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Appropriate Process Standardization

Foundation for Efficient and Impactful
Digital Transformation

by Dr. Mathias Kirchmer

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Abstract

Realizing the right process standardization has a significant impact on the performance of companies. It has become especially important as a foundation to deliver efficient and impactful digital transformation initia-tives. The importance of process standardization requires the development of a systematic approach as presented in this paper. This approach addresses re-quired context-driven variants and considers all components of a business process, hence, organization, data, functions, deliverables and control flow. Levels of detail and abstraction of the standardization are defined based on the specific goals. The realization of process standards leverages process ref-erence models as a core enabler as well as appropriately defined process governance to sustain the standard-ized processes.

Keywords: Business Process Management, Digital Transformation, Process Design, Process Governance, Refer-ence Models, Standardization.

1. The Value of Process Standardization for Digital Transformation

This whitepaper is based on an article developed for the Business Modelling and Software Development (BMSD) Sympo-sium [0]. Business process standardi-zation significantly impacts process performance and is a key driver in establish-ing successful business processes across an organization [1][2].

This section de-fines process standardization and shows why it is especially important in the con-text of a digital transforma-tion. Standardization helps realize the full value of digitalization initiatives. A discussion why standardization still requires variants of business processes is used to explain the need for a systematic approach to achieving appropriate standardization, leveraging process management methods and tools.

1.1 The relation between process standardization and digital transfor-mation

Standardization, in general, is the process of implementing and develop-ing inputs, work processes or outputs. This requires the acceptance of different parties that include companies, users, interest groups, standards organizations and govern-ments. It can help maxim-ize compatibility, interoperability, safety, repeatability, or quality [3][4][5]. Business process stand-ardization refers to the design and realization of organ-iza-tion-wide uniform business processes. Examples are estab-lishing a procure-to-pay process the same way in different product units of a company or customer service processes in various regional units of an organization. Standardization helps to make processes more efficient, effective and simplifies their automation [2]. This leads to its special importance for digitali-zation initiatives.

Digital transformation (used synonymously to digitalization) refers to integrat-ing products and services with people, leverag-ing digital technologies, which are usually based on the internet.

The value from these digital technologies is deliv-ered through appropriately designed and implemented new or significantly im-proved business processes [6].

Process standardization enables successful digitalization. Process standardiza-tion allows an efficient digitalization approach that delivers the best value since good practices for a specific business process can be easily rolled out across the organization [2]. The standard processes are realized through the consistent use of digital technologies, such as automated workflows, in various organizational units of a company.

The definition of digital transformation with the impact of process standardiza-tion is visualized in Figure 1 [7]. The value business process standardization brings to digital transforma-tions is now examined further.
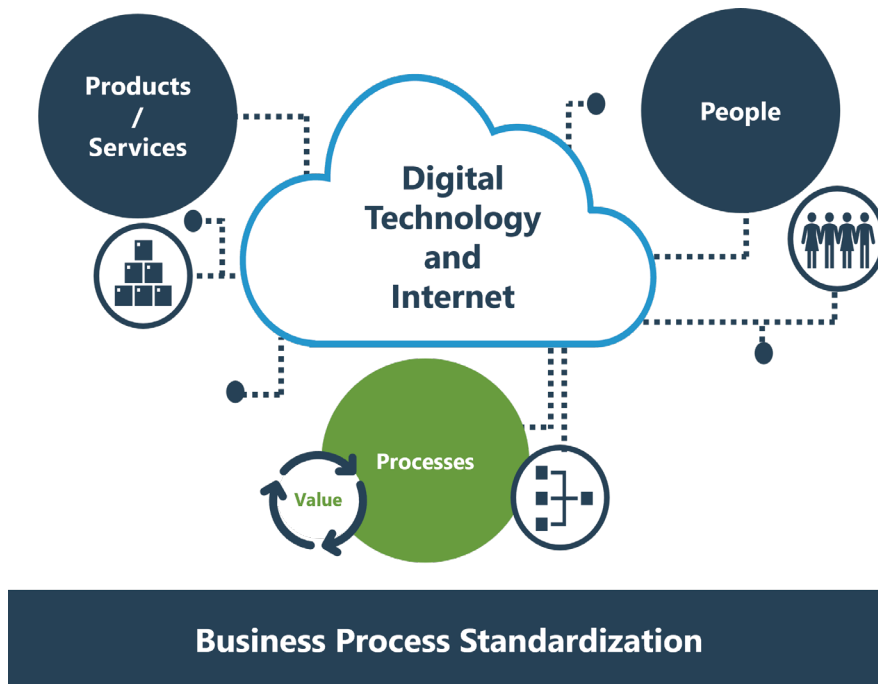

Figure1: Illustration of the Definition of Digital Transformation and the Impact of Business Process Standardization

1.2 The value of process standardization for digital transformation

A direct effect of process standardization is the efficient role out of automa-tion solutions and digital technologies in general [2]. Solution components can be aligned with the standard process-es and applied in all relevant business units. This simplifies, not only the digital transformation, but also the following mainte-nance of the digital solutions. The result is a reduction of the total cost of owner-ship.

The standardization of processes enables a consistent custom-er experience, for example, across different regions and countries. Organizations with international clients, such as in the aerospace industry, gain significant competitive advantage through this consistency. This standardization effect is signifi-cant in digital trans-formation initiatives since they often focus on customer-facing front-office pro-cesses [6].

