyzing business process standardization is scarce (Muenstermann et al., 2009, Stetten et al., 2008). Ungan (2006) pointed out that "despite its great attractiveness, academics' and practitioners' work on process standardization is conspicuously absent".

Not until Venkatesh identified "process standardization" as one of three "broad future research directions" (Venkatesh, 2006) an increasing number of authors fortunately dedicated their attention to the topic of business process standardization, e.g., Sánchez-Rodríguez et al. (2006), Wuellenweber and Weitzel (2007) or Boh et al. (2008). As shown in the right hand side of Figure 1 below the common ground of their work most notably was a strong focus on the impact of business process standards on business process performance abstracting away from a concise and complete analysis of their antecedents.

Unfortunately to date – as far as we are aware – there is not only no comprehensive research model around business process standardization available but also the antecedents of business process standardization are not explicitly presented. As a consequence this paper aims at answering the following research question:

**What are the antecedents of business process standardization?**

Hence, as shown in the left hand side of Figure 1 below, this paper focuses at assembling antecedents of business process standardization that subsequently allow for a more concise analysis of the impact of business process standardization on business process performance.

In order to answer our research question rigorously we structured our paper as follows: First, we provide a clarification of the terminology used within the case study by providing a short literature review in section 2. Then, we present an exploratory case study to derive antecedents of business process standardization in section 3. In section 4 we develop the research model.
around business process standardization from the case study linking it directly to the relevant literature. Finally, we conclude the paper by interpreting the results and discussing potential limitations and possibilities for further research in section 5.

2. Literature review
This section aims at providing the terminology necessary to approach the case study in section 3. Therefore the following subsections firstly present business processes (subsection 2.1), to then illuminate standards and standardization (subsection 2.2) and finally combining business processes and standards/ standardization to business process standards/ standardization (subsection 2.3).

2.1 Business process
As the term "business process" exists for quite some time the literature provides a lot of definitions for it. One of the most common definitions is given by Davenport and Short (1990), who define a "business process", as a "set of logically related tasks performed to achieve a defined business outcome". According to Hammer and Champy (1993) business processes consist of transformations of inputs to outputs – therefore they define a business process as "a collection of activities that takes one or more inputs and creates an output that is of value to the customer." Similar definitions are provided by Davenport (1993), Johansson et al. (1993) and Rummler and Brache (1995).

Business processes are the core element of the "process oriented view" of the firm that over the last years has been adopted by more and more companies (Goldkuhl and Lind, 2008, Lee et al., 2004). Among others Skrinjar et al. (2008) investigate the impact of adopting a process oriented view find a positive impact on an organization's financial- and non-financial performance.

2.2 Standard and standardization
The probably most common definition of the term "standard" has been given by ISO/IEC: "Standards are documents, established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context" (ISO, 1996). Standardization then is defined as the activity of diffusing and adopting a standard. For more details on standard/standardization compare e.g., de Vries (2006b) who provides an impressively detailed definition and classification scheme of (IS)-standards.

Lyytinen and King (2006) emphasize the importance of standardization in the field of IS and request more research on "the economics of ICT standards." In reply to this request an increasing number of authors started to analyze the economics of standards, among them Hesser et al. (2006) with their book on "Standardization in companies and markets".

2.3 Business process standards/ standardization
Combining the definitions of "business process" and "standard/standardization" and trying to find a concise definition of "business process standard/ standardization" in the literature is to a

---

1 Since the intention of this literature review is to provide a terminological basis for section 0 it is legitimate to keep it quite short. A more detailed theoretical consideration linking the case study to the relevant literature will follow in section 0.
considerable degree more difficult than it was to define the terms "business process" and "standard" since suitable research results are very rare. Ungan (2006) for example points out that "despite its great attractiveness, academics' and practitioners' work on process standardization is conspicuously absent". Von Stetten et al. discover that "there is not much relevant literature to be found. Although some ideas can be borrowed from the rich business process improvement literature from the nineties, only a limited number of papers exist treating 'business process standardization' solely" (Stetten et al., 2008). For example, Sundarraj presents a case study in which a Web-based decision support system enables the standardization of the process of managing and supporting service contracts (Sundarraj, 2004) and Hall and Johnson analyze when it is worthwhile to standardize a given business process or when they should be "treated like artistic work rather than rigidly controlled" (Hall and Johnson, 2009).

