SOA is an approach to design and modularize business applications in a way that those modules can be reused as services based on service level agreements. This allows aligning business with IT in a more efficient way from an organizational and IT perspective.

Executive Summary

Business and IT Executives are increasingly recognizing SOA Architecture as one of the critical success factors in helping a business achieve its goals. Today’s business pressure is requesting an open, scalable and easy to manage infrastructure.

The open question is where to execute SOA as an approach to introduce it systematically into the company and what the benefit is you can get out of it. Since the SOA approach is not only targeting one specific area, many Stakeholders are included into the decision of using SOA as approach or not and how to start.

This document is an introduction to get a better understanding what the value drivers for SOA are on the specific levels of involved departments and how this value can be measured.
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1 Introduction

1.1 SOA and SAP

Service-oriented architecture (SOA) is designed to enable the rapid development and adaptation of innovative business processes in pace with changing business requirements. SAP adds considerable value to SOA by delivering ready-to-execute software for business processes, reusable enterprise services that enable business process steps, and the technology to compose and deploy software that supports flexible business processes. By enabling organizations to implement and adapt business processes with unprecedented speed and ease, SAP helps companies attain the strategic agility and enhanced collaboration capabilities they need to more easily achieve their business objectives with SOA.

SOA closes the gap between business and IT, providing IT with the ability to create and adapt business processes at the speed of business change.

1.2 SOA Value Argumentation

SOA is a discipline which is not only targeting technology but also targets business process and strategy pain points. The problem is that different departments have to talk about the benefit of solving the pain point going with the SOA approach. With the SOA approach, the solution being built brings over the solution lifecycle additional effort than going with standard approaches. To enable all the involved project parties to talk together about the value SOA adds to the project, the Value Argumentation was created.

In this document, a framework will be provided with value drivers for SOA implementation and prerequisites to get the value of those drivers.

1.3 Involved stakeholders and benefits from SOA approach

As shown in chapter 3.2 there are several possible SOA use cases, which are of benefit compared to standard approaches. Additionally this also shows that there are many different Stakeholders involved in a project with SOA relevance. The decision on whether to go with SOA or not depends on one side on the benefits of a SOA approach and on the other side on the company strategy from a business and IT perspective. As will be shown in this document the benefits are mainly depending on the maturity of the company.

In Figure 1 the different levels of involved Stakeholders are shown and their different benefit criteria. Those benefit criteria categories are drivers for SOA as an approach too.
Business Strategy in this document is more referring to drive the company’s business model towards competitive advantage. That means not only decisions being executed within the next 5 to 10 years will be considered but also short term decisions which will drive the company during the next years going with overall business trends and ensuring the survival of the company. To make it easier, on this level the competitive advantage themes and the business model is defined. Mostly the Cxx roles are acting on this level.

Process and Organization describes the mid level execution of the business trends and business pain points. Those Pain Points need to be broken down into high level E2E business process descriptions. When starting to think about how to implement those E2E business processes several drivers should be taken into consideration. On the one side the strategy of the company is important, on the other side SOA also could bring advantage for this implementation. Acting on this level does not mean that a strategy for the implementation of business processes and the structure of the respective organization should not be taken into consideration. Even on this level a strategy is important and can be mapped into the overall business strategy.
**IT Management** is the discipline of implementing the requirements of the business strategy and the business process and organization. Questions to be answered are which tools should be used to implement the requirements and what the respective application architecture is. Event on this level a strategic thinking is necessary too. Those strategic considerations can be also mapped into the business process and organization strategy and the business strategy.
2 SOA Value Model

2.1 The SOA Value Model

As shown in the introduction there are different levels of SOA benefits derived of SOA use cases. All those levels have a short, mid and long-term approach.

By analyzing about 100 SOA projects and a deep dive research into cost and benefit value drivers of SOA implementations this SOA Value model was derived. The research showed that most of the SOA benefits are dependent of other value drivers. If those correlations are brought together into one model, three dimensions describing the relationship of the value driver and how those drivers can be measured are identified.

The three dimensions are the maturity you need to have at least, the level of the company of getting benefit and the benefit itself. In chapter 1.3, the different levels of the company have already been introduced. In Figure 2 the value model is shown with all value steps. In this paper only the first level will be described.

