

APPROACHES TO PROCESS STANDARDIZATION PROCEDURES

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Abstract

This paper describes possible approaches to process standardization procedures using the example of a project. Starting with the identification and selection of processes with standardization potential in the preliminary study, the modelling of process standards is carried out in the next step - the concept phase. Reflections on typical situations in the definition of process standards, taking into account the process of mass customization, show three approaches. Differences arise in the standardization of several process levels, of process interfaces and of the creation of standard variants. Finally, the article addresses the implementation and controlling of the process standards. Changes in customer requirements and process innovations mean that process standardization is not a onetime project, rather an ongoing activity.

1 Introduction

Several studies in recent years have confirmed the increasing importance of the subject of business process management (BPM). Hammer and Champy define a business process as a collection of activities taking one or more kinds of input and creating an output that is of value to the customer [1]. According to Schmelzer/ Sesselmann, BPM is an integrated and long-term concept of leadership, organization, control and optimization of business processes. The approach should allow for targeted management of business processes, and align the entire organization on meeting customer needs and demands of other stakeholders. The key objectives are seen in the increase of the efficiency and effectiveness of the processes of the company ([2] p. 4-5). The standardization of processes has an important role in achieving these goals. Studies repeatedly show the standardization as a central aspect of BPM. However, there are only few publications on how process standardization operates and what aspects are to be considered. This paper first makes clear what can be understood by process standardization. The authors proceed to demonstrate a project-based procedure for process standardization and introduce three possible approaches to process standardization.

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2 Basics of Process Standardization

Standardization generally means unification on a specific pattern. Process standardization provides a uniform and consistent process landscape, through which the exchange of services between business units and with external customers and suppliers can be managed transparently and efficiently ([2] p. 201). It will mainly be initiated when a certain degree of a uniform format for business processes is likely to solve quality or performance problems of processes. In addition, external requirements such as legal frameworks or standards along the supply chain can trigger a standardization of processes.

Standardized processes open up a number of opportunities for companies from which some objectives of process standardization can be derived. For example, improvements in the quality of carrying out the process as well as time and cost advantages are mentioned. Employees can familiarize themselves quickly with the standardized processes. Coordination costs can be reduced through defined interfaces. Process performance is comparable to using standard processes.

Standardization is also associated with risks. In particular, process standardization results in limited flexibility in service creation. This contradicts the increased customer demand for individuality, and it can lead to disadvantages for the company in competition. A solution to this dilemma, the concept of process of mass customization, is to be further elaborated in section 3.2.3.

If a process is to be standardized, the following questions must be answered:

- Which process elements are to be standardized (object of standardization)?
- To what degree should the standardization of these elements be carried out (degree of standardization)?
- At which sites or business units should the standardization be implemented (range of standardization)?

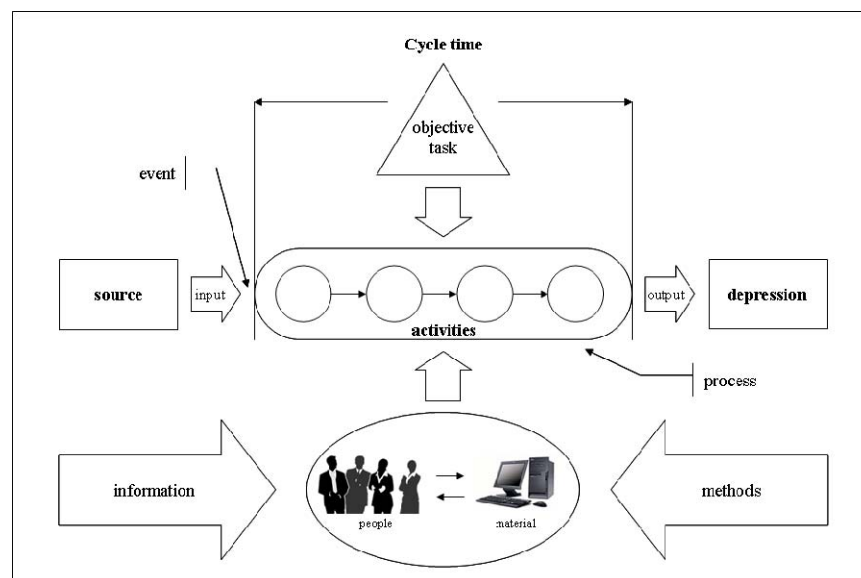


Figure 1 Basic model of a process (according to [3] p. 50)

The individual elements of a process can be an object of standardization (see Figure 1). In the following section possible objects of standardization are described briefly. The appropriate degree of standardization is also discussed.