Muenstermann and Weitzel (2008) provide a first proposal of how to define a measurement construct of "process standardization". They differentiate "business process homogenization", what they define to be the alignment of process variants towards a given or self-created process archetype, from "business process standardization", what in their terminology depicts the "homogenization against an archetype process" that beforehand has been enhanced to a standard process, e.g., by incorporating external best practice knowledge. According to Sánchez-Rodríguez et al. (2006) business process standards "represent the best, easiest and safest way to do an activity". Wuellenweber et al. (2008) define "the objective of [process] standardization" as "to make process activities transparent and achieve uniformity of process activities across the value chain and across firm boundaries."

For this paper we adopt the commonalities of these descriptions and definitions of business process standards, i.e. aligned process variants that incorporate external best practice knowledge, e.g., by adopting (parts of) an external reference process (Kindler and Nuettgens, 2005), and are verifiably considered to be the time-, cost- and quality-optimal way of achieving the business process' goal².

3. Case study
In this section we provide an exploratory case study to derive antecedents of business process standardization. According to Yin (2002), a case study is an effective strategy for exploring 'how' or 'why' questions. It allows direct observations of a phenomenon in its natural setting, thus promoting a profound, realistic understanding (Babbie, 1983). While other methods would have compiled broad conceptual overviews or isolated quantitative facts, field research produced rich explanations and illustrative examples that generated great insight (Babbie, 1983). Finally, following Eisenhardt (1989) a case study is a legitimate tool to derive new insights in an exploratory approach.

3.1 Case study methodology and data collection
For the case study research we defined in the planning phase our research design and its components following the guidelines of Eisenhardt (1989).

² We choose the dimensions time, cost and quality here since these dimensions are frequently employed by other researchers to measure the performance of business processes.
In the first stage we prepared our data collection and created interview guidelines based on underlying theoretical models. We checked and pre-tested the guidelines to ensure consistency and reliability. The interview guidelines included several open format questions to allow the participants flexibility in their responses. The main data collection method was face-to-face, structured and semi-structured interviews with managers. However, when necessary, telephone interviews with other executives were conducted to supplement the information gathered during the personal interviews.

The data collection phase was divided in two different stages: We collected the data evidence with semi-structured interviews to discover the context variables in July 2007 and structured interviews to develop the model elements in December 2007. Whenever possible we added further documents provided by the company to extend our outcomes.

The interviews were tape recorded, transcribed in written form and screened by all participants of our research team. Finally the transcribed case study report was checked by our interview partners.

3.2 Case study details
As a descriptive example for a business process standardization project we observed a pharmaceutical company who standardized their worldwide staff recruitment in 140 countries by harmonizing all recruiting process variants with the recruiting reference process of the Swiss headquarters. Therefore above all we interviewed the person in charge of the process-owning Human Resources Information Systems (HRIS) shared services department. This division located at the interface of HR and IT originally initiated and started the whole process standardization project.

As the findings of this exploratory case study form the basis of our conceptual research model on antecedents driving business process standardization in the following subsections we also show the transcribed comments and answers of the interviewees. The case study results will be presented as follows: First, after a short description of the company's background in subsection 3.3, we explain the major challenges in staff recruitment the company was facing in subsection 3.4. Then, in subsection 3.5, we describe the business process standardization project as such. Within the subsequent three subsections (3.6-3.8) we present the three antecedents of business process standardization that emerge from the case study. Finally, in subsection 3.9, we summarize the case and present the improvements achieved within the recruiting process standardization project.