Figure 2: The realization of the value potential depends on the maturity and business level
2.1.1 SOA Maturity Levels

The model in Figure 2 introduces the maturity and time on the x-axis. A research on SOA maturity models used in the market and own experiences with customers lead to a maturity model shown in Figure 3. To understand the maturity model, the perspective on the view to the maturity model is important. As assumption to make it easier, every company, which is adoption SOA, will run through the levels 0 to 4. How long each phase will take in this adoption process depends on how the adoption is driven.

In the context of the Value Model, on each level of the SOA maturity, the benefits will shown and why the next is implemented. Interesting when analyzing this model is, that getting the most benefit from SOA in level 4 needs a companywide strategically driven approach. A more detailed description will be provided later on.

<table>
<thead>
<tr>
<th>Level</th>
<th>Theme</th>
<th>Description</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – Understanding</td>
<td>What is SOA?</td>
<td>Initial learning phase. Customers are trying to understand what SOA is, what it takes, what can be achieved and how it relates to current plans.</td>
<td>Looking for Business Case</td>
</tr>
<tr>
<td>1 – Introduction</td>
<td>How do I do SOA?</td>
<td>Introducing SOA via pilot projects as proof of concepts. These are often highly managed projects with a specific scope to reduce the risk and ensure quick wins.</td>
<td>Address Specific Pain Point</td>
</tr>
<tr>
<td>2 – Spreading</td>
<td>Which do I do as SOA next?</td>
<td>At this level customers define more and more SOA projects. They spread the skill set and experiences gained in earlier projects and increase the reach of SOA with each new project. Hence methodologies become more critical.</td>
<td>Process Integration</td>
</tr>
<tr>
<td>3 – Exploration</td>
<td>Why not SOA?</td>
<td>Customers are facing to manage the fast growing quantity of SOA projects. Standards, processes and organizations play a vital role to consolidate the different experiences and approaches and to build a common behavior across the enterprise.</td>
<td>Process Flexibility</td>
</tr>
<tr>
<td>4 - Plateau</td>
<td>How do I optimize SOA?</td>
<td>Reaching this level means to shift the attention onto optimizing all aspects of SOA. Practices and reuse benchmarking as well as change management become critical.</td>
<td>Continuous Adaptation and Evolution</td>
</tr>
</tbody>
</table>

Figure 3: SOA Maturity Levels

Understanding the concept of SOA in **Level 0** is the initial phase to get familiar with the SOA approach and what it means to my company. Since this phase will have no influence as benefit to my company yet, this phase will not taken into consideration by this model.

Addressing and solving specific pain points are describing **Level 1**. This Level uses the technology part of SOA to solve very specific pain points and provides a proof of concept for the SOA approach. The benefits SOA will bring at this level are shortterm oriented.

After proofing the SOA approach, **Level 2** looks at where to introduce SOA to spread the experiences within the company. From a time perspective, this means that the solution is short- to midterm oriented.
To reach **Level 3** and getting flexibility from SOA also from a Business Process and Organizational perspective additional effort needs to be invested.

Once the previous level is reached, in **Level 4**, all aspects of SOA can be optimized now.

### 2.1.2 SOA benefits

On the y-axis in Figure 2 the benefit of solving the pain point with SOA will be shown. Benefits of SOA can be split into quantifiable and qualitative benefits. All quantifiable benefits of the Value Model come with a KPI how to measure the benefits. Qualitative benefits help to understand what kind of additional benefit could be achieved. But measuring the benefit, especially from an SOA perspective, is not easy and therefore makes no sense to measure in this context. In some cases it could be possible that a qualitative benefit can be measured.

In Figure 4 the framework of the St. Gallen Study is shown which combines the SOA benefits and the SOA costs for a holistic view. The Value Model will only focus the SOA benefits with their respective maturity levels and how to reach the next level of adoption because costs are custom.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-time / ongoing benefits</td>
<td>One-time / ongoing costs</td>
</tr>
<tr>
<td>- Cost savings / efficiencies</td>
<td>- SAP TCO model</td>
</tr>
<tr>
<td>- Revenue increase</td>
<td>- Composite application development costs</td>
</tr>
</tbody>
</table>

#### Business and Strategy Execution

- **Business Process**
  - Strategy
- **Composites / E-to-E Process Integration**
  - Enterprise Services

#### SOA Technical Infrastructure and Organization

- **IT Productivity**
- **Technology Foundation**
- **Organization**
- **Organization**

→ Business driven approach covers **IT centric approach**

---

1 Source: St. Gallen Study
Costs are varying on every implementation even if the same activities have to be executed on different projects. One reason could be that investing in training of resources is different in the projects because of different starting points of the skill sets.