An event triggers a process, when, for example, stocks fall below the reorder point. Standardization can be seen as triggering events. This will ensure that a process is initiated at the right moment.

Process input and process output are physical objects or information. The definition of the degree of standardization depends on the observed object and on the upstream and/ or downstream processes.

The activities represent the core of a process. With the implementation of the activities a process is realized. In standardization on the one hand, the single activity has to be considered, but on the other hand also the process logic, which determined the order of execution of the activities. Establishing the degree of standardization must be seen in the structure of process (also known as process hierarchy). This is understood as the gradual (top down) break-down of a process into its sub-processes; process steps up to activities. Alternatively, one can speak of different process levels. The higher the degree of standardization, the more levels are consistent in terms of their activities and process logic. For standardization process variants also play a role in the context of these activities. These arise when different activities or activities within a process routine are possible, for example, depending on whether standard products are used which are in stock, or whether individual products are produced. The degree of standardization is then higher when we have the lower number of variants.

Information may be provided from an upstream process step as input, possibly by obtaining it from an information system. In both cases, it is important for the necessary information in the same scope to be available for employees performing the same activities. The better this is fulfilled, the higher the level of standardization.

The range of standardization is the third aspect that needs to be clarified in connection with standardization. A process can be standardized in a single site or across multiple locations. In the first case, in one location all relevant employees must carry out the activities in the same way, having access to the same information and using the same material resources. In the second case, this requirement applies across different locations. The definition of the range of standardization may also be relevant for businesses, such as strategic business units or subsidiaries.

Building on these foundations, the following section describes a possible systematic approach in practice.

3 Procedure for process standardization

Depending on the scope of the expected changes, the implementation of process standardisation for a company may be carried out within a project. The following part will briefly discuss the different project phases.

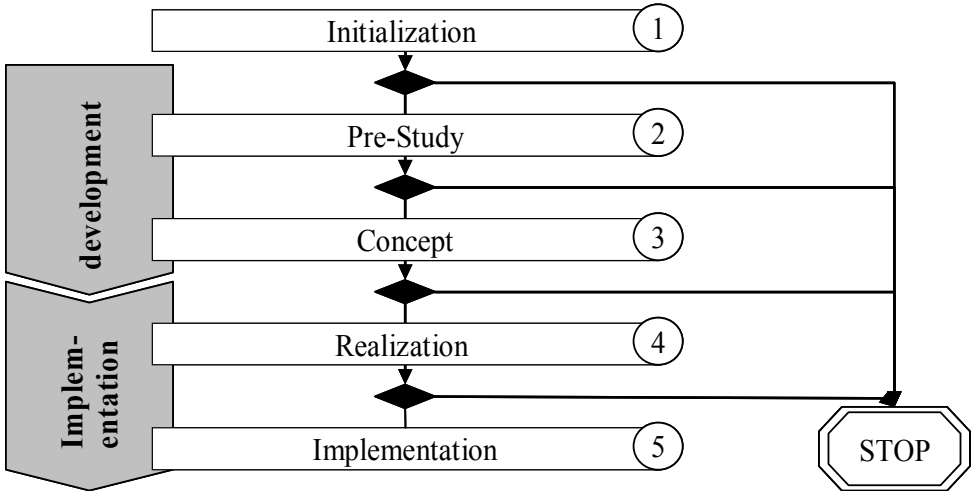


Figure 2 Phases of a project (according to [4] p. 15-16)

The previous triggers have shown initializing of the project. In each phase the project team develops predefined outcomes (milestones). These provide important information about the project's progress and form the basis for the approval or rejection of the next phase by the project committee. The phases are shown in Figure 2. Below the individual project will be contemplated more closely.

3.1 Pre-study: process analysis and selection of relevant fields of standardization

The purpose of process analysis in a preliminary study is, on one hand, the description and evaluation of processes already standardized. On the other hand, those processes are to be identified and prioritized into those that have a potential for standardization and those where there is a necessity for standardization. For this purpose, the step-by-step approach described below would be recommendable (inspired by the approach in [5], p. 30ff).

3.1.1 The first description of the actual processes

In order to give a brief outline of the actual processes in their interactions and relationships, depending on the situation, the two top levels of the respective process hierarchies are described. The overview of the process flow structure is established by demonstrating the processes in the process map (e.g. value chain diagrams) for the respective levels.

3.1.2 Identification of significant processes with a potential for standardization

To be able to run a standardization project successfully and with effective use of resources, one should now focus on actual process maps and on strategically important process issues. This means an evaluation of the different processes regarding valency and significance to achieve the overall objectives of the company (key processes of strategic relevance). The processes are placed according to their importance in a hierarchy.