Standardized processes can be adjusted faster across an organization to reflect changing customer, supplier, or other market requirements. The adjustment only has to be identified once and can then be rolled out in all business units the same way. The result is a higher degree of agility for a company. The flexibility of digi-tal solutions is leveraged effectively to provide ongoing value.

The management of processes toward compliance with legal or other require-ments is simplified through process standardiza-tion. This is especially true for operational compliance since controls and checks only have to be defined once and then applied in all relevant business units.
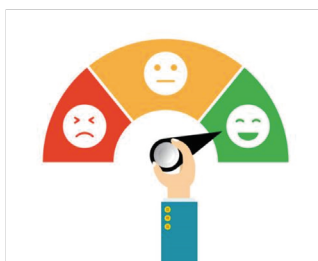
These key benefits of process standardization, especially in a digitalization context, is summarized in figure 2.

Aides in preparation for efficient automation and digitalization

Ensures compliance of regulations and/or company policies

Helps maintain consistent positive customer experience

Enables the right agility across the company

Figure 2: Key Benefits of Process Standardization in a Digitalization Context

1.3 Process Standardization doesn't eliminate process variants

The standardization of processes across business units of an organization can only be done to a certain degree due to the business context of a process. This business context, such as geography with specific legal requirements, a variety of products and channels or different target markets, may require variations of pro-cesses that cannot be avoided.
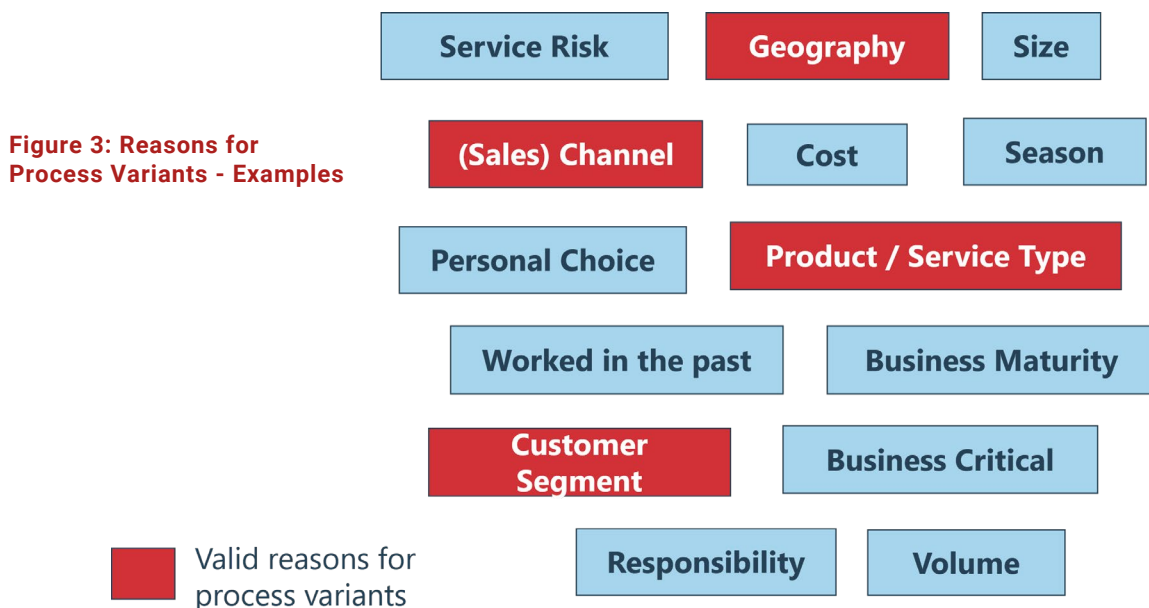
International organizations with operations in different countries must follow country-specific laws. These region-specific requirements lead to corresponding business processes and, with that, to country-specific variants, for example, in the finance area. Supporting digital solutions need to be extended accordingly.

A wide variety of products and services also leads to unavoidable process var-iants. A company, for example, that uses wood as a raw material to produce build-ing products and a variety of paper products ends up with variants in its supply chain and production processes. Insurance firms with different products, such as property, casualty, life, and car insurance, will require variations of a series of processes, e.g., in their underwriting processes.

A company that supports different sales or procurement channels has to accommodate those through appropriate process variants. A simple example is the acceptance of customer orders through a web page and mail orders, depending on the business unit. The result is a varia-tion of the order-to-cash processes.

An organization that serves significantly different client groups, such as end-clients and retail clients, has to adjust to those client groups. This results in pro-cess variants depending on the client group targeted in a specific business unit to accommodate, e.g., the needs of professional clients with specific delivery and payment approaches and private customers.

Considering required standardization limitations by identifying necessary var-iants is the basis for of a successful standardization approach. There are several other reasons for organizations to accept process variants. However, practical experience has shown that other reasons, like different qualification levels or cost impacts can be overcome. Figure 3 shows the valid reason for process vari-ants and examples for other explanations.

Figure 3: Reasons for Process Variants - Examples

Service Risk	**Geography**	Size
(Sales) Channel	Cost	Season
Personal Choice	**Product / Service Type**	
Worked in the past	Business Maturity	
Customer Segment	Business Critical	
Responsibility	Volume	

🟥 Valid reasons for process variants

The requirement for process variants, hence, the limitations of process stand-ardization does not only impact the transformation and implementation of busi-ness processes.

It also leads to the needs to continuously managing these process variants from a business and technology point of view. Hence, process manage-ment capabilities, such as process governance, have to be adjusted accordingly.

