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# Service Dominant Logic and Business Process Blueprinting: Enhancing the View on Performance by Integrating the Customer Perspective

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## ABSTRACT

Today process-oriented approaches to solve business challenges are state of the art. However most business process management methods focus on increased performance only from the firm's perspective and neglect the increasing importance of value co-creation between the firm and the customer. Modern business process management methods not only need to concentrate on the internal performance of processes, but need to include the customer's perspective. In this article we introduce the method of "Business Process Blueprinting" that combines both points of view. By enhancing business process modeling with the marketing concept of service blueprinting, we offer a method to visualize and analyze the firm's and customer's perspective within one integrated approach and reduce the gap between information management and marketing. This opens up the path towards an enhanced understanding of process performance in terms of a stronger inclusion of revenue into costing and analyzing and influencing subsequent usage processes.

## Keywords

business process modeling, service blueprinting, process performance management, usage process, customer integrativity

## INTRODUCTION

The accurate measurement of process performance is an important task for enterprises to design and implement value chains and process architectures. Most currently existing tools focus on efficiency, i.e. the costs associated with a specific process from the supplier and company's internal point of view. However this approach is not sufficient any more to accurately measure performance in many cases and needs to be enhanced. Especially the concept of service-dominant logic (SDL) (Vargo and Lusch, 2004) that has gained widespread international recognition and support in recent years acknowledges the high relevance of services and their impact on all types of value creation processes. Hence an adequate performance measurement needs to integrate the specifics of service.

Amongst others customer integration is a more and more relevant element of many services – as the customer takes the role of an active participant in the value creation process. This is especially important in very service-intensive industries (e.g. healthcare) where the customer (i.e. the patient) plays a key role in the process and where his actions have a major influence on the successful process implementation and its results – both for the patient (improving state of health) and the healthcare provider (economic success). Therefore the design of business processes and IT infrastructures necessarily has to keep the customer's expectations and perception in mind.

In this paper we show that established business process management (BPM) approaches and process modeling tools do not sufficiently fulfill this requirement because of their narrow focus on the company's internal perspective and their lack of a market-oriented component. To address this issue we introduce "business process blueprinting" (BPBP or BP<sup>2</sup>). This method for value creation process modeling aims to improve internally oriented efficiency and externally oriented effectiveness, thus integrating the customer's and company's perspectives. We achieve this by enhancing a leading BPM tool – namely

ARIS/event-driven process chains (EPC) – with the customer centered service blueprinting logic known from service management.

In the following section we will introduce a use case to discuss the benefits and deficiencies of existing methods and to introduce the BP<sup>2</sup> method. Afterwards new possibilities arising from an integrated approach to process modeling will be explained. The last section covers development perspectives for the BP<sup>2</sup> as a tool to manage emerging aspects of the corporate process architecture. We aim to give a valuable contribution towards a broader understanding and interpretation of process performance in a service-centered value chain as a result of SDL.

## **CURRENT PERSPECTIVES ON PROCESS PERFORMANCE**

In recent years the approach to understand a company as a complex system of (business) processes has become a major instrument to solve business challenges and has improved and partly replaced the traditional function-centered approach (Rolstadås, 1995). Functional approaches highlight the organizational structure as their object for analysis. In contrast a process is “a specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs” (Davenport, 1993). Therefore process-centered approaches focus on the execution of tasks within *and* across functional boundaries. A trigger for and important contribution to the understanding and management of business processes is the work of Michael Hammer and James Champy from the 1990’s (Hammer, 1990; Hammer and Champy, 1993). Their concepts of business reengineering and business process reengineering (BPR) proposed a radical redesign of corporate processes including the improvement of time, costs, quality and service – and therefore consistently creating value for the customer. Service-dominant logic provides a conceptual framework that explains how to achieve this (Vargo and Lusch, 2004; Vargo, Lusch, Akada and He, 2008). Firms cannot create value by themselves. They rather can only make value propositions to the customer. Then value always results from co-creation in a reciprocal and mutually beneficial relationship between the firm and the customer.

Successful BPR also needs appropriate methods for designing business processes and tools for a precise implementation of the design process. The holistic enterprise system needs to be analyzed as clearly structured and process-oriented sub-systems using criteria that reflect the pre-defined purpose of the process design (Gaitanides, 2007). Achievements are made through information management/systems engineering that has developed various business processes modeling approaches. One of the leading modeling tools is the ARIS Toolset by IDS Scheer AG (Blechar, 2007; Peyret, 2009) that is based on the “architecture of integrated information systems” (ARIS) concept.