One interesting question is “What are the additional costs of an SOA implementation compared to a non-SOA approach?”. By reading this question it seems obvious that it is a problem in doing this calculation of two different approaches for the same pain point to get valid data.

2.2 SOA benefits when starting with SOA

When starting with SOA projects in terms of this value model, the first maturity is Level 1 (see chapter 2.1.1).

Figure 5 shows an overview of the first level of maturity with the value drivers for the three layers.

Figure 5: First maturity level and the benefit categories
2.2.1 Reach this level

Reaching this level means that at minimum one aspect of the SOA approach has been understood. This could be neither the business nor the IT aspect. Usually customers start with the IT aspect and realize the business aspect and advantage after end of the project.

Collaterals which help reaching this step are
- Starter Kit for Enterprise SOA
- SOA Book
- SDN Community

Links to those collaterals are provided in the appendix.

2.2.2 SOA benefit for enterprise Strategy in the first level

In business today, companies need to be able to adapt their own business processes, as well as the processes that span the business network, without disruption. This business network transformation requires not only a flexible IT landscape that integrates disparate applications, but also use of industry standards, even down to the most detailed data elements, thus allowing partners to collaborate with agility. Successful trading-partner collaboration is the basis for increasing efficiency and responsiveness in day-to-day business. If all partners speak the same language when communicating with each other, that drives additional benefit across the entire value chain. With the definition of globally accepted industry standards by industry bodies and their user communities, the necessary prerequisite for a common language has been established.

SOA brings value to Business Network Transformation from the technology side of the approach with a standardized technology for data exchange. All partners in the network are able to implement their interfaces independently because the semantically description of these are standardized as well. This also means that interfaces once implemented can be reused for other partners. The benefit can be accomplished fast with short implementation lifecycles. SAP helps leveraging this network collaboration by providing a reliable platform being used by the Business Suite too.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Business Network Transformation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>SOA makes it much easier to integrate with third parties, e.g. suppliers (vendor managed inventory). Also integration with the customer is accelerated. This results in new revenue or higher profit through cost reduction by a new business model in a transformed Business Network.</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
<tr>
<td>Measurement</td>
<td>- Increased revenue * margin</td>
</tr>
<tr>
<td></td>
<td>- Shortened integration time of partner in days * (margin of collaborative business engagement per day + cost of integration per day)</td>
</tr>
<tr>
<td></td>
<td>- Cost reduction (e.g. production, distribution costs etc.)</td>
</tr>
</tbody>
</table>
Faced with heightened competition, senior executives require enterprise IT that can provide an agile and reliable technological environment – an environment that can substantially improve competitive **Agility** and enable the organization to rapidly adopt **New Business Models**. Agility at this level of maturity means enhancing the products and services with SOA capabilities. Mostly this is also technology driven SOA which later turns out to be an innovation of the business model too. But also easy communication with users and applications by leveraging existing infrastructure opens new perspectives on this value driver.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Agility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>Ability to provide additional Services and Products. Strategically plan Business Model towards changes.</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
<tr>
<td>Measurement</td>
<td>Additional Revenue</td>
</tr>
<tr>
<td></td>
<td>Increased margin from new business</td>
</tr>
</tbody>
</table>

### 2.2.3 SOA for Business Process and Organizational Management in this level

Nowadays customers invest in buying new products to create business value and competitive advantage by streamlining, optimizing, and fundamentally changing how they do business. This is the essence of **Business Process Productivity**. But rather investing into new business process capabilities, the productivity of existing processes can be leveraged by providing a **Simplified User Interface**. This reduces the complexity of IT, so that virtually no training is required to operate these. Based on model driven techniques this can be done at an affordable cost.