3.3 Company background
The company observed in our case operates in the pharmaceutical field and is located in Switzerland. Today they are solely focused on healthcare after having completed the divestment of non-core nutrition businesses over the past few years. With innovative pharmaceuticals at the core, they are also a global market leader in consumer health products, generics and vaccines. The corporate healthcare research institute leads an international initiative to study dengue fever, tuberculosis and malaria. More than 100.000 employees in 140 countries worldwide produced rising profits over the last years. 50% of the company's overall staff is employed in Europe, 22% in the US, 19% in Africa, Asia and Australia as well as 9% in Canada and Latin America. The
company is well known for its excellent employee treatment and ranked as one of the "World's Most Admired Companies" in Fortune magazine's annual survey.

3.4 Challenges in staff recruitment
The increasing margins in profit and revenues led to a continuous growth of the company's size. As a result of this development the demand for new employees increased rapidly. Especially highly qualified professionals for research and development in pharmacy and biotechnology were sought after globally. Threatened by a worldwide shortage of skilled workers predominately due to the global demographical situation (Acharya and Mahanty, 2008, Frank et al., 2004, Thompson, 2007) the company in a clear need of very specific work profiles decided to launch a complete restructuring initiative of their worldwide corporate staff recruitment including the observed recruiting process standardization project.

*Interviewee:* "...we are in pestering need of pharmaceutical researchers and specialists not only in our headquarters in Switzerland but also in all our foreign business units. From a management perspective the shortage of skilled workers is the biggest threat for our whole company..."

Table 1 below contrasts the differences between the situations in corporate staff recruitment at the beginning of and after the process standardization project.

<table>
<thead>
<tr>
<th>Past corporate staff recruitment</th>
<th>Future corporate staff recruitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employer Branding: No specific image campaigns</td>
<td>Employer Branding: Unique global image campaigns for all countries</td>
</tr>
<tr>
<td>Candidate Attraction: Non target-oriented job posting in various on- and offline media</td>
<td>Candidate Attraction: Global agreement with one online job board; accessible candidate database for all business units worldwide</td>
</tr>
<tr>
<td>Applicant Tracking: Mainly individual solution and execution in all business units</td>
<td>Applicant Tracking: Integrated IT-architecture with predefined data and communication flow</td>
</tr>
<tr>
<td>Pre-Selection: System less hands-on method</td>
<td>Pre-Selection: Integrated e-assessment for all business units and candidate profiles</td>
</tr>
<tr>
<td>Selection: Individual handling, mainly interview</td>
<td>Selection: Face-to-face or videoconference interview with headquarters for every hired manager or executive</td>
</tr>
<tr>
<td>Hire: No special treatment for new employees</td>
<td>Hire: Special on-boarding programs in all countries</td>
</tr>
</tbody>
</table>

*Table 1:* Differences between staff recruiting at the beginning of and after the process standardization project

3.5 The process standardization project
To achieve the objectives of receiving more highly qualified applications, a decrease in time- and cost-per-hire as well as a global measurable reference process for a better reporting the pharmaceutical company started to standardize their corporate recruiting processes for all individual business units in 140 countries. This initiative was started in July 2007 under the

---

3 Adapted from Fuerber et al. (2003).
leadership of the global Human Resources Information Systems (HRIS) shared services department. The recruiting process in Switzerland was taken as reference process (Kuester et al., 2006) for the standardization. It included all five sub-processes of staff recruitment: employer branding, candidate attraction, applicant tracking, pre-selection and selection (Faerber et al., 2003). In candidate attraction the company set uniform attraction channels to post vacancies. In order to find the appropriate candidates the company cooperates worldwide with an international operating job board to publish open positions and start employer image campaigns. The corporate websites in all countries obtained a direct access to the job board without hindering interface. Internal talent pools were formed into one global candidate database containing more than three million CVs. For the applicant tracking process within the company standard communication procedures between HR and the operating departments were established. In the pre-selection phase several individually designed e-assessment centers were implemented in all recruiting processes to provide applicant data including soft facts such as leadership capabilities or the ability to work in teams. The use of algorithm-based recommender systems helped to find suitable candidates out of the mass of applicants. Final selection mechanisms for all recruiting processes are face-to-face interviews with headquarter recruiters or videoconferences for candidates abroad.

