

## White Paper

# Transition of the Mindset: Business Processes Meet Business Services

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Humankind has been aware of business process since the first civilizations. Since that period the definition of the term 'business process' has changed several times. Nowadays, we use a definition that was first formalized for a manufacturing production by Adam Smith (1776) when he described separation/division of labour in a pin factory. The power of a business process was recognized in sequencing activities and repeating them for gaining the same result. In the 1980s of the last century, an extension of business process methodology into industries outside of manufacturing became obvious; it accelerated into the first decade of the 21st century.

The word 'process' has a certain magnetism – it is used everywhere in business and technology irrespective to its applicability; people believe it is a shame if one does not have a process, he or she does not know how to work. Well, is this true? Is everything we do a business process?

Business processes are not always simple even for process-centric specialists, especially if it is not as straightforward as manufacturing and the process logic has to consider numerous alternative possibilities. As a result, only 'sunny day' actions are usually designed with accuracy, leaving us unprepared for the challenges of a not-so-perfect world. This also shifts our attention from what we do onto how we do it; how to manage deviations of the process to minimize their impact on the results. The process becomes the purpose of work regardless of its result.

While a business process is a great help for operational activities, it also can be a great obstacle if applied stubbornly, simply because it worked before. Indeed, "before" we worked in a different business execution

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context and had different goals; without special feasibility studies, there are no guarantees that the business process used before is the right way of doing the job nowadays. Moreover, we know that a lot of our activities are not pre-defined, ordered and repeated, i.e. they cannot be embedded into a business process.

In contrast, we recognize business service as the fundamental instrument for conducting business of any kind. Being serviced is not a privilege of external customers of a company - everyone in a company services everyone else. Business service allows those who are in need to get access to either business capability or to the results of business capability execution.

Customers of a business process do not see process internals but do care about the results. These results are exactly the value of business service – how the results have been created is immaterial for the customers. If the business service is realized properly, there should not be situations where a customer becomes a mediator in resolving internal issues and conflicts of the business process.



**TIP:** *Not everything we do in business is a business process – not everything has a predefined logic, may be repeated and, even if repeated, provide the same outcome as before.*

In this White Paper, we will demonstrate to business process managers, designers and business organization planners that the meta-models of business process and business services are the same from the outside-in view and that a behaviour of a service may be realized as a behaviour of a process. As a consequence, we argue that every business process is a business service to its customers. This simple but cornerstone statement is powerful enough to shift the mindset of Business and Solutions Architects who have to solve business problems of the modern dynamic business environment.

## **Understanding Business Process Internals**

In literature, we can find numerous descriptions and classification of processes, and many of them can be confusing. An example of an opposition of client-facing processes to supporting processes becomes almost classical. Yes, the client-facing processes sell the final business value, but it is apparent that without supporting processes no business value can be created, i.e. there is a certain portion of business value that should be attributed to the support processes if we want to be objective. Also, several operations/actions may be utilized in both client-facing and supporting processes – how should we classify those operations?

Let's see if we understand what a business process is. First of all, a business process is a process; if you disagree with this, you do not need to read further. Assume we have an Activity 1 and an Activity 2. If they are taken together, do we have a process? - Evidently, no. If we add an Activity 3, do we have a process? - No, again. The majority of authors we know mention that the process is "a structured, measured set of activities" [3] where "activities play a key role in the process definition". That is, in our assumption we missed one element – a structure, i.e. an order that the activities have to follow. If we have only one Activity 1, is this a process? - No, because there is no structure or order. Thus, a process requires a) two or more elements and b) an order or structure of execution of these elements. Going forward, we will see if these elements are activities.

Here is another case: we have an order that states that Activity 2 should follow Activity 1 if the results of Activity 1 are THESE. We have made the order conditional. If we prohibit conditions in moving from one step of the process to another, we will remain with primitive processes only: no condition – no branches, error handling, alternative paths, choices, not even sub-processes.

Of course, we allow conditions. The surprise to process-centric specialists may be in that the process logic (with conditions) is recognized as a first class citizen while the activities per se become the second class citizens. It is not easy to undermine the role of activities – we liked them, we started with them, but we also generated a new self-contained value that can become a stand-alone entity – the process logic; it abstracts activities into SLAs and interaction interfaces regardless of whether we like it or not.