To do this efficiently SOA provides a non proprietary and interoperable access to data. The access however means multiple media, ranging from mobile, RFID to voice recognition. User interfaces are separated from process runtime technology.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Business Process Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>Build custom and user specific UI instead of the full loaded but efficient transactional standard UI's. This leads to less user training and can be used for more users as well.</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
<tr>
<td>Measurement</td>
<td>- reduced user training costs</td>
</tr>
<tr>
<td></td>
<td>- increased time to bring new resource to production</td>
</tr>
<tr>
<td></td>
<td>- outsourcing of non key user processes</td>
</tr>
<tr>
<td></td>
<td>- new user group directly participating in process</td>
</tr>
<tr>
<td></td>
<td>- less process errors and therefore less process support</td>
</tr>
</tbody>
</table>
Beside the aspect of optimizing business processes to be more collaborative, faster and easier, to utilize the **Business Process Quality** becomes more important. One reason is that because of the increased collaboration the data support needs to be improved to keep or increase the process productivity. On the other side, beside the operational level, decision support or business intelligence (BI) becomes more important. For BI the data quality is important. At this maturity level, *Less Data Errors* can be reached by integrating additional applications and users into the business processes by standard interfaces with good data quality.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Business Process Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>Well-defined interfaces, standard based access for users, applications and better process visibility lead to increased process quality with reduced error rate and faster process execution time.</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
</tbody>
</table>
| Measurement               | - Reduced costs in trouble shooting and exception handling (Reduced amount of errors/exceptions x costs per error/exception)   
                           | - Reduced Quality Assurance efforts                                                     |

To optimize the company’s performance, critical **Insight** from company data to employees and management drive towards reaching business goals. A centralized strategy and infrastructure for managing disparate information is necessary to allow fast and targeted decisions. By using the technology part of SOA, *efficient and role specific dashboards* can be built provided on different platforms like Widgets, Mobile or Mail Reports. The data is provided in *real time* by those dashboards. Data can be provided in a *consistent and integrated* way with *standardized interfaces*. 
### Solution Insight

**Short Description**
Complete and correct sets of data through encapsulation of data into ONE unique Service (E.g. 1 Customer data service instead of several Customer Databases in each system leads to a full 360° customer view) Less data collection & reporting effort due to multi-source data/info, improved basis for faster and better decisions by accurate and real-time data/info shareable across Value Network, …

**Prerequisite**
SOA Overview – Level 0

**Benefit Lifecycle**
Short

**Measurement**
Generic:
- FTE efficiency increase in dedicated business process/functional area
- Increase efficiency by eliminating redundant, labor-intensive data collection, consolidation, and reporting tasks

Case specific:
- Higher cross selling volumes: additional product/service sold in existing customer base * product/service margin
- Reduction of days sales outstanding
- Increased customer loyalty due to single view of customer

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2.2.4 Improvement for IT Management by leveraging SOA in this level

The technology infrastructure in most organizations has been put in place to meet business needs occurring at different points in time. Extracting most value out of historically large technology investments through **Application Lifecycle Extension** is of high priority on the agenda for IT Management. New investments into state of the art business processes like 24x7 self services require a portfolio management for reliable legacy applications. To leverage those previously taken investments for new applications by encapsulating the legacy application into services which then can be used by new business processes. This also helps migrating into a new and more flexible application environment step by step instead of a big bang approach.

### Solution Application Lifecycle Extension

<table>
<thead>
<tr>
<th>Short Description</th>
<th>Cost avoidance of new applications due to extended application lifecycle by wrapping of legacy functionality and reuse in new business processes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
<tr>
<td>Measurement</td>
<td>(License/development costs of providing functionality by a new service) minus (license costs of legacy software + Cost of capsulation old code in service)</td>
</tr>
</tbody>
</table>
Development Efficiency can be mainly split into 3 dimensions: tools, architecture and resources. All need to work together to achieve development efficiency in terms of developing a best fitting solution to the requirements in short time with good quality by using resources and existing architecture in a perfect manner. For development efficiency Tools need to be streamlined supporting the implementation based on the SOA Methodology. Additional they should also support working with Meta Models like Business Process Management instead of pure coding. Existing Architecture needs to be leveraged so that for additional collaboration and integration projects existing applications and hardware can be reused. This could be different e.g. if proprietary technology is used for connectivity. Because of the foundation of SOA based on standards legacy Resources can be reused like .NET developers.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Development Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short Description</td>
<td>Standardization makes integration of Applications faster. Standard tooling and methodology leads to minimized coding, pattern based development etc. which then leads to shorter project time and lower project costs, less testing costs due to reduced dependencies. Standards in architecture and technology also allow a more flexible use of resources.</td>
</tr>
<tr>
<td>Prerequisite</td>
<td>SOA Overview – Level 0</td>
</tr>
<tr>
<td>Benefit Lifecycle</td>
<td>Short</td>
</tr>
</tbody>
</table>
| Measurement    | - Percentage of overall development costs  
- Cost reduction per Function Point  
- cost saving reuse of existing legacy resources instead of buying consultant expert services  
- cost saving of architecture reuse and no necessity to start an architectural project to fit the architectural requirements  
- cost saving of additional architecture operations |
3 Examples for the SOA Value Model

3.1 Best approach to SOA

A study conducted jointly by SAP and University of St. Gallen, Switzerland, concludes that business-driven SOA initiatives deliver results superior to those of technology-driven SOA initiatives. The study also concludes that success in SOA projects requires the alignment of IT with business. SAP acts upon this conclusion by providing SOA-enabled solutions, complete with industry-focused enterprise services and a design-time process that pave the way to accelerated SOA adoption. Built-in design-time best practices shorten the SOA learning curve and help companies consolidate and govern IT along business priorities as well as optimize IT operations without disrupting the business.