2. Dimensions of Process Standardization

To manage process standardization effectively, it is important to understand what exactly is standardized and to what degree. This means the different dimensions of process standardization must be defined. Therefore, the components of a pro-cess that are addressed for standardization are identified. Then it is distin-guished between the degree of detail and abstraction of the standardization.

Determining the degree of standardization of the different process components and the level of detail and abstraction is the first step of planning for appropriate process standardiza-tion.

It leads to a realistic context-aware standardization ap-proach delivering on the desired benefits.

Systematically considering the dimensions and degree of stand-ardization allows to combine advantages of standard processes with the benefits of consciously allowed variations, e.g., to meet needs of specific customer groups. At the end this optimizes the overall value for the organization.

2.1 Process components to be standardized

A business process consists of different components that can be examined to determine what areas process standardization addresses. According to the widely used ARIS framework developed by Scheer [8] the following views on a process can be distinguished [9]:

- Organization: Who is involved in the process, e.g., which companies, departments or roles?

- Data: Which Information is used or produced in the process?

- Function: What is done in the process, which activities are carried out?

- Deliverable: What does the process produce, why do we need it?

- Control: How do all those views fit together? Who is doing what, in which flow logic, by means of which data to produce which delivera-bles?

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Each component of the business process can be described on the business lev-el and the information technology level, addressing the digital realization of the process components. In practice, the underlying digital solutions, such as soft-ware products, are commonly described as part of the function view [9].

Effective process standardization addresses all the compo-nents of a business process. Standardizing roles simplifies the exchange of people and increases the agility of an organization. Master and transaction data are standardized to enable the same software solutions across the processes. It also allows using the same analytics to manage the process towards the expected goals, such as enhanced customer experience or compliance goals. The standardization of functions and deliver-ables enables all standardization benefits discussed before: it allows the use of the same digital solutions, leads to consistent customer experience, and enhances agility and compliance.

Part of the standardization of the deliverables is the definition of standard metrics and performance indicators to manage the out-comes toward the business goals. Good practices in this area can be leveraged across the company if processes are standardized. Standard control flows lead to a consistent process logic, which is important, for example, to realize compli-ance requirements. Addressing all those process components allows the standardiza-tion of the underlying digital technolo-gies.

The components of business processes and their relevance for process stand-ardization are illustrated in figure 4. These process components are addressed in the design, implementa-tion, execution, and control of the standard processes around the entire process lifecycle.
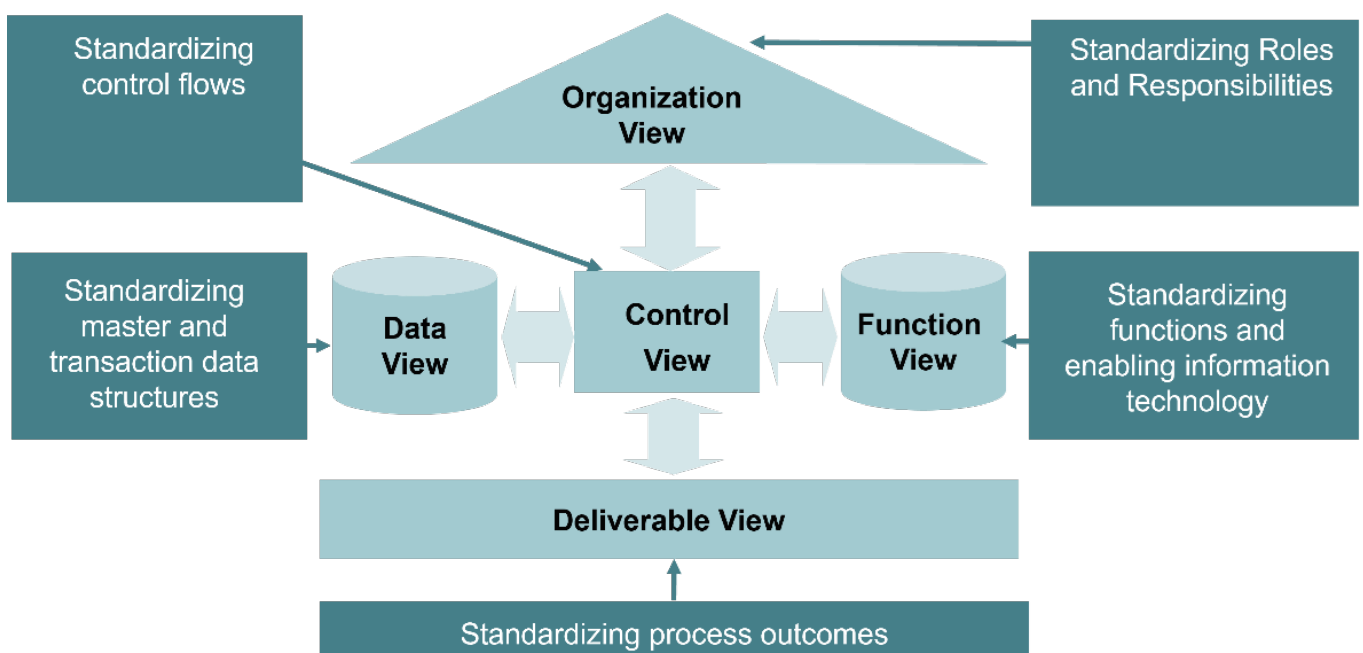

Figure 4: Components of Process Standardization based on the ARIS Architecture [8]

2.2 Level of detail and abstraction of standardization

The components of a business process are standardized on different levels of detail and abstraction. That means we define what is done in a standard process (level of detail) and how this is executed (level of abstraction).