See for yourself: you have ordered a basket of food from the grocery; you went through the process containing a step for placing the request, a step for paying for it and now you're in the step of waiting for the delivery. Tell yourself, honestly, do you care how this basket would arrive – by track or by bike? I think that you are interested in the result only, as you did in each previous step. Who accepted your order and how they processed/verified your payment was immaterial.

Altogether, this means that if you have (own) the process logic, you can hire any arbitrary provider who can respect your SLA and deliver you an intermediary or final results. In other words, the particular activities that produce agreed results are not important for a process movement. Webopedia confirms this perception of process saying that "[business process] refers to the amalgam of all the separate steps toward the final business goal" and the work of Rummler & Brache, [1] adds: "a business process is a series of steps designed to produce a product or service." Another issue is the quality of those results, but this is a different topic that we discuss later on.

We have found a few discrepancies between the aforementioned conclusion and a classical design methodology of a business process [2], which comprises the following characteristics:

- The goal of the process
- Collection of actions
- Metrics for the process, which minimally should include
  - Timeliness
  - Efficiency
  - Quality
- Feedback loops
- Triggers
- Necessary inputs and its frequency
- Outputs
- Tools
- A process owner
- A team of process workers.

Also, it is believed that a process can contain sub-processes. This model cascades down to the last action level.

It is quite indicative that classical process design does not mention the fundamental characteristic of a process - the business logic; if it is not a mistake then it is a misunderstanding of what a process actually is. As we found earlier, there is no need for a process to contain its actions, some of which may be sub-processes, unless it is a political matter of control and ownership.

Another typical omission in the listed characteristics is the contract between process customers and the process provider or owner about different constraints, conditions and expected results, i.e. an omission of setting a Service Level Agreement (SLA). Unfortunately, the people responsible for a business process are interested mostly in the course of actions, and only remember about the process customers at the very end of the course.

Although we are familiar with characteristics of business process, we still have no measures that allow us to distinguish one process from another. Obviously, the first candidate for the role of a discriminator is a process' business goal. Well, the same business goal may be reached by different processes. The input information, activities and initiating triggers are the next candidates. None of them are necessarily unique to a particular business process; the same relates to an SLA, tools and people (process workers), though this fact is not apparent to many people working with/ in the business processes. Thus, the only reliable discriminator is the business logic, i.e. order and conditions applied to the process steps. If we change the business logic of the process, we change the core that constitutes the particular process. Having the same goal, different business processes can compete in effectiveness and efficiency.



**TIP:** *A business process is a process that consists of steps driven by business logic or business rules. Only process logic differentiates one process from another. If this logic changes, we have a new process.*

Fortunately, there is an emerging movement in business process design and management pioneered by Forrester Research that tries to restore the priority of customer interest in the process realm. This is also called an ‘outside-in’ view on a process. The challenge is in the balance between customer-centric and process-centric priorities. If the customer-centric view prevails, this can have two consequences:

1. Every step (which is supposed to add value) in a process should be validated not against the process goal, which was set some time ago, but against the customer’s needs of today, and these needs tend to change more and more frequently, leading to the continuous creation of new and better processes.
2. Process activities and even process logic will lose their importance (not value), because a customer is generally not interested in how things are done if they are delivered as promised. This is a natural service-oriented approach, which hides implementation even if it is a process.

We can summarize: a business process is a process that consists of steps driven by business logic or business rules. Process activities and workers are important for the quality of the process outcome, for its efficiency, but are invisible to the process customers. Improvement of the business process means replacing one process logic with another, i.e. creation of a new process. A process outcome may benefit also from the improvements of quality of input data and intermediary results, i.e. quality of activity execution. Nonetheless, activity providers exist outside of the process. A duty of the business process management is in reducing undesirable deviations in the execution of the process logic and in finding providers of the intermediary results of high quality.

## **Capabilities of Business Service**

Traditionally, business executives use the term ‘business service’ as an offering of the enterprise capabilities to external customers. In contrast to popular opinion, business capability is not what the company does, but what it can do in certain circumstances. This is about the functional capabilities of the company.

In many cases, a business product is interpreted as an offered business service, although a business service may include one or several business products. We do not distinguish between services and products in

this White Paper. This is a simplification but it helps us to see that when an enterprise manipulates business functionality in order to serve customers, internal business cases and processes operate in the background as service or product implementations.