Then an estimate must be obtained of the extent to which key processes are generally suitable for standardization, and if a benefit for the company could arise in reaching the company's objectives.

Eventually a more detailed view on the processes on a lower level of the process hierarchy (break-down into sub-processes or process steps) could be appropriate.

The following aspects indicate standardization potential or necessity (in part based on [6] p. 51 and [7] p. 227ff):

- (high) reproducibility and generality of processes within the enterprise business unit at one location, in different locations or in different business units
- (high) coordination and consultation requirements within processes of internal and / or external interfaces, and cross-sectoral (e.g. product / technology development), across business unit (e.g. development of system solutions by composition of components of individual business units) or across business units (e.g. supply chain management),
- centralization or relocation of services (e.g. outsourcing of processes),
- intra-and inter-company integration of IT applications to be accompanied by process integration.

It should be noted that reasons may exist which speak against a standardization of certain processes. For example, key requirements of external customers may not allow the implementation of standardized processes, or the necessary IT systems and infrastructure might not yet be available.

As a result of this phase, the identified processes of the enterprise with a standardization potential are represented in a process map or in another appropriate form.

3.1.3 Prioritization and selection of standardization fields

For a possible standardization you evaluate the cost-effectiveness of the identified processes in the next step. That means, costs and benefits of the standardization are weighed against each other. The result is a prioritization and selection of promising standardization fields. Thus, the phase of the pilot study is completed. The following stage is now the design, i.e. the modelling or determination of the process standards.

3.2 Concept: modelling company-specific process standards

The core of the standardization processes is to design process standards on a conceptual level. Process standards are the normative requirements for the ideal type of unifying processes in enterprises. Process standards therefore have reference character specific of a company as regards the process objects with the appropriate degree of standardization or regarding the standardization place respectively.

3.2.1 References for process standards

In the case of modelling or defining the process standards, a general decision must be made on what basis the target processes should be built in accordance with the process map. If we first consider the individual process, it is clear that, on the one hand, the internal idealized actual processes (Best Practice) can be taken as reference. Due to the normative nature of process standards, the actual processes provided as reference processes are to be evaluated in terms of their effectiveness and efficiency. By measuring and evaluating the process performance of similar processes of other companies and the comparison with one's own actual processes (benchmarking) adjustment and optimization measures can be derived for the process standards.

On the other hand, it is to be considered whether any external reference process models are to be included and adapted. An example of a reference process adapted by many German savings banks, is the so-called "Modell K" which means "model organization for efficient loan processing" ([8] p. 3).

Reference process models can also describe holistic process structures (level approach), which are relevant as a framework for a partial or complete take-over or adapting.

A reference process model with a holistic point of view is, for example, the Supply- Chain Operations Reference model (SCOR model). In the level concept of the SCOR model, an integrated structure of processes for the supply chain management (SCM) is predetermined.

It thus contains a standardized approach for structuring the process throughout the supply chain value chain for the purpose of improving process performance along the Supply Chain. For example, Siemens has decided to use substantial parts of the SCOR- model

in the development of company-specific process standards in the field of SCM. ([5] p. 22)

3.2.2 Detailed modelling of process standards

In detail, the definition of the standards process is done by clarifying the standardization characteristics, as explained in section 2. This applies to both the individually modelled processes, as well as to the reference processes taken over or adapted. The process objects are described according to the desired processes from the beginning (source) to the end (depression) of the process from the intermediate activities and corresponding process logic, process inputs and its suppliers and / or process output, and their addressees ("the Customer"). The degrees of standardization and standardization range are depending on the individual company objectives and targets. Reflections on typical situations during the definition of

process standards – taking into account the process of mass customization – resulted in different approaches.

3.2.3 Typical approaches in the context of Process Mass Customization

It is mainly for reasons of competitiveness that a facilitation of a certain flexibility of processes is necessary despite standardization. Accordingly, this should be taken into account as a necessary condition for process standards. A flexibility of processes is sought by the concept of process mass customization. On the one hand, this aims to standardize as many repeatable processes as possible ("Process Mass ..."); on the other hand, its target is to make processes as customer specific as much as possible to increase customer’s satisfaction ("... Customization ") ([5], p. 3). Please note that mixed forms of the approaches outlined below are possible.

Approach I: standardization process over several levels (holistic approach)

In a project that aims at process standardization at different locations, in different business units or subsidiaries, the holistic approach of standardization of several process levels could be used. In that case the process is more likely be described as standard in less detail on a higher level (Mass); the separate sites/divisions/subsidiaries being designed individually on the lower levels (Customization) (see figure 3).