Interviewee: "...our staff recruitment process in Switzerland was used as standard process for all other processes around the world. In a primary step we harmonized all recruiting process variants with our Swiss standard process... we expect better information for an easier reporting as well as a decrease of time- and cost per-hire and an increase of applicant's quality."

3.6 The role of top management support
As particular important for the whole standardization initiative emerged the continuous top management support starting from project rollout till closing. The project was originally started by the top management. A group of HR and IT executives planned and initialized the idea of standardization for all corporate recruiting processes. Under the guidance of the specialized shared services department for Human Resources Information Systems (HRIS) the entire standardization project was carried out. This project group directly reported to the global staffing council (a committee of all continental chief information and chief staffing officers). This ensured a strong commitment and top management support for the entire execution of the process standardization project.

Interviewee: "Top management planned and started this project... The global staffing council bolstered and helped us from the beginning to the end of the recruiting process standardization so we were able to work without disruptions and distracting interferences. If we hadn't had this top management support the whole standardization project wouldn't have worked out so well..."

3.7 The role of the involvement of the HR-, business- and IT-departments
Interestingly the standardization initiative very early on touched upon the cross-section function of HR and IT department as both departments were comparably affected by the process
standardization. HR and IT executives together planned and operationally started the recruiting process standardization. Persons in charge of further operating departments were already involved in the planning phase and remained as part of the project group for the whole execution. The early involvement of all departments guaranteed a smooth and seamless standardization of activities and applications especially in complex sections and for complex interfaces. Furthermore the related executives in all departments helped to foster necessary changes and to overcome hindering obstacles.

Interviewee: "It was a group project... All affected departments joined the project group and helped to conduct the recruiting process standardization ..." We took a major advantage of our prior collaboration in the HRIS shared services department; we knew who we work with and how they work... The early inclusion of our operating departments supported the process transformation and the overcoming of resistances against the recruiting process standardization."

3.8 The role of the organizational governance/topology
The centralized organizational topology represented a focal point for the standardization procedure. The foreign business units could very easily be integrated into the project as they acted with a low degree of autonomy and self-determination. In a first step the central recruiting process in the Swiss headquarters was chosen as reference process and in a second step harmonized with all recruiting processes in the individual foreign business units. Thereby the already centralized corporate topology facilitated the diffusion of the Swiss recruiting process.

Interviewee: "Our central shared services department in the headquarters in Switzerland was the driving force and pushed the initiative into all decentralized business units... Our corporate topology was an advantage and facilitator for the whole standardization action... Cultural characteristics and country-specific particularities were negligible after all..."

3.9 Case summary
Since the global process harmonization and standardization was brought on its way, the total number of highly qualified applicants and recommended candidates increased immediately. Primary evaluations revealed a significant decrease of time- and cost-per-hire. The findings also indicated that process standardization not only influences monetary and temporary determinants but also the overall process quality.

Table 2 summarizes the improvements resulting from the standardization of the recruiting process within the case study.

<table>
<thead>
<tr>
<th>Area</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced time</td>
<td>Positive: Reduced time-to-hire, approximately 20 days for each candidate applying; extra time for all recruiters to intensify both boarding and candidate relationship management.</td>
</tr>
<tr>
<td>Reduced costs</td>
<td>Positive: Lowering overall costs-per-hire by more than 25%, more space for investments in employer image campaigns and retention measures.</td>
</tr>
</tbody>
</table>
Improved quality | Positive: Immediate increase of highly qualified applicants, improved matching efficiency between vacant job profiles and candidates.
---|---
Increased flexibility | Positive: Global changes can be effectuated easily, innovations can be adopted in shorter time.

