

# The SOA Magazine

## Feature Article



### Defining Operational Services: How SOA Can Help Realize a Role-Based Organization

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*Abstract: In this article we introduce the operational service, a conceptual service that represents a certain type of business activity that can be performed by a human or an automated system. We explore various additional types of related services that can be used to support the operational service and to further position the tasks represented by operational services with the ultimate goal of establishing a role-based organization wherein roles correspond to the humans and systems responsible for carrying the operational service tasks.*

*We begin by presenting the corporate or business perspective of SOA and how it relates to creating value for the enterprise as a whole. We then extend this discussion to include business services, channels for providing business services, business processes for executing business services, operational services and processes for supporting business processes, and (mostly importantly), the role-based organization that performs operational services.*

*Please Note: This article is primarily intended for business analysts and is therefore focused on conceptual business services that represent business activities or tasks. This is not the common manner in which the term "service" is used from a technical aspect when carrying out an SOA project. The services described in this article are not services that are modeled, designed, and then delivered via a typical SOA project. They are conceptualized prior the actual service delivery lifecycle. If you are a technical IT professional, you may find it easier to substitute the term "service" with "task" when reading about corporate business services and operational services.*

### Introduction: Corporate Business Services and the Operational Service

The foundation of a business is to build and grow its assets. From a corporate perspective, business services are the interfaces between the corporation as a legal entity and all the other stakeholders the entity deals with when running the business. We'll refer to this category of services as "corporate business services".

Corporate business services are essentially responsible for delivering, receiving, and trading assets with outside entities such as users, customers, employees, suppliers, investors, and regulators. We'll call these external entities "service recipients". A corporate business service can represent an activity or a function designed on behalf of the corporation and provided to external service recipients.

Corporate business services are explained in detail in our previous article [REF-1]. See Figure 4 in this article for an illustration of how they relate to service recipients.

Having corporate business services defined and managed is not enough for the enterprise to start rolling out an enterprise-wide SOA. Behind each corporate business service is a business process that drives the delivery of the service to the recipient. It is important to note that interfacing channels exist to engage corporate business service recipients and that both people and IT systems are involved in completing business processes (Figure 1).



*Figure 1: Servicing channels as conduits for delivering corporate business and operational services orchestrate all aspect of enterprise operations.*

There are two ways to trigger a business process: via a request-for-service message from a service recipient or by an internal channel, such as a timed event. When dealing with a service recipient, there might be a cross-institution protocol that guides both parties to complete transactions step-by-step. The compliance to that protocol is also built into the internal business process for the relevant business service.

The operational service represents a specific type of business service. Each operational service executes a particular activity in a business process. Operational services span across all business operations (such as manufacturing, finance, sales, and most relevantly, information technology).

Operational services represent operational tasks and activities and can be assigned to independent owners or custodians. A sound approach to incorporating operational services is to establish a layer that encapsulates these services so that they can be independently defined and managed.

If operational services only exists within existing enterprise systems (such as ERPs and CRMs) they can become tightly coupled with these systems. As a result, they becomes inevitably hard to change.

If we view operational services as atomic tasks, we can consider how the enterprise as a whole can be collectively conducted by operational services. This perspective can lead to a paradigm shift to a role-based organizational model where each job assigned to a role corresponds to the task of an associated operational service.

What's significant about the role-based model is how the assignment of roles is carried out. Essentially, anyone that can perform a given operational service activity can be assigned to the respective service performer role.

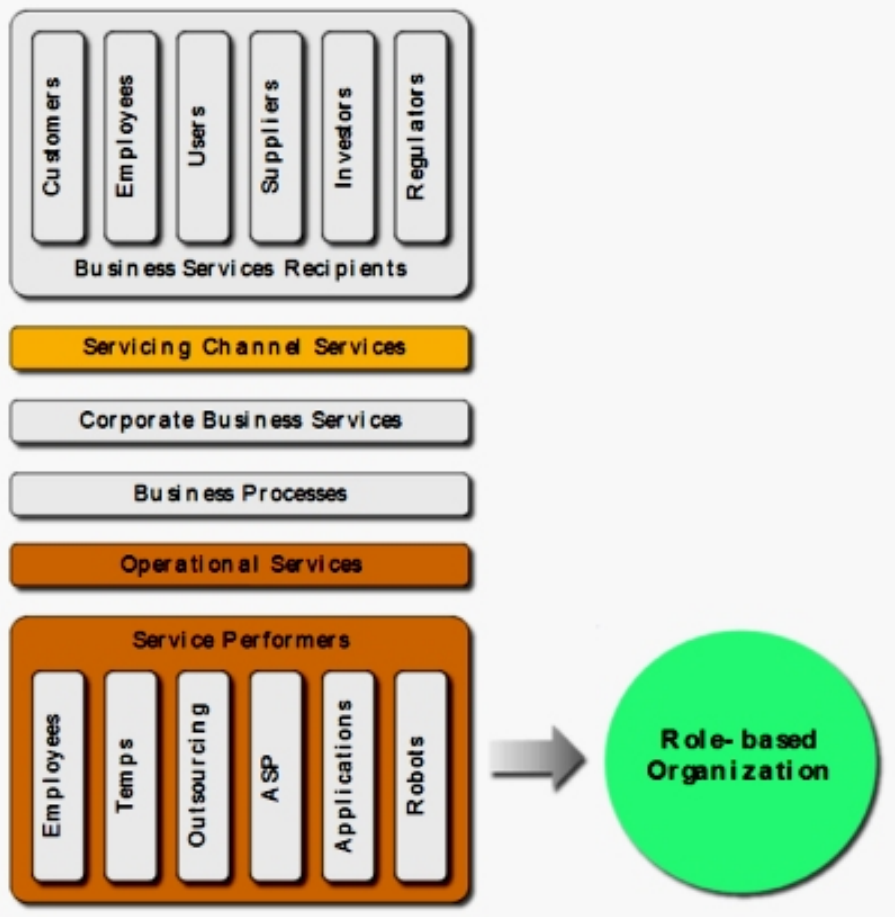


Figure 2: A complete corporate service delivery chain model.

Once this new service-driven framework (Figure 2) is well understood, IT roles and responsibilities become just a subset of the organization. The continental divide between IT and non-IT domains of an organization can be bridged. So far, only SOA technology and a solid, supporting infrastructure can make this grand service-centric enterprise paradigm feasible.

## Servicing Channels

Servicing channels form the conduit for the enterprise to offer corporate services to recipients. They are operated by a special type of operational service called the "servicing channel service".

There are two types of channel services:

- **Human Direct Channel** - The business service recipient interacts directly with the human channel service performer (e.g. cashiers, sales representatives