Another scientific field addressing business processes as well is marketing in the context of services management – especially with the service blueprinting method. Nevertheless exchange between marketing and information management sciences is surprisingly underdeveloped. Research in both fields is largely done in parallel and independent from each other. Both fields approach the subject from different points of view. BPM focuses on efficiency, i.e. the internal view of the enterprise and/or an integration view on Inter Organizational Systems (IOS). Service blueprinting on the other hand is focussed on the external view of the customer with the core element of improving effectiveness/service quality. We define efficiency as the internal part of performance - describing the relation between input and output from the company’s point of view. Effectiveness is the external part of performance - describing how well the company achieves customer’s requirements from the customer’s perspective (Mudie and Pierre, 2006). The high importance of customer integration into the value creation process (as seen in services) makes efficiency and effectiveness equally relevant perspectives. The combination of efficiency- and effectiveness-based approaches supports achieving a competitive advantage by creating a relatively better net utility compared to competing offerings. Thus, overall process performance is a combination of efficiency and effectiveness measures. Criteria for performance measurement have to address both perspectives. Still, their specific design and choice depends on the company’s aims that shall be achieved through an individual process. As discussed below processing time and perceived quality on the customer’s side could be such criteria.

While in information management/systems engineering the customer’s importance as an integral part of a value creation process’s performance is common, there is at the same time no process modeling method which explicitly integrates the effectiveness-driven perspective equally to the efficiency-driven perspective. With “business process blueprinting” we introduce an integrative approach by enhancing a well established process modeling tool, i.e. event-driven process chains.

## **BUSINESS PROCESS BLUEPRINTING: A METHOD COMBINING THE BEST OF TWO WORLDS**

So far methods for the organization of business processes are developed separately by the disciplines of information management and service management/marketing, each with a different point of view. Business process modeling (BPM) limits the scope on process efficiency (Laudon and Laudon, 2007). The marketing view concentrates on the improvement of effectiveness and represents the customers view in order to fulfill the customer’s expectations. The customer-related view can

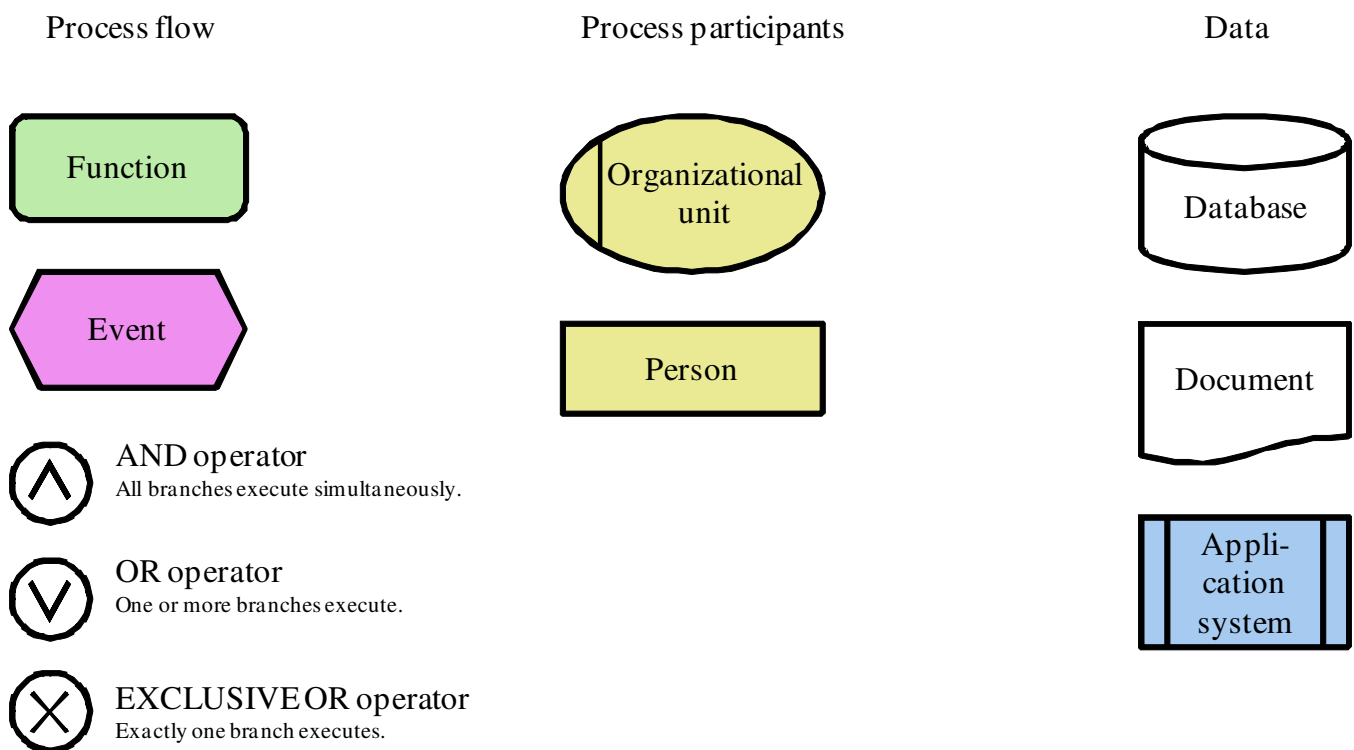
be described with the service blueprinting focusing on the improvement of perceived quality (Brady and Cronin, 2001; Parasuraman, Zeithaml and Berry, 1985, 1988, 1991; Shostack, 1982; Garvin, 1988).