A low level of abstraction enforces the use of the same digital solutions across the standard processes with the advantages discussed previously. The definition of a standard process on a high level of abstraction leaves room for different ways of executing a process, hence the use of different digital technologies. This can be important, for example, if using the same enabling digital technologies across the different business units is not desired, e.g., because of differences in the size of the business units or local availability of specific software systems.

A high level of detail of the definition of a process standard leaves little to no room for deviations in the different business units executing standard processes.

Things are done a certain way, no exception. This is important, e.g., to ensure compliance, for example in finance related processes. A low level of detail of process standardization leads to a higher degree of freedom for the people exe-cuting the process. This could be desirable in subprocesses that require a lot of creativity, such as in research and development process-es, or a high flexibility, e.g., when dealing with clients in busienss development situations or to resolve issues.

The appropriate level of detail and abstraction allows for adjust-ing the stand-ardization of the process to the specific context of a business process. It helps to focus on the key goals of the standardization initiatives.

Figure 5 shows examples of the combination of different levels of detail and abstraction of functions of a business process.
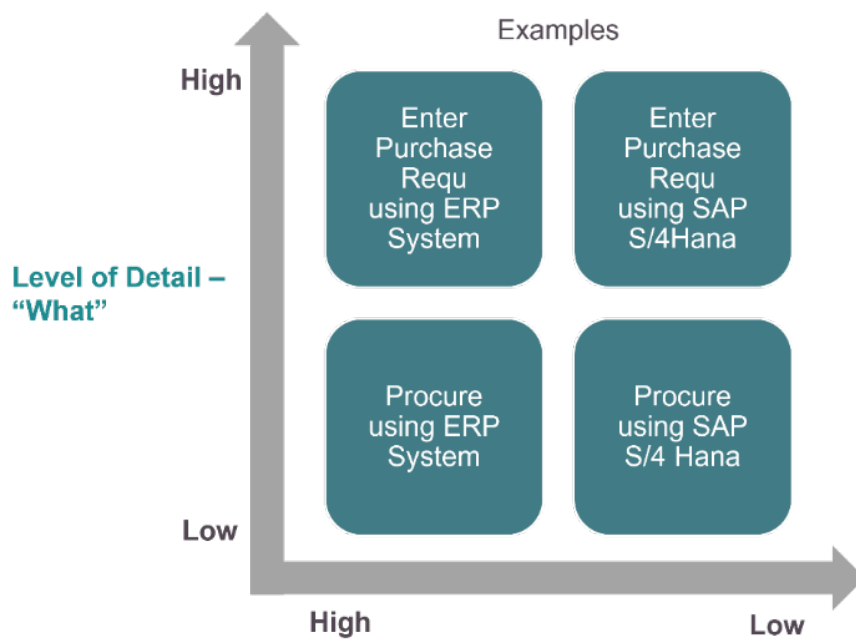

Figure 5: Different Combinations of Level of Detail and Abstraction

3. Realizing Process Standardization

The realization of process standardization leverages various business process management capabilities. In this chapter, some key tools and approaches are dis-cussed, enabling the design and implementation of standard processes and the following maintenance of the process standard.

This includes the use of compa-ny-specific process reference models to define the standard, leveraging stake-holder journey planning to come to a consistent stakeholder experience, the use of process simulation to validate the effects of process standardization as well as the role of the process management and governance organization to sustain the process standardi-zation.

3.1 Designing standard processes

The basis for implementing process standards is the structured definition of those standards in appropriate process models. The use of BPMN diagrams [10], for example, allows the specifi-cation of all ARIS views of the processes and defi-nition of the desired level of detail and abstraction of the standardization. Figure 6 shows a sample BPMN diagram with a high level of detail and low abstraction.

The different process views, as well as the level of abstraction and detail, are determined by the goals of the standardization, and reflected in the design of the process. If a key goal of the standardization is, for example, to use a specific software system to optimize software maintenance cost, a low abstrac-tion level is required since the specific application is included in the design.
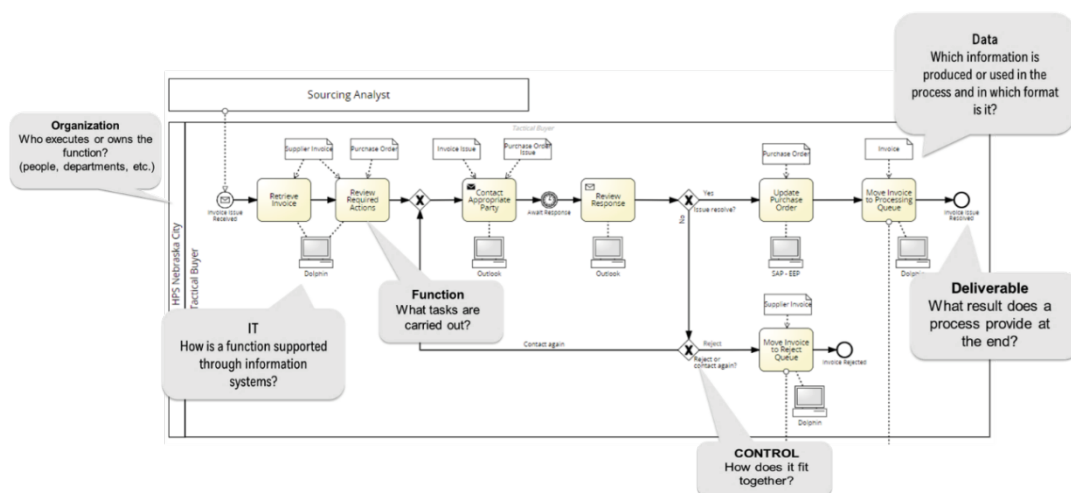
This is often combined with a high level of detail to ensure users follow the logic of the soft-ware. The definition of standard organization units, such as roles, may be less relevant.