Following OASIS SOA RAF specification [3], we can formally define business service as the following:

*a business service is understood as a collaborative combination of manual, semi-automated and fully automated actions performed by people and machines aimed at providing certain business functionality and reaching certain business values and Real World Effect (RWE),*

The Real World Effect<sup>1</sup> is:

*a measurable change to the state of pertinent entities, relevant to and experienced by specific stakeholders or participants of an ecosystem (society or community).*

A business functionality is realized via a business service that utilizes available resources – internal and external – in a manner transparent to its customers. An RWE is a complex matter. It includes a result of the service execution, which may be a product. This result may be returned to the services customer and also may be visible to others. Business service in an enterprise has many links and relationships that are not obvious at a glance.

Business services use business and technical resources that they usually do not own. This assures a high level of flexibility of business service – it can work with any resources that meet the service’s requirement and can be contracted. Therefore, service management and governance, including its contractual relationships with resource providers, are very important aspects of the service life cycle.



**TIP:** *Business services use business and technical resources that they usually do not own. This assures a high level of flexibility based on engagement of alternative resource providers.*

A manager of a business service has the task of providing certain business functionality to his or her company and, respectively, to customers, external or internal. Since a business service is a complete self-contained business operational unit that can function on its own (in cooperation with other business services if needed), it can be realized

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<sup>1</sup> Represented definition of RWE is in line with “Reference Architecture Foundation for Service Oriented Architecture”, v. 1.0. OASIS, SOA Committee Specification Draft 03, Public Review Draft 02, 06 July 2011, p.37.



in an enterprise as an internal or external actor – and, whichever one is more efficient, inexpensive, or convenient will get its customers. That is, a business service in a company works in constant competition with analogous services outside of the company.

Business service transparency throughout an enterprise is the precondition for robust business capabilities that are so valuable to customers. The ability of a business service to resolve its business tasks and problems, by itself or with assistance from other business services, is the most important business capability of the service-oriented ecosystem.

## Service Orchestration as a Process Model

Before starting the discussion in this section, let us share our understanding of the term 'process model'. Here is a definition of a 'process model' from Barbara Pernici's 'Advanced Information Systems Engineering': "*Process models are processes of the same nature that are classified together into a model. Thus, a process model is a description of a process at the type level.*" [4].

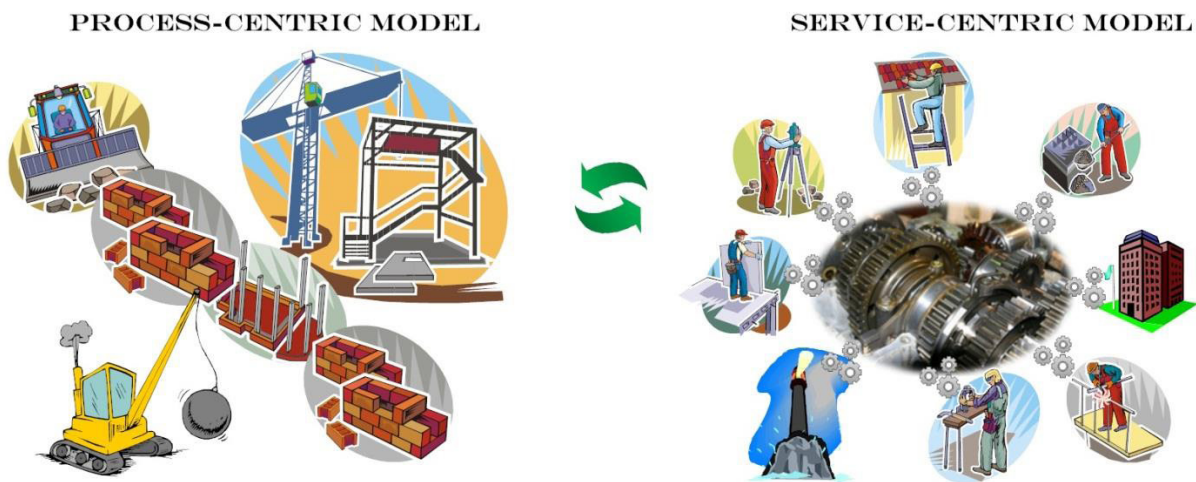


Figure 1

Frankly, we find it a bit difficult to follow the aforementioned definition because it is unclear what the 'same nature' means, why the processes classify together and how, and why such grouping is called a 'model' instead of a 'classification'. We assume that any classification is based on at least one unique characteristic of a process. Let's review given classifications or process 'models'. We have learnt that the process does not care about how (activities) and who provides its input and intermediary information. This means that an Activity-oriented process is pointless – activities are irrelevant to the process. Then, if a Product-oriented classification type tries to tell us that a particular process is oriented to achieving process' result, it would be interesting to know which process does not have this objective. Moreover, if a process is created for and used in Product A, why can another product not use

the same process? We believe that Product-orientation is not a special characteristic but rather a matter of current process affinity and naming convention.