The gap between those two disciplines can be covered by the BP<sup>2</sup>. By combining service blueprinting and the business process modeling both views on a process are represented. Analyzing and developing services with regard to both perspectives can finally lead to a competitive advantage (Gersch, Goeke and Lux, 2006).

In order to present the BP<sup>2</sup> a short introduction into the business process modeling and service blueprinting methodologies will be given. Afterwards the BP<sup>2</sup> itself will be explained.

**Business Process Modeling in Information Management**

In the last years the view on processes was used as a central instrument for solving economical problems. Instead of functions and procedures, the Business process modeling focuses on which process can be visualized like a flowchart with event-driven process chains (EPC). Figure 1 offers an overview of the most important EPC elements. A detailed description of the EPC can be found in Scheer (2000).



**Figure 1: Core element types of an EPC.**

An EPC consists of two central elements and additional supporting components, which are connected by lines:

- Functions represent the active element of the EPC. They illustrate a sub-process or an individual activity.
- Events are the passive element of the EPC. They represent the environmental conditions and circumstances as results of one or more activities. Events are the connecting elements between functions.

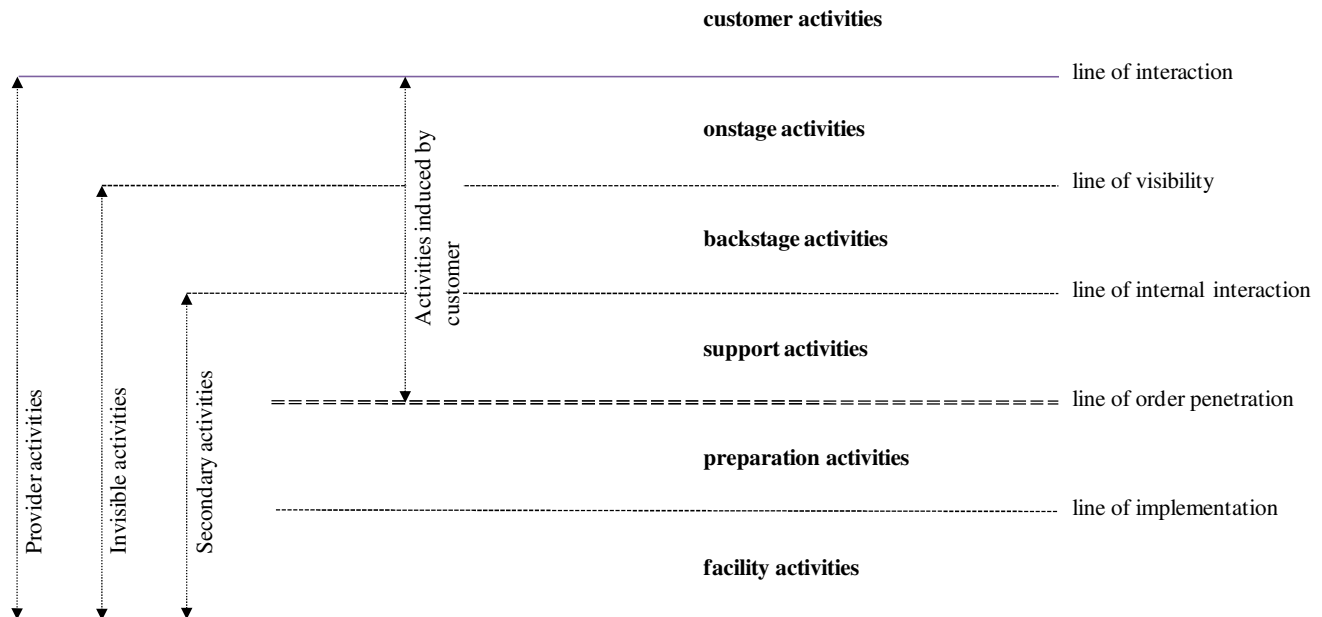
By connecting events with functions, a linear representation of the process’s sequence is generated. To illustrate complex processes with parallel or cyclic activities, logic connectors can be used. More information can be illustrated by adding further components (e.g. organization units or documents). Those elements are sufficient in order to describe a complete process.