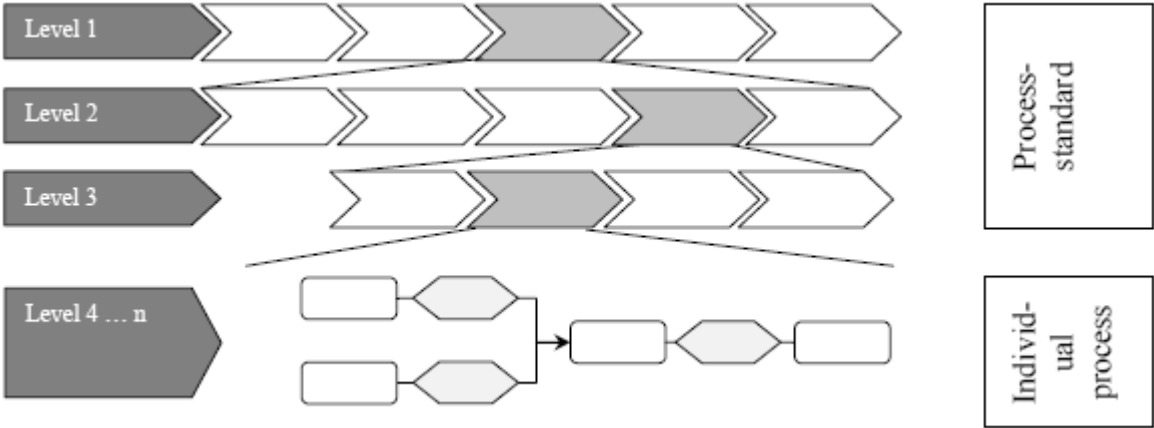


Figure 3 Standardization approach for several process levels (following [5] p. 28)

Approach II: standard variants

To design the (standard) processes to be more flexible, standard variants could be created. A process (Px) is divided (detailed) into sub-processes (TPx) and for the sub processes, possible variants (V) are derived. After that, the most frequently used variants in a sub-process must be selected, described in detail or modelled and declared as standard variants (Mass.). The individual sites/divisions/subsidiaries can then put together, the entire process using individual standard variants (Customization) (see figure 4).

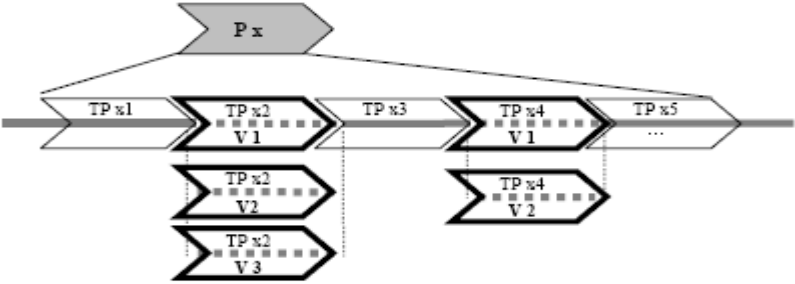


Figure 4 Standardization approach with process variants

Approach III: standardization of process interfaces

In case of outsourcing, standardization of process interfaces is typical. Besides the precise definition of the source and depression of the process (process cuts), the exact description of the outputs to be delivered by the department or service provider for the following (partial) process and a possible detailed description of the necessary inputs are essential (Mass).

The department or the service providers do not have to follow the default processes carrying out the process; they can act more flexibly (Customization) (see Figure 5).

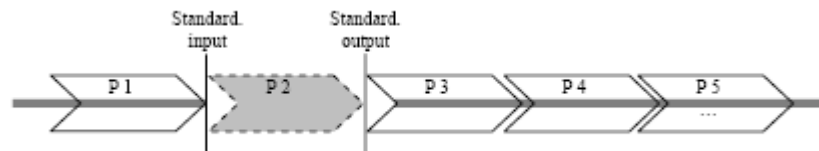


Figure 5 Standardization approach of process interfaces

3.3 Implementation / realization of standardized processes

After the target processes have been modelled, the question arises how this could be implemented in the company. In the subsequent implementation phase (see Figure 2), the standardized processes are realized, i.e. operating procedures will be adjusted, software developed or purchased, staff trained etc. Often the concept and implementation phase overlap in practice. If possible it is recommendable to thoroughly check for and fix errors before introduction of the new processes.

With the introduction phase the old processes are turned "off", and the new processes "on". This critical phase for the project's success can depend on complexity to be carried out in the "Big Bang" style (all at once) or in stages. After acceptance of the standardized processes by the line organization or the recipient, and new processes having been launched, the project comes to an end. Now the project documentation is to be completed, and the possibly remaining tasks are to be carried out. In addition, an impact evaluation could be done to evaluate if the economic forecasts were correct.