If we imagine that a Decision-oriented process type exists, we have to admit that some processes may not be decisive-oriented. How do such processes work (with no decisions on which step to execute next) at all and are they really processes? Finally, if a process logic is independent from the process execution context, we deal with an immutable process whose initial value degrades every minute because every minute it detaches from the reality more and more. So, a Context-oriented process type is a type of process designed properly, nothing more.

Whether a process is strategic, tactical or ad hoc depends not on a process itself but on the use of the process. We have also concluded that a process cannot be flexible (a change in business logic constitutes a new process) – this is exactly the thing that many BPM specialists fight against. So, out of aforementioned types, the only classification by granularity makes sense. However, we do not have an objective or common criteria for measuring process granularity, i.e. this classification is useless outside of the ownership boundaries.

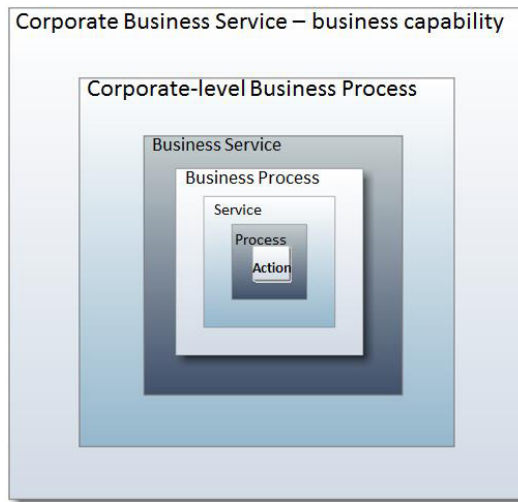
Although discussed process classifications bring no business value, the notion of a process model is important as the driver and backbone, which is used during the process creation. We think that several process models exist, but all of them have at least one commonality – they share the same meta-model comprised of the following characteristics:

- Goals
- Objectives
- Inputs
- Outcomes/Real World Effect
- Internal business logic (or orchestration/invocation logic)
- Input interface
- Output Interface
- Triggers and internal events, and event notification.

The process meta-model includes internal elements visible only to the process workers/participants, and external elements visible only to the process customers.

Process workers/participants deal with all details of process execution including process inputs, process business logic, process step tasks and internal process events. Internal and external elements of a process interlink at the process interfaces. An outside-in view on a business process cannot differentiate this process from a service - they appear interchangeable and inclusive to the external viewers as shown in Figure 2.





**Figure 2**

If we take an inside-out view of service, we can see a process logic with steps and their tasks known as a service orchestration – cooperation of efforts of other invoked services. As we noticed before, a single step (action) does not constitute a process; the same relates to services – a service that invokes one other service does not form an orchestration. Any process may be converted 1:1 into an orchestration and vice versa. Service orchestration works exactly as a process with only one contrast – an orchestration explicitly defines a role of conductor, i.e. the logic holder.

The major difference between the use of a process vs. service is in that not all actions (intermediary value providers) used by a process can be processes of their own – some of them are simple actions, i.e. services. Service orchestration uses services only, simple or combined. That is, service orchestration is a consistent homogenous model while the process model is heterogeneous, i.e. may be inconsistent. Nevertheless, any process model may be realized as a service orchestration or as a federation of service orchestrations.

## **Every Business Process is a Business Service**

A few years ago saying that a business process is actually a business service was simply rebellious. Many still think that business service is a 'sweet' for external customers only and the people who work in a company should not even dare to be serviced. At the same time, there are trading, marketing and customer support divisions that require services from other divisions, e.g., IT, HR, and Finance. This situation is a sample of business ambiguity that hurts business itself and obfuscates the picture of how business really works.