Enterprise services make it easier for companies to achieve their goals of strategic agility, differentiation, and accelerated growth. SAP is committed to helping customers achieve these goals faster through SOA-enabled business software solutions and a rich set of enterprise services for a wide range of industries.

3.2 Typical use cases for SOA

The following abstracted use cases illustrate how SOA can help companies address priority issues with unprecedented ease through connectivity in Business Networks, simplification and data insight, landscape modernization, and collaboration.

3.2.1 Connectivity in Business Networks Use Case: Inventory

Out-of-stock situations cause customer dissatisfaction and lost revenues, especially for retailers. An SOA-based information system can connect retail locations, enabling employees to check in real time whether the requested item is still in stock so inventory can be shared “on the fly.”

SOA helps companies leverage the connectivity provided by enterprise services for business processes at Internet speed.

Challenge: Out-of-stock situations, especially for high-margin items with low stock levels, can cost a considerable amount of time and money and often require a cumbersome and time-consuming manual process to resolve. Reports used in the process may not contain the most up-to-date data, causing additional errors that require manual approaches to resolve, such as phone calls, faxes, or on-site visits. In addition to lost revenue, out-of-stocks can damage a company’s reputation. The respective Business Trend is called Business Network Transformation.

---

Objective: The objective is to overcome the lack of reliable information and enable access to information about the availability of items across retail locations. The business case for an IT solution is driven by the need to keep popular items available in spite of low inventory levels, to reduce the workload of and the pressure on employees, to minimize reporting and inventory errors, and to eliminate the cost of gathering and maintaining redundant data.

Solution: Enterprise services can provide any-to-any connectivity at the store level on a variety of different devices, including handheld devices that can read and process data from RF tags. When employees in inventory, sales, and customer service can access the same information through a role-specific interface, they can quickly and easily get to the information they need for the specific step in the sales and service process. In addition, employees can be alerted proactively when in-store stock levels fall below a defined threshold.

Benefits: When store employees have real-time access to current inventory information across all retail locations, they can respond to customer requests and provide superior service, which improves customer satisfaction and retention. In terms of system maintenance and change readiness, enterprise services can provide a much more flexible and cost-effective approach by replacing numerous application interfaces with a single, easy to use interface.

3.2.2 Simplification and Data Insight Use Case: Master-Data Entry

In many companies, the creation of new master records is a slow, cumbersome, and error-prone process. Let’s consider the creation of a master-data record for a new supplier – a common process across many industries. It starts with a purchasing agent who delivers the new supplier’s information on a piece of paper to a clerk who enters this data into a software application. Then a power user may validate the data and cross-check it manually against other applications to see if there’s a duplicate record anywhere in the system. Let’s see how a composite application can help bring a new supplier’s master record online in minutes, reduce the need for manual intervention, and increase data quality.

SOA helps to reduce complexity, enabling companies to “take the fat” out of business processes and make them faster.

Challenge: In our example company, multiple back-end applications and databases resulted in a data entry process for master data that was complicated and time consuming. In addition, it required a small group of highly skilled and highly trained “super users” to enter and validate master data. Information about new suppliers came to these power users in a variety of ways: e-mail, spreadsheet, Word file, or phone call. Typically the information was incomplete and didn’t match up with what the software application required. Delays occurred when super users had to contact the originator of the information to get the missing information about a new supplier. Additional process steps, such as checking for duplicate data records, further delayed the availability of new supplier master records across the company’s business units.
Solution: A composite application provides simplified, role-specific user interfaces that help to improve the speed, quality, and consistency of master record creation. This approach moves the data entry process from super users in the back office to purchasing agents in the front office. To improve the speed and quality of the data being entered, simple role-based user interfaces can help. Designed for ease of use, each interface provides exactly the view of the data that the purchasing agent needs to enter. Data entry fields (such as address, phone number, and bank details) are self-explanatory and don’t require additional on-screen help, documentation, or training. The role-based interfaces access data in a single unified master database, so there’s no need for employees to manually check for duplicates. Now power users are available to handle exceptions and perform other value-added activities.