**Table 2:** Improvements resulting from business process standardization

Coming back to the overall research question of antecedents of business process standardization it could be summarized that important drivers of process standardization derived from this case study are a continuous and unrestricted top management support, an early involvement of all departments affected and a centralized corporate topology.

The following Table 3 shows the generalized antecedents of business process standardization found in the case study.

<table>
<thead>
<tr>
<th>Antecedents of business process standardization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management support</td>
</tr>
<tr>
<td>Involvement of the HR-, business- and IT-department</td>
</tr>
<tr>
<td>Organizational governance/topology</td>
</tr>
</tbody>
</table>

**Table 3:** Antecedents of business process standardization derived from case study

4. Development of research model from the case study

The goal of this section is to build upon the findings of the case study (section 3) and to derive a research model around business process standardization containing the antecedents as shown in Table 3 above. Therefore we check the compatibility of our antecedents with the existing knowledge of prior research approaches.

4.1 Antecedents of business process standardization

4.1.1 Top management support

Following Ifinedo (2008) "top management support refers to the extent to which top managers in an organization provide direction, authority and resources" when an organization is facing significant changes in the way it operates. In subsection 3.6 of the case study the interviewee attests that without unrestricted top management support the process standardization project would never have been successful.

In IS literature quite a lot of authors investigated the role of top management support on a handful of different activities and facets. Unfortunately, within the context of process standardization, only very little directly applicable such research exists. Therefore we have to adopt and adapt findings from adjacent research areas to the field of process standardization.

At the beginning of a process standardization project, when it is about to define the process archetype against which the existing process variants should be standardized the better and more mature the archetype process is the more successful the process standardization project can be. According to Muensterrmann and Weitzel (2008) there are two distinct options to improve and enhance existing process variants: First, process knowledge existent within an organization can be synthesized by homogenizing given process variants, i.e. either selecting an existing process variant as archetype process or creating a new archetype process by combining parts of existing process variants and subsequently aligning all process variants with the archetype process.
Second, process knowledge which is not existent and available within an organization such as external best practice knowledge (e.g., in the form of a reference process (Malone et al., 1999)) can be incorporated into the archetype process before aligning the process variants with the archetype process.

Drawing on this distinction of a) synthesizing internal process knowledge and b) integrating external process knowledge to make a process standardization project successful Liang et al. (2007) address the so called "top management's boundary spanning role" which is presented in more detail in Mitchell's work (Mitchell, 2006): She conceptualizes a top management "integrative capability" that allows top management – and only top management – both to synthesize internal knowledge and thereby spanning the boundaries between for example different functional departments within an organization and to integrate external knowledge and thereby spanning the boundaries between different organizations.

Hence, combining the lines of reasoning of Muenstermann and Weitzel on the one hand and Liang et al. and Mitchell on the other hand only with an intense support of an organization's top management it is possible to a) successfully alleviate the activity of synthesizing the internal process knowledge and b) actually get hold of the external best practice knowledge/reference processes that is important to make a process standardization project as successful as possible.

In a case study executed with a large financial services company that had offices in over 50 countries Wessel et al. (2006) analyzed a standardization project on the implementation of HR modules of PeopleSoft including the accompanying HR processes. They found that a lack of top management support negatively influenced the success of the standardization project. Hence, their analysis confirms top management support as antecedent of business process standardization.

In the context of ERP system success several authors specify top management support as a key success factor to guarantee the success of an ERP system introduction within an organization (Bingi et al., 1999, Davenport, 1998, Ifinedo, 2008, Karimi et al., 2007, Liang et al., 2007). Especially within the adoption phase of an ERP system unrestricted top management support plays an important role. In his article on the impact of top management support on ERP success Ifinedo (2008) further cites Bingi et al. (1999) who found that "the success of a major project like an ERP implementation completely hinges on the strong, sustained commitment of top management. This commitment when percolated down through the organizational levels results in an overall organizational commitment." Thus, top management support can create commitment and a fundamental willingness to successfully realize the implementation of large projects such as ERP introduction. Since both ERP implementation and business process standardization projects to a significant and similar degree change the way in which an organization used to function it is legitimate to also expect similar hurdles that have to be coped with in these two settings. Hence, building on these arguments and transferring them to our field of research of business process standardization we can infer an equipollent importance of top management support for our field.