Even more, many have noticed that C-level executives and senior managers use a term 'business capability' instead of 'business process'. The reason for this is that those managers operate with abilities to realize and offer certain business functionality, i.e. business services, to the customers. The service-based view abstracts the process and, because

of this, appears more convenient for such operations as planning, analysis, and re-organization because it is free from the process' details. Even more, if a business process may be automated, it disappears from the management radar but related business functions and, correspondingly, business services stay regardless of its implementation.

If we welcome innovations, we have to know what the things are, not what they are supposed to be or how we have to talk about them under the pressure of 'political correctness'. Therefore, when we work with business processes (not for the business processes), we have to admit that from the business value perspective:

*“Every business process is a business service;  
the opposite is not true”.*

Dr. A. Samarin, an expert in business process management, says about the term 'process':

“... in real terms:

1. All processes are services
2. Some operations of a service can be implemented as a process, and
3. A process includes services in its implementation”. [4]

If you say 'business capability', you are talking about a business service. If you mean an ordered sequence of actions and call it a business process, you are talking about an implementation of business service. This, nevertheless, does not degrade an importance of business process because its accuracy impacts the quality of the service outcome. If the quality of service is poor, the service risks losing its customers in spite of how perfect its interfaces are.



**TIP:** *Every business process is a business service; the opposite is not always true.*

When one thinks about processes 'in services', the whole picture becomes more dynamic. Services offer a recursive model of business functionality utilization and focus on the outcome. Services do not own invoked services (aka sub-processes) and can be easily recomposed to adopt a business change. If everyone in an enterprise is a customer of services, this will change the corporate culture from an orientation into the process, into delivery of the quality outcome from every step of service implementation.

When an enterprise shifts its collective mindset from process to service orientation, everyone becomes a service provider and, simultaneously, a service customer. People know that “what’s going around, is coming around”; if everyone in the company serves his or her coworker, the service to the company’s external clients will improve dramatically, it is a fact of life and not a theoretical perception.

## Conclusions

In this White Paper, we reviewed the definition of business process, its fundamental characteristics and attempts to classify them. We also reviewed the meta-models of business processes and business services, and found that they are very similar. We noticed that combined services, which are service orchestrations, are the form of business process and vice versa. Depending on the viewpoint, an enterprise appears as a structure of services or processes and they are not mutually exclusive.

Analyzing the differences between an approach to business processes at the top management level of the company and at the middle level of the same company, we have recognized a cyclic inter-transformation between business services and business processes as shown in Figure 3. We also noticed that only business services/capabilities are situated at the top and bottom levels of this structure.

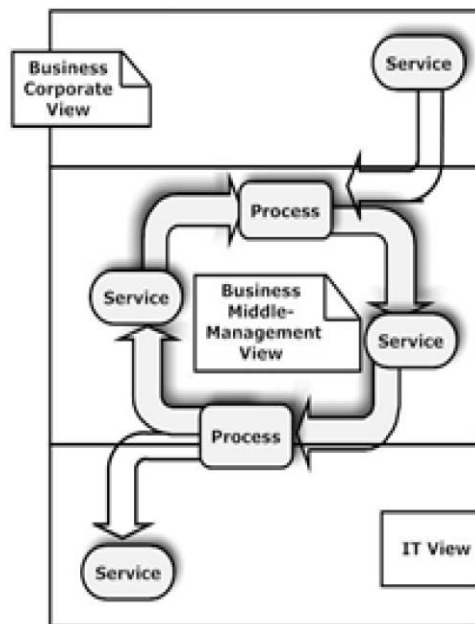


Figure 3

An operational model of an enterprise in terms of processes-services may be represented as shown in the diagram in Figure 4. It is impossible to select and segregate a layer of business processes from a layer of business services. Moreover, the same business service may be used in the super- and in the sub-process at the same time.

Business process and business service are two sides of the same implementation of business functionality. Each side has its advantages for certain tasks. However, the side of business processes needs to

possess the same level of flexibility as the service side, which is possible only if the mindset of process designers and process workers becomes service-oriented.