**Service Blueprinting in Marketing**

Service blueprinting is a method to visualize service processes and was invented by G. Lynn Shostack (Shostack 1982; Shostack 1984) and subsequently developed further by various authors (Kingman-Brundage, 1995; Fließ and

Kleinaltenkamp, 2004). Service management and marketing uses it to visualize, analyze, organize, control and develop service processes (Fließ, 2009). Service blueprinting makes it possible to identify the activities which involve customers and where the interaction between customer and provider takes place (Gersch et al. 2006).

All needed service activities and therefore needed processes are placed in chronologic order on the horizontal axis of the diagram. The vertical axis is divided into six activity levels, in which the activities are arranged depending on where the major part of action takes places.



**Figure 2: Structure of a service blueprint. Source: Modified from Fließ (2009)**

- The “Line of interaction” separates the activities of customer and provider. All following lines are a further differentiation of the provider activities.
- The “Line of visibility” separates the visible (Onstage) from the invisible (Backstage) activities from the customer’s view.
- The “Line of internal interaction” separates front office from back office activities.
- The “Line of order penetration” is the dividing line between individual integrative value creation processes and autonomous supporting activities.
- The “Line of implementation” distinguishes between preparation activities, which are necessary for direct preparation of the service process, and facility activities, which integrate potential and consumption factors.

### **Business Process Blueprinting: The Combination of Both Worlds**

The BP<sup>2</sup> essentially consists of an EPC with an additional customer-related dimension. BP<sup>2</sup> provides the means for clear recognition of the points in the process, where and how customer integration and interaction between customer and provider takes place. Furthermore it states which processes are visible for the customer. Through this enhancement of the method already established marketing-methods are suitable for further analysis. By combining two approaches from information management and marketing the BP<sup>2</sup> bridges the existing gap between the two fields and incorporates the respective other point of view into their familiar perspective as a valuable aspect to gain new insights without the need to completely abandon well established constructs. Thus the BP<sup>2</sup> becomes the basis for better understanding and improved communication between marketing and information management.

Processes in the BP<sup>2</sup> are illustrated in a two-dimensional graphic. The activities are arranged chronologically from the left to the right, not from top to bottom as in a standard EPC. The six activity levels of the service blueprinting determine the vertical dimension. Each element of the EPC (functions, events, information objects) is connected to one of the activity levels according to its content. Because the BP<sup>2</sup> is an extension of EPC without changing its basic logic, it is still compatible with BPM tools. For example, it seamlessly integrates into the ARIS framework’s control view.