Drawing on the rich literature on business process redesign (BPR) it is possible to argue analogously to the ERP system implementation case as before. In a broad and comprehensive literature review conducted by Abdolvand et al. (2008) the authors investigate success and
failure indicators in BPR efforts and find that top management support and commitment is one of five key success factors that can ensure the success of BPR projects. Again, assuming sufficient similarities with regard to the hurdles that have to be overcome when implementing business process redesign and business process standardization projects it is legitimate to transfer the authors’ arguments to our field. Summing up the preceding arguments from literature and combining them with the case study findings we hypothesize that:

H1: Top management support positively affects business process standardization.

4.1.2 Involvement of HR-, business- and IT-departments
><p>The involvement of the HR-, business- and IT-departments refers to the extent to which these departments were already part of the design and the rollout of the process standards and not primarily have been exposed to the process standards after their implementation. In subsection 3.7 of the case study the interviewee points out that an essential success factor for the process standardization project was the early and intense involvement of the HR-, business- and IT-department.

In IS literature we do find some authors supporting this aspect, for example, in his work de Vries (2006a) analyzes the influence of participation of future users of standards on the actual use the standard will have after its roll out. In a survey he asked whether the party that demands for a new or revised standard was involved in the development process of the standard and whether during the development process of the standard the future users of the standard have been involved. Among the results of his survey were: "Crucial in the development of standards is the way the actual users of the standards participate in this process. The investigated companies recognize the importance of user participation but often still give too little attention to this crucial detail." Involving the demanding party and the future users in the development and roll out of a standard is important to make sure that the standard is as user-friendly as possible and best fits the needs of the party that asked for it. Summing his arguments up, both literature and practice show that involving the requestors and the users in the standards development process has a positive influence on their actual usage (Nakamura, 1993) and subsequently on the standardization project as such (de Vries, 2006a).

Again availing ourselves of other fields of research to even further support the involvement of the HR-, business- and IT-departments as antecedent of business process standardization cases and literature in quality management (e.g., (Carpinetti et al., 2003)) and knowledge management (e.g., (Alavi and Leidner, 2001)) can be helpful. Summing up all the preceding arguments from literature and combining them with the case study findings we hypothesize that:

H2: The involvement of the HR-, business- and IT-departments positively affects business process standardization.

4.1.3 Organizational governance/topology
><p>Within the organizational governance/topology we distinguish two distinct facets: a) centralization versus decentralization of decisions and control (concerns the locus of decision-making activity in the organization) and b) centralization versus decentralization of physical locations (concerns the physical siting of facilities).
On the one hand, regarding 'a) decisions and control', following the terminology of Siggelkow and Levinthal (2003) or King (1983), we distinguish a centralized organization, in which decisions are made only at the level of the firm as a whole from a decentralized organization, in which decisions are made independently in different divisions. Brown and Magill (1994) clarify that between a centralized and a decentralized organization – on a continuous scale – different intermediate governance forms for different functions, processes etc. are possible.

On the other hand, 'b) physical locations' refers to the degree to which the business process in focus is executed (in distinct variants) along different production locations (and/or product types). A highly decentralized siting of physical locations could for example consist of several decentralized production locations each executing the business process in focus in a slightly varied form.

In subsection 3.8 of the case study the interviewee explains that the existence of the central shared service center in Switzerland, which has been established before the process standardization project, actually allowed an efficient diffusion of the standardized process to the decentralized business units and thereby in the first place permitted the whole project to be successful. Applying the just now introduced terminology to the case study setting the organizational governance/topology can be described as centralized in terms of 'a) decisions and control' and decentralized in terms of 'b) physical locations'.