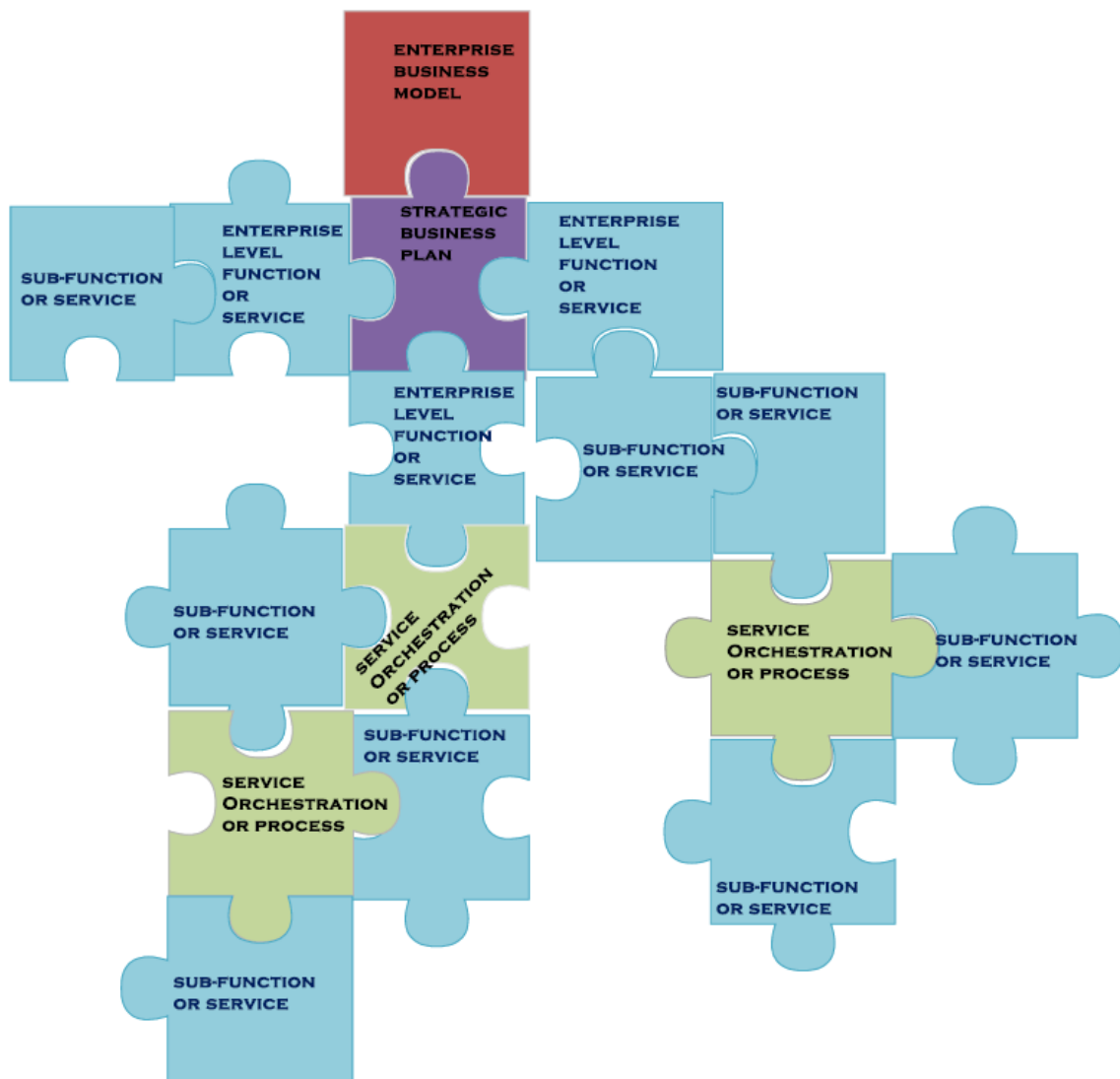


Figure 4

## Resources

- [1] Geary A. Rummler and Alan P. Brache, "Improving Performance: How to manage the white space on the organizational chart". Jossey-Bass, San Francisco, 1995.
- [2] Michael Poulin, "Architects Know What Managers Don't", ISBN 978-0-9575199-0-9, BuTechCon Ltd., 2013
- [3] "Reference Architecture Foundation for. Service Oriented Architecture Version 1.0. Committee Specification", v. 1.0. OASIS, SOA Committee Specification 01, Dec, 2012. Online resource: <http://docs.oasis-open.org/soa-rm/soa-ra/v1.0/soa-ra.pdf>
- [4] Barbara Pernici, "Advanced Information Systems Engineering", ISBN 3-540-64556-X, Springer-Verlag Berlin Heidelberg, 1998

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