3.4 Controlling of the implemented process standards

The implementation of a standardization process has been successful if the previously defined objectives have been achieved. To be able to give a proper assessment, it is necessary to measure the process performance (Controlling). Suitable for this purpose are indicators which can measure the process performance. Examples are ([7] p. 354):

- Technical process indicators (e.g. lead time, processing time, etc.),
- Financial indicators (process costs, profitability, budget restrictions, etc.),
- Service level (time guidelines, number of errors, response time, etc.),
- Quality indicators (deviations, scrap rates, etc.),
- Customer perspective indicators (customer turnover, new customers, etc.).

If, during the regular process controlling, deviations from the indicators are detected, a review of the process standards is required, and if necessary alterations are to be carried out. This procedure ensures sustainable success.

4 Conclusion

This paper describes the fundamentals of process standardization on the basis of the elements of a process. One possible approach was shown by the example of a project, structured in different phases and steps.

In the pre-study the identification and selection of the important processes with standardization potential was done. The modelling of the company-specific process standards takes place in the concept phase. The modelling can be done individually, based on the company's own best-practice processes, or by adoption or adaptation of external reference processes. Reflections on typical situations in the definition of process standards have led to three approaches - taking into account the process mass customization. Differences arise in the standardization on several process levels, the formation of standard variants as well as the standardization of process interfaces. After the modelling this paper also considers the implementation and the controlling of process standards in companies. Controlling allows the measurement of process performance and initiates a new process analysis if deviations from the target indicators occur.

Through process innovation, process improvements or changes in customer requirements, process standardization is not a one-off project, but an ongoing activity in the company.

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ANSÄTZE ZUR VORGEHENSWEISE BEI DER PROZESSSTANDARDISIERUNG

Der vorliegende Beitrag beschreibt eine mögliche Vorgehensweise zur Prozessstandardisierung am Beispiel eines Projektes. Angefangen mit der Identifikation und Selektion von Prozessen mit Standardisierungspotenzial in der Vorstudie, erfolgt die Modellierung der Prozessstandards im nächsten Schritt – der Konzeptphase. Unter Berücksichtigung der Process Mass Customization zeigen Überlegungen zu typischen Situationen bei der Festlegung von Prozessstandards drei Ansätze. Unterschiede bestehen in der Standardisierung über mehrere Prozessebenen, von Prozessschnittstellen und der Bildung von Standardvarianten. Abschließend wird auf die Umsetzung und das Controlling der Standards eingegangen. Geänderte Kundenanforderungen und Prozessinnovationen führen dazu, dass es sich bei der Prozessstandardisierung nicht um einmaliges Projekt, sondern eine fortlaufende Aktivität handelt.

MOŻLIWE SPOSOBY POSTĘPOWANIA W PROCESIE NORMALIZACJI

Niniejszy artykuł opisuje możliwy sposób postępowania w procesie normalizacji na przykładzie jednego projektu. W pierwszej kolejności we wstępnym opracowaniu definiowane i wyłaniane są procesy mające potencjał w zakresie normalizacji, następnie modelowane są standardy procesowe. Rozważania nt. wzorcowych sytuacji dotyczących wskazania standardów procesowych możliwe są dzięki trzem podejściom z uwzględnieniem Process Mass Customization. Różnice istnieją w procesie normalizacji o kilku poziomach, w interfejsach oraz w tworzeniu wariantów standardowych. Na zakończenie omówiona jest realizacja i controlling tych standardów. Zmienione wymagania klientów i doskonalenie procesów skutkują tym, że w przypadku procesu standaryzacji nie mamy do czynienia z jednorazowym projektem, ale z działaniem ciągłym

MOŽNÉ POSTUPY V PROCESU NORMALIZACE

Tato práce popisuje možný postup v procesu normalizace na příkladě jednoho projektu. Nejprve se v předběžné studii identifikují a vyberou procesy s potenciálem pro normalizaci. V další fázi, tzv. koncepční části, následuje modelování procesních standardů. Úvahy o vzorových situacích týkajících se určení procesních standardů umožňují tři přístupy s přihlédnutím k Process Mass Customization. Rozdíly existují v procesu normalizace s více úrovněmi, v rozhraní a ve vytváření standardních variant. Na závěr budou projednány realizace a ověřování těchto standardů. Změny požadavků ze strany zákazníka a vylepšování procesů mají za následek, že se u procesu standardizace nejedná o jednorázový projekt, nýbrž o nepřetržitou činnost.