Consistent customer or supplier experience is achieved through an appropriate process logic that can be defined on a relatively high level of abstraction since the technical realization is not relevant for the customer. Supporting the process with different applications is fine as long as they deliver consistent outcomes.

Figure 6: BPMN Diagram with ARIS Views in a high level of detail and low abstraction

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The design of the process standard is used as a company-wide reference model [9][11]. It is the starting point for implementing the standard processes in differ-ent business units. To reflect the required process variations, the reference mod-els identify the core of the standard process that should be the same across all business units and the areas with acceptable variants, possibility even defines the valid variants.

As starting point for the definition of company-specific reference models, in-dustry or software reference models can be used as accelerators [11]. In digital transformation initiatives, the software reference models show the business im-pact of the software. These models are then adjusted to the compa-ny-specific needs by adding or removing content while consider-ing the impact on software maintenance.

The use of process reference models as a basis to implement standard business processes is illustrated in figure 7.
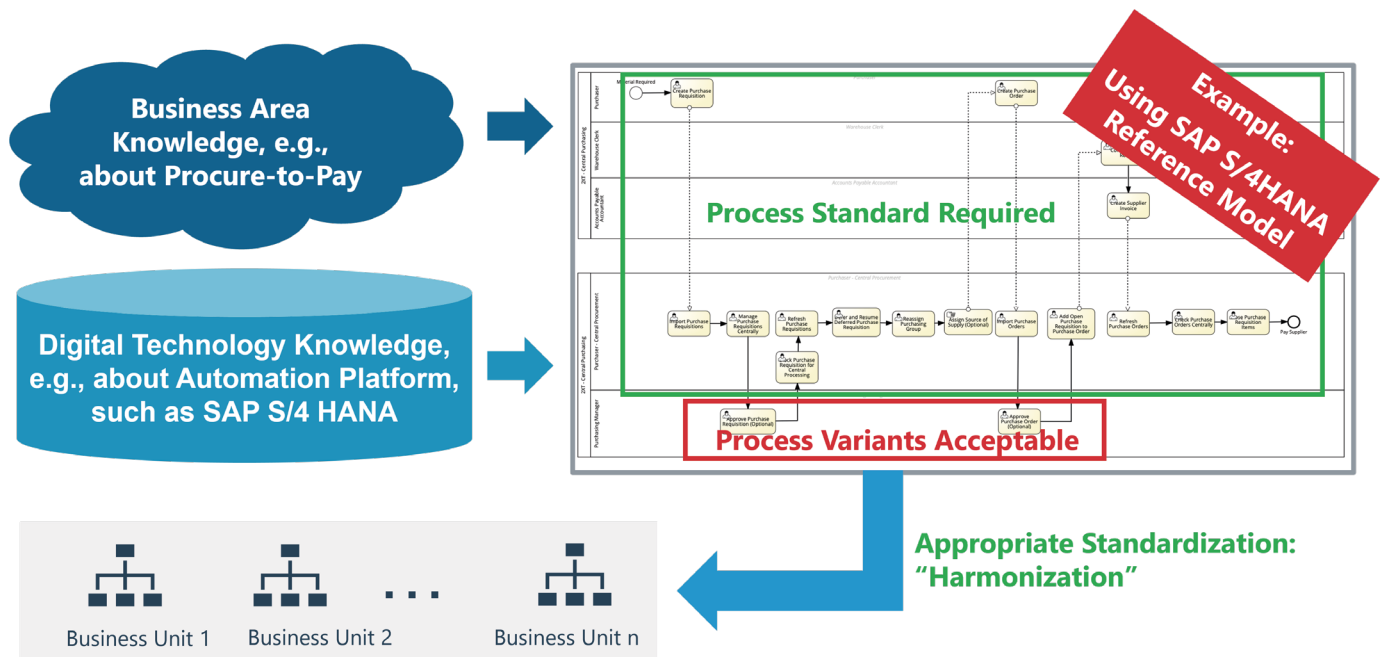

Figure 7: Process Reference models as Basis for appropriate Standardization

In cases of stakeholder experience is a key goal of the standardi-zation, such as customer, supplier or employee experience, it is important to take an outside-in look at the processes. This helps to understand the point of view of the specific stakeholder group. Stakeholder journey planning is a process management tool to address this aspect [12].

To operationalize the realization of the future experience, integrated customer journey planning is required. Every touch point of the stakeholder with the com-pany is linked to the underlying processes. This allows the focused improvement of those processes to achieve the desired stakeholder experience. The approach of integrated stakeholder planning is visualized in figure 8.