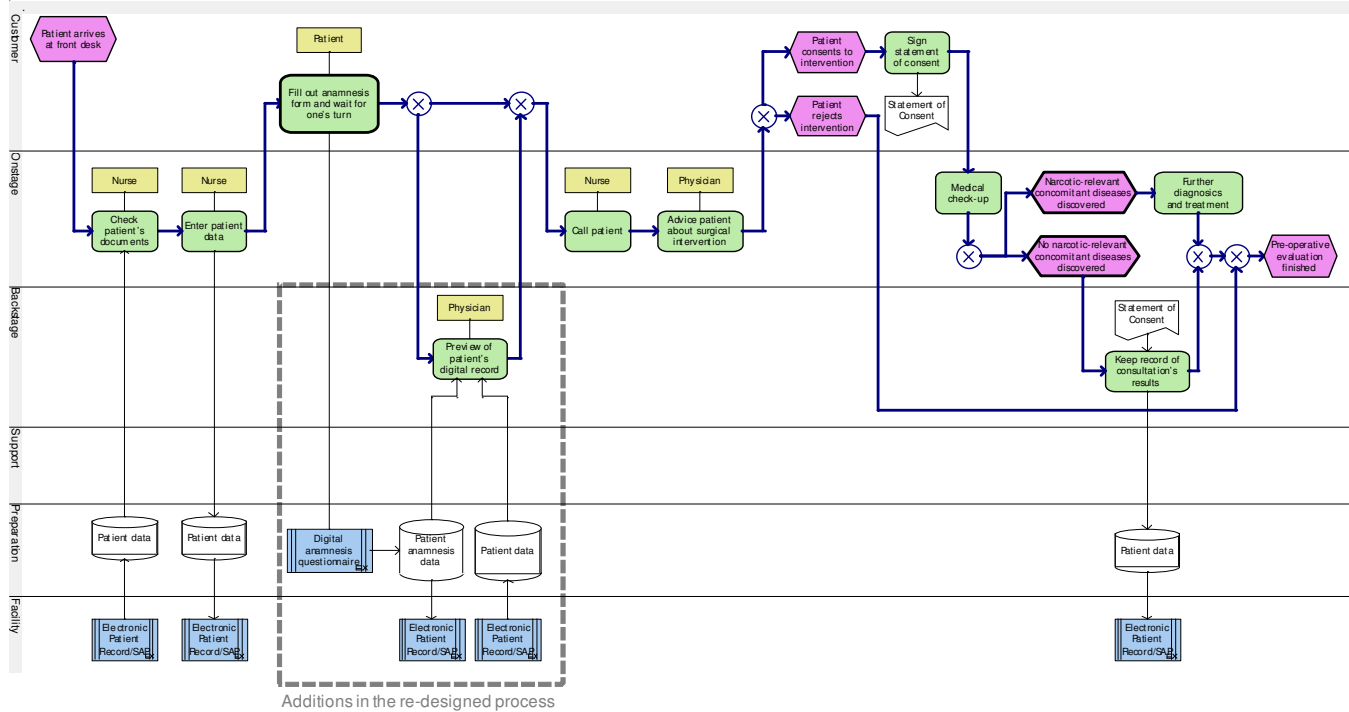


Figure 3: Use case for a BP<sup>2</sup> in healthcare.

A case study from our research projects demonstrates the BP<sup>2</sup> and shows its advantages. The sample is based on a real process. Data was collected through personal interviews and direct observations. Due to confidentiality agreements the company remains unnamed. The case setting is the pre-operative evaluation of a hospital. Prior to surgery the anesthetist interviews the patient to define the required dosage of anesthetic with regard to the patient’s medical history. The processes of the pre-operative evaluations fulfill the substantial characteristics of services like intangibility, perishability, inseparability, simultaneity and variability (Bitner, Fisk and Brown, 1993). The service offering is comparable to a consultation, which is based on specialized and specific know-how. The consultation as well as the offer of specialized knowledge can lead to a solution that is of immaterial nature and only under co-operation of the customer producible. Production and consumption of the consultation take place at the same time - the service is used up in the very same moment in which it is produced. This process is useful to demonstrate the advantage of BP<sup>2</sup>.

The task was to redesign the process in order to improve productivity by making use of traditional BPM-Tools. As we applied the BP<sup>2</sup>, we discovered that one main problem of this setting was the very long waiting time. The durations of the consultations vary which makes specific appointments hardly possible. Long waiting times lead to a low patient satisfaction. With the optimization of activities and the integration of market-focused blueprinting, both views are represented in the process modeling. This leads to the fact that the analysis is efficiency-critical and patient-oriented. Transparent representation of the processes makes it possible to formulate standards, goals and tasks for each activity. The whole process is visualized in figure 3. In order to ensure an easy understanding of the process illustration, trivial events have been omitted (i.e. events that naturally follow from their preceding function and don’t carry additional information by themselves). For example, the event “patient’s documents are checked” does not appear between the functions “check patient’s documents” and “enter patient data” in figure 3. However, this event only marks the completion of the preceding function and does not add any additional information. Thus, redundant events like this were omitted in order to ensure a concise and clear graphical display (Becker, Delfmann and Knackstedt, 2007).