The more centralized an organization is with regard to decisions and control the easier it is to roll out and diffuse and later to implement and integrate the standardized business process in focus; this is due to more efficient and highly respected decision authorities which lead to less disturbance from business units which do not act in alignment with standardization agreements. The more decentralized an organization is with regard to the physical facilities the greater the impact can be a business process standardization can have on the business process performance due to e.g., greater accomplishable economies of scale and inhomogeneities that can be unified (Brown and Magill, 1994). Hence, summing up these arguments and combining them with the case study findings we hypothesize that:

H3: Organizational governance/topology positively affects business process standardization.

4.2 Deriving the research model

Combining the three antecedents that emerged from the case study and that have been linked to literature in the previous three subsections we obtain the aimed at research model. Figure 2 below shows the research model around business process standardization containing the three hypotheses H1 – H3.
The three antecedents as shown in Figure 2 provide an answer to our initial research question as they are important drivers of the impact of business process standardization on business process performance.

5. Conclusions
The aim of this paper was to explore the antecedents of business process standardization using both an exploratory case study (section 3) and an overview of literature based arguments to support the assembled antecedents (section 4). After numerous research approaches which showed and confirmed the positive impact of process standardization on business process performance this research approach now provides a further understanding of what drives process standardization.

5.1 Summary and contribution
The most important finding of this paper are three major antecedents of business process standardization: top management support, involvement of the affected departments (here: HR-, business- and IT-department) and the organizational governance/topology (compare Table 3). We developed a research model around process standardization focussing on the antecedents of process standardization instead of focussing on the impact on process performance – as most other authors in the field did before. Such a model has not yet been offered in human resources (information systems) or BPM research. Hence, this paper represents one of the very few attempts so far to derive and theoretically underpin the antecedents of business process standardization and can subsequently serve as starting point for promising future research.
Managers or other practitioners responsible for corporate staff recruitment can use our work as easy manageable checklist of strategic routes for implementing and fostering business process standardization. Building on this checklist – within business process standardization activities – they can easily control for and optimize along the given antecedents to maximize the overall impact of their process standardization activities.

5.2 Limitations
As with any work in a new field of research, relevant Information Systems literature about antecedents driving business process standardization to build on is almost non-existent. As this paper therefore partly draws its findings from an exploratory case study approach some of the
findings may not yet be directly generalized or transferred to different contexts. To say it with the words of Byrd and Turner (2000) "a single study in any area is only one piece of a puzzle". Standardization actions in process designs and settings different from staff recruitment might be determined by other or additional drivers than the ones we found in our exploratory case study.

5.3 Further research
In this paper we developed a research model around business process standardization containing all relevant antecedents.

First, future research should complete more case studies to confirm the validity and completeness of the here shown antecedents of business process standardization.

Second, based on our conceptual research model quantitative empirical research should be undertaken to corroborate the derived antecedents. Furthermore a complete evaluation of the impact of business process standardization on business process performance with respect to the different antecedents might provide interesting results. Which of the antecedents has a strong influence and which has a small influence on the impact of business process standardization on business process performance? With quantitative empirical surveys questions like these can be answered.

Finally, we think it will be very promising to empirically substantiate the research model for other processes than staff recruitment, like primary processes as procurement, logistics, sales/marketing or after sales and secondary processes as finance, IT or administration (Porter, 1985) and for other industries (e.g., financial industry or automotive industry) and compare the results.

References
Business Process Management Journal. This journal examines how a variety of business processes intrinsic to organizational efficiency and effectiveness are integrated and managed for competitive success. Emerald, since 1995.


de Vries, H. IT standards typology. In: Kai Jakobs (Ed.) Advanced Topics in Information Technology Standards and Standardization Research, pages 1–26, 2006b.


Hesser, W., de Vries, H., and Feilzer, A. Standardization in companies and markets. Helmut Schmidt University Germany, Erasmus University of Rotterdam Netherlands, 1st edition, 2006.