Stakeholder Journey with Touchpoints and Experience

Underlying Processes – Stakeholder Experience is an Improvement and Standardization Goal
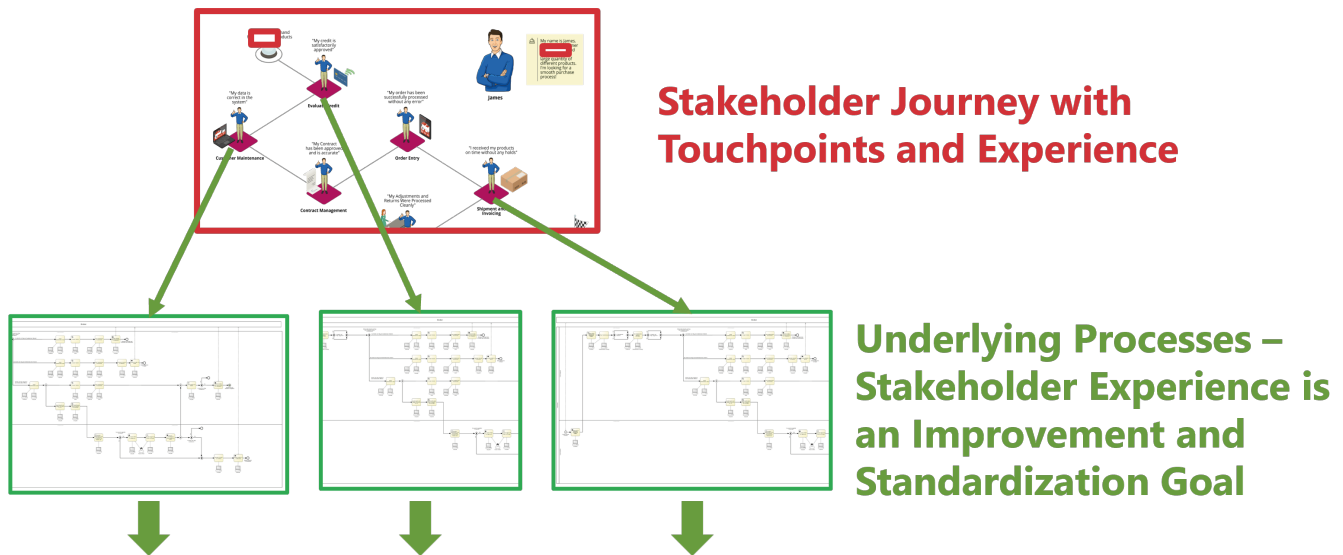
Figure 8: Integrated Stakeholder Journey Planning to achieve appropriate Experience

3.2 Validating and implementing standard processes

Before implementing the defined standard processes, a valida-tion of the ef-fects of the process standard minimizes the risk of unplanned business issues and enables the realization of expected benefits. Process simulation achieves this by provid-ing cost, cycle time or scalability information. While this is important to prepare any implementation of a new or signifi-cantly changed process, the simu-lation is especially significant for process standardization since the roll-out of the standard multiplies the effects of the process change.

Process simulation also helps determine for which business units the stand-ardization is not beneficial. A major insurance company, for example, developed a reference model to roll out highly automated process standards for their place-ment and policy servicing processes.

The simulation of the standard process showed a saving poten-tial of over 50% in larger country organizations. However, it also provided the information that the investment is not justified in several smaller country businesses, with lower transaction volumes and a smaller number of products.

The standard processes described in BPMN-based reference models are simulated using a process modeling and repository tool [9]. Figure 9 illustrates the use of process simulation. It compares as-is processes with the new standard process. The same simulation approach can be sued to compare different standard scenarios to identify the best solution.
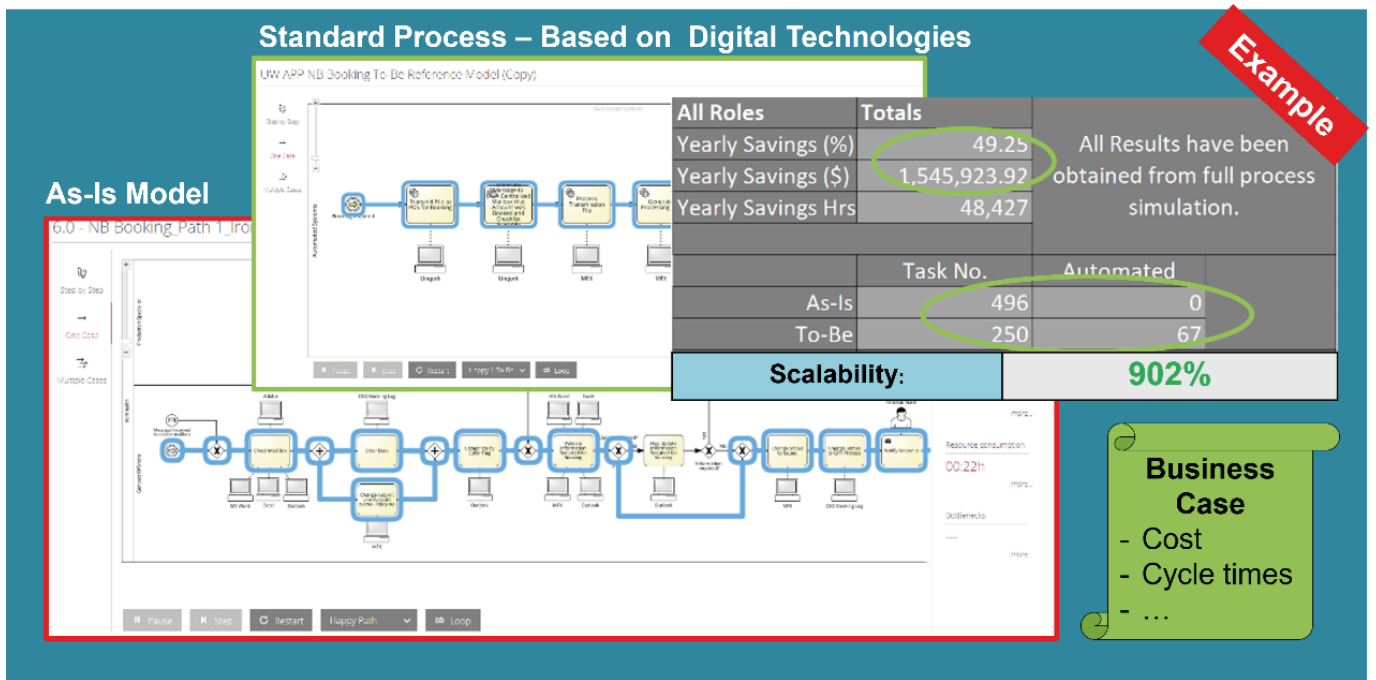
Figure 9: Simulation of Standard Process to Validate Busienss Effects

The variable components of the standard process reference model are adjust-ed for every business unit. The result is the specific process model that drives the implementation of the standard in one specific business unit. This process model is the basis for configuring or developing the digital components supporting the process, for example, an automation platform. The same model also guides the people change management to align people and technology with the process standard [13].

The people change management often also requires documen-tation of the as-is processes to understand the overall impact of the new standard process.

This is especially important when process standardization is used to roll-out of a process innovation [14]. The approach is visualized in figure 10.

Leveraging digital technologies that provide business content, such as enter-prise resource planning systems, help to imple-ment and enforce a process stand-ard. The related software-based reference models visualize the busienss impact of the software and guide its company-specific configuration.
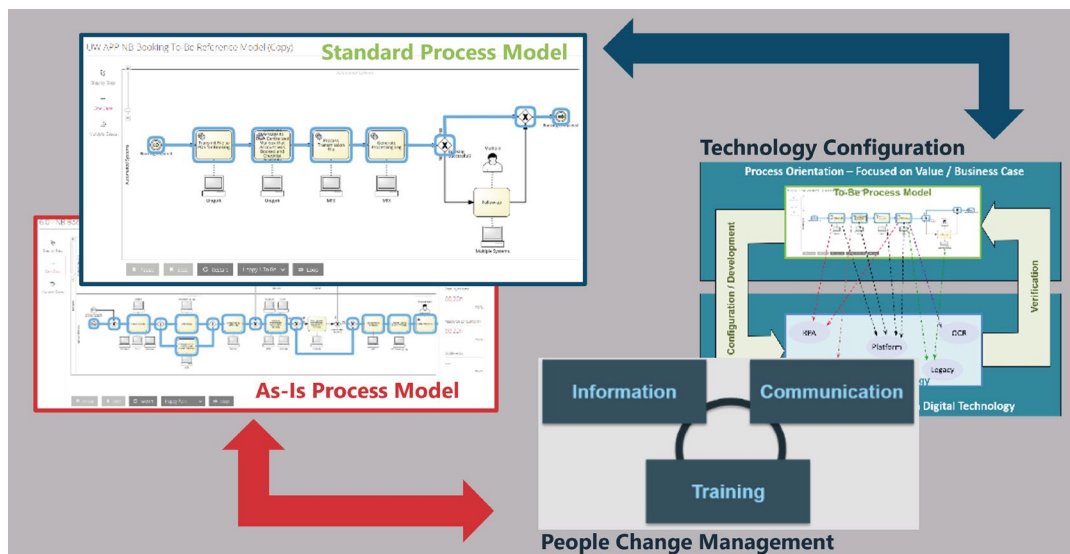

Figure 10: Implementation of the Standard Process, aligning People and Digital Technology

3.3 Sustaining standard processes

Once a standard process is implemented, the standardization has to be man-aged and maintained continuously. Sustaining process standardization has shown to be a key challenge in practice [4]. An appropriate process management and govern-ance organization addresses this issue [15][16]. The design of the standard process is used to provide top-down guidance for the execution of the process. Bottom-up control allows the required performance and conformance manage-ment. The key element of this control is conformance management, hence, con-tinuous check and management of the actual process instances and their varia-tions compared to the standard. This allows the definition of actions to reduce the number of un-wanted variants systematically. The conformance control is com-plemented by appropriate performance metrics, verifying the achievement of specific benefits.

Sustaining process standardization effectively and with reason-able effort re-quires appropriate process management tools. The process reference models, and business units' specific variants are managed in a digital process modeling and reposi-tory tool.

The conformance and performance management are support-ed through process mining and other analytics tools. Maintain-ing process govern-ance economically is realized through a digitalized governance approach [17].

A well-established process management discipline is the foundation of real-izing the value of process standardization and maintaining and adjusting it as required [16][18]. The process management organization helps to adjust stand-ards as required. Required initiatives are triggered through the process govern-ance organization.

Figure 11 shows an example of a process management and governance organ-ization. It highlights typical roles, like process owner, steward, and sponsor, as well as examples of typically used process management tools.

The process management discipline establishes the capabilities to build and sustain process standardization. It is the key enabler of effective business process standardization.
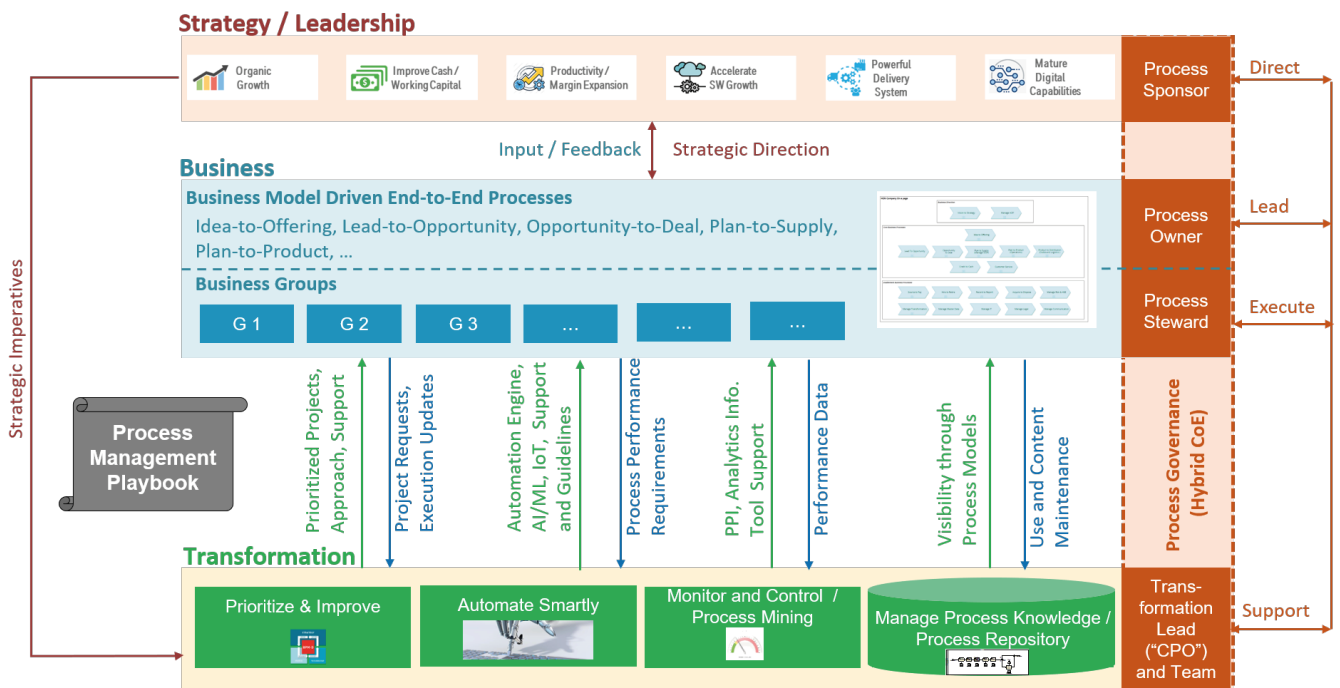

Figure 11: Example for a Process Management Organization to sustain Standardization

4. Process Standardization – now a Mainstream Topic

The standardization of business process across and organization has become a key topic for organizations, especially in the context of digital transformation initiatives. An increasing number of companies sees this topic even more im-portant than the traditional process optimization. It lays the foundation for effi-cient digitalization and ongoing improvement of processes. However, while there is a significant amount of research and practice information available about pro-cess improvement and optimization, process standardization is less researched. This paper contributes to fill this gap by showing how process management meth-ods and tools can be used to systematically realize an appropriate context-aware process standardization.

To continue to advance the approach of process standardiza-tion more research is required, for example in the following areas:

■ Management of process reference models with information about standardization and allowed variations.

■ Detailed approach to process standardization and its integra-tion into the process management capabilities of an organi-zation.

■ Governance organization and related governance processes to sustain process standardization.

Process standardization has become a foundation for success-ful digital trans-formation. Its importance is increasingly growing. Process standardization is an important capability of the discipline of value-driven process management. It under-lines the role of process management to realize the full value from digital-izaiton initiatives [19].

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Dr. Kirchmer is an experienced practitioner and thought leader in the field of Business Process Management (BPM) and Digital Transformation. He is Managing Director of Scheer Americas, previously BPM-D. He co-founded BPM-D, a consulting company focusing on performance improvements and appropriate digitalization by establishing and applying the discipline of BPM. Before he was Managing Director and Global Lead of BPM at Accenture, and CEO of the Americas and Japan of IDS Scheer, known for its process modelling software and process consulting.

Dr. Kirchmer has led numerous transformation and process improvement initiatives in various industries at clients around the world. He has published 11 books and over 150 articles. At the University of Pennsylvania and at Widener University he has served as affiliated faculty for over 20 years. He received a research and teaching fellowship from the Japan Society for the Promotion of Science.

ABOUT SCHEER AMERICAS

Scheer America excels as a leading authority in Value-driven Business Process Management. Leveraging our profound knowledge of process management, we empower organizations to attain swift and dependable outcomes. Our expertise lies in connecting business strategies with processes and improvement initiatives to precisely target and realize value, all while establishing a sustainable process management discipline. Through our comprehensive solutions, we enable effective process and data governance, implement process modeling, repositories, and process mining utilizing cutting-edge tools.

Scheer America provides invaluable assistance to organizations operating in diverse industries including Financial, Health, Manufacturing/Technology, Consumer Goods, and more, facilitating their journey towards optimal Process Performance and Digitalization. By establishing and implementing business process management capabilities, we facilitate rapid process improvement and transformation, effectively prepare for intelligent automation, develop stakeholder journey plans, and establish a robust process management discipline. Our consulting and education solutions offer the necessary guidance, ensuring the right organization, governance, and process management tools are in place, including modeling and mining software.

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