The main activities of the pre-operative evaluation can be summed up in two processes: the admission of the patient and the anesthetic consultation. Both processes were registered by observing and interviewing hospital employees and patients.

The patient admission process contains all administrative activities run by the staff. It begins with the arrival of the patient at the reception desk resulting in the registration of the patient and his data. The entire process duration covers a few minutes. Afterwards the patient is asked to complete the anamnesis sheet (including questions about his medical history) while waiting for his turn in the foyer.

The main service is the anesthetic consultation. It begins when the patient enters the examination room. The physician reviews his anamnesis form. Accurate and honest answers are requirements for a proper selection of anesthetics. Further inquiry for gathering more detail information about the medical history is common. The doctor then explains options for narcotic treatments and their potential risks. Together with the patient the medic chooses the preferred treatment. Physical examinations are advised in case of hints for narcotic-relevant concomitant diseases or infants, elderly persons or pregnant women that need to be narcotized. If any related disorders are revealed further diagnostic and treatment can be necessary. If no concomitant diseases are visible, the patient has to sign a consent form for the narcotic treatment due to legal issues. In the end the patient leaves the room and the healthcare professional keeps record of the consultations' results with a standardized form for the information to be available on the day of intervention. As main process results appear the selection of narcotics, the education of the patient and the legal protection for the medicating anesthetist. The average duration of this process is about 20 minutes and can vary based on the completeness of the anamnesis form and the behavior of the patient. Anxious patients, for example, demand more time. The longest part is the explanation of the procedure and its risks as well as the further inquiry about the medical history.

From the internal view all patients get served. At the end of the day every patient is advised. But with the BP<sup>2</sup> new aspects (like customer satisfaction or loyalty) can be analyzed. In this case we found that the patients are totally displeased with the waiting time by focusing on the customer satisfaction. This had such a great influence on the perceived quality of the service, that the overall ranking was classified as "satisfactory", though the outcome quality was marked as "very good" (see Brady and Cronin, 2001 for further information on service quality). This example points out that services need to be seen as a chain of activities, in which every contact with the customer is important for the perceived quality. An isolated view on efficiency would not have recognized this deficit.

A new process design without considering the customer's view can potentially lead to decreased performance because the redesign of the process should ideally have a positive impact on both: efficiency and effectiveness. As a result of the patient interviews using the BP<sup>2</sup> the potential of digitalization of patient documents was considerable. A digital version of the anamnesis sheet could support the patient comprehension by adding more information and using audiovisual contents. The anamnesis could be more precise by specifying the questions through a multi-level query design. Further information to questions or multilingual options could lead to a better understanding. An automatic evaluation of the anamnesis sheet would be conceivable, so that a guideline is available at the beginning of the consultation. The process would be substantially shortened by the omission of the evaluation of the anamnesis sheet. A digitalization of the patient documents could also lead towards a faster retrieval of necessary information.

## **DEVELOPMENT PERSPECTIVES**

Business process blueprinting still is in its early stages of development, reflecting the basic idea of combining approaches from information management and marketing. Its full potential is unknown yet. The BP<sup>2</sup> cannot analyze all aspects of customer-oriented process design. In its current phase it can be seen as the core of a toolkit, still waiting to be developed in future. This future toolkit can provide additional instruments to address a variety of different specific (research as well as practical) questions. The BP<sup>2</sup> appears to be a method to structure processes appropriately and to reveal key points in processes (where deeper analysis with additional tools seems most beneficial). Based on the improved awareness of the customer's point of view, research is needed to support the integration of well-established marketing methods like the analysis of customer satisfaction or willingness to pay. Furthermore service blueprinting lacks a more detailed specification of criteria to structure activities and sub-processes in the appropriate activity levels. Considering the aspects we have discussed so far, two major interrelated themes for further development seem most promising.

### **Enhancing Existing Cost Management Tools towards an Integrated Process Results Management**

Established BPR approaches like ARIS support an evaluation of process performance by implementing cost management tools, usually in the form of process costing. Their main goal is to find a time and cost efficient process design which then determines the design of business processes including type, location and number of customer contact points. This strong focus on costs and the treatment of the customer's perspective as a dependent variable conflicts with the requirements of integrative processes. As shown with our case study the BP<sup>2</sup> supports a specific redesign of a process to improve customer satisfaction. This is a first step on the way towards determining reservation prices for alternative process designs in addition to already existing cost management. Thus it would solve the problem of a too strong focus on costs alone when evaluating a process's performance.