Benefits: Role- and usage-specific interfaces reduce the skill and knowledge needed to enter supplier master data. Automatic checking and built-in rules catch errors when they occur, which means that the master data entered is accurate from the start, eliminating major problems down the road. When a purchasing agent has a question, the exception-handling workflow automatically alerts the power user, who can step in and research and resolve the problem. In addition, the cross-media usage of services (online, offline, mobile, portal, B2B, voice, and so on) eliminates information disconnects and provides a high degree of collaboration.

3.2.3 Landscape Modernization Use Case: One Face to the Customer

Mergers and acquisitions are a fact of life. What is also a fact is that the acquiring company must decide what to do with duplicate as well as unique product lines brought into the mix by the acquired company. Often the acquiring company wants to keep acquired product lines alive while extending the reach of its sales operations to increase its win rate and to achieve significant growth at home and in emerging markets. This challenge is faced by companies in most every industry – including manufacturing, consumer products, high tech, insurance, banking, professional services, and communications.

Using SOA, service execution can simply be rerouted when applications are consolidated or retired.

Challenge: In this example, let’s consider a midsize supplier of cosmetics and hair care products that acquired a former competitor in a neighboring state. The acquiring company wanted to achieve quick time to value before the start of the holiday season and leverage synergies immediately. In addition, the company wanted to consolidate and update its IT environment without impacting customer-facing processes.

Solution: Using a composite application, the company created a portal that enabled sales reps to sell from the product lines of both companies, even though the product data is physically stored in two different systems. The semantically abstracted enterprise services on which this composite application is built enable the user-facing functionality to “sit on top” of legacy IT landscapes in the short term while these two are being consolidated in the long term.

Benefits: Customers experience one-stop shopping and can talk to one sales rep. This approach increases customer retention, shortens the sales cycles, and reduces the cost of sales. A single easy-to-use interface eliminates the need for additional employee training and cuts down on order-entry errors. On the IT side, the SOA-enabled solution can be reused following the consolidation of the IT infrastructure, reducing total cost of ownership.
3.2.4 Collaboration Use Case: Self-Service

Government agencies at all levels – national, state, county, and city – are looking for ways to improve the delivery of services to their constituency while reducing administrative costs. Pressured by work schedules and stymied by limited service hours and distance from government service centers, citizens often neglect to apply for licenses and permits, such as animal licenses, fishing and hunting permits, and home improvement permits, resulting in lost revenue for the affected government agencies. In response to this challenge, government agencies are providing self-service Internet portals that enable citizens to process applications online, check the status of applications, and receive licenses or permits. Filing out an application involves the same sequence of steps, making this process a prime candidate for enterprise services.

**SOA delivers self-service processes that cut administrative costs across functional and company boundaries,**

**Challenge:** As citizens of a city, state, and country, we are familiar with the process of applying for a license or permit. An applicant appears at the government office and fills out a form. An agency employee checks the information provided on the form and hands it to another employee who is responsible for entering the data into a standalone software application. The applicant returns home to wait for the permit, but instead receives a letter from the agency requesting additional information. Eventually the applicant receives the license or permit. However, in many instances, citizens take the risk of paying a fine and simply don’t apply for the necessary license or permit.

**Solution:** When an agency has a portal, whether on-site in a kiosk or available via the agency’s Web site, an applicant can fill out an application online. An enterprise service can populate the form with data about the citizen from the agency’s database. Standard data validation routines check that all the required data has been entered, and the data is correct. Another service can process online payment of the fee for the license or permit. Depending on the type of permit, the applicant can print the permit immediately or the agency can perform additional steps and either e-mails the permit as an attachment or sent the permit by physical mail.

**Benefits:** Citizens and agencies benefit from this approach – as does the environment. Citizens save time and money by not having to travel to the agency or waiting to receive a permit. Agencies can reduce or redeploy staff, trim administrative costs, and earn more revenue. An easy-to-use online process and immediate results encourage citizens to comply with regulations rather than risk fines.
4 Appendix

4.1 Outlook
The Value Model introduced in this paper will be validated by further researches and enhanced with best practise findings.

4.2 Further Readings
SOA Book
St. Gallen Study
SAP Starter Kit for SOA