BP<sup>2</sup> provides an enhanced view on performance. Before the main question was which costs a customized product/service causes. Now the main question could become how high total contribution margins are for various process designs. This

necessitates an analysis of revenue. One possible approach could be a Conjoint Analysis to identify how many different customers or customer groups are willing to pay for which process designs.

As a result there is not only one single time and cost efficient process design - but a variety of process designs and respective total contribution margins, tailored specifically for different individuals/customer groups.

Enhancing current cost-oriented methods with these revenue-oriented elements would provide real added value for designing economically advantageous processes. This would also be an important step towards an integrated performance management that takes both the supply side (costs) and demand side (revenue) into account. In fact the BP<sup>2</sup> provides methodological support for categorizing sub-processes depending on which side is of higher relevance for this specific sub-process. Sub-processes located in activity layers above the line of visibility can be assumed to be of higher importance for the effectiveness-oriented perspective, because on those levels direct customer interaction takes place. Sub-processes below the line of visibility aren't directly perceived by the customer. According to this the efficiency-oriented perspective can be the focus. This already takes into account, that effectiveness is only necessary to some degree in order to avoid a negative impact of those sub-processes' outcomes on customer contact and usage processes.

### **Coordinating Traditionally Autonomous Usage Processes**

More comprehensive interpretation of process performance is a key factor for the establishment of successful value chains. However, the integrative value creation process - ending with the buying transaction for a product or the completion of a service - is only one of all relevant processes that comprise the selection, decision, creation and usage processes involved in value creation. The utility expected by the customer usually emerges after the traditional value process has ended. Accordingly subsequent usage processes significantly impact process performance because they are a key part in shaping the customer's overall satisfaction.

Nonetheless, research efforts both in marketing and information management have mostly focused on a detailed understanding and design of provider processes so far. This focus has neglected to recognize usage as an equally important part of overall value creation. This is partly explainable with the difficulty of gathering data about those processes - they are autonomously performed by the customer. The provider has in general no instruments to observe them. This situation is rapidly changing due to new developments in information technology. Especially the (mobile) internet provides new possibilities to analyze, influence and shape usage processes. The core question is: who may be in a position to shape and coordinate usage processes on demand side? Two main alternatives seem conceivable: the delegation of tasks and sub-processes from provider to customer, known as "externalization", and the delegation of tasks and sub-processes in the opposite direction, from customer to provider, known as "internalization". Necessary sub-processes need to be performed by different players in addition to a successful overall service and also seek coordination within one main process.

Providers need to extend their process-related analysis to develop a new and enhanced understanding of process performance, amongst others including the following aspects:

- Usage processes that used to take place beyond the providers perception need to be analyzed in greater detail and the findings will have to work for improved future offerings.
- Usage processes on the demand side need to be influenced aiming to support these originally autonomous processes. Moreover a guided re-design of the overall value creation process would help to improve efficiency and effectiveness. These benefits are subjects to reallocation processes and may be distributed symmetrical or asymmetrical between involved parties.
- The original provider is offered the chance to open up new potentials of value creation. At the same time he is threatened by new players (3rd parties) challenging existing structures of value creation and distribution by developing independent offerings to provide coordination of usage processes for the customer. The added value - as a result of improved efficiency and effectiveness - is competed for not only by the original provider and customer but also between the original provider and a 3rd party as well as between several 3rd party providers.

Customer contact points are the interface between provider processes and customer usage processes. Because the BP<sup>2</sup> emphasizes the management and evaluation of provider-customer interaction, it can become a conceptual basis and practical framework to influence usage processes and so to enhance performance measurement.

### **CONCLUSION**

Recent developments like service-dominant logic open up new perspectives on value creation processes and highlight the need to integrate methods from different scientific fields. At the same time new technological possibilities lead to an even



stronger transformation of familiar types of value creation by recognizing that value creation also happens beyond the boundaries of the firm – in usage processes that used to be coordinated autonomously by the customer.

In this paper we have addressed these issues by introducing “business process blueprinting” (BP<sup>2</sup>), an approach that not only combines methods from marketing and information management to possibly bridge the gap between the scientific fields. It also provides the conceptual basis for further developments with the goal of enhancing the understanding of determinants and influences on process performance. Most promising for further research seem the two aspects of including revenue in addition to costs into process performance management and analyzing usage processes as an integral part of value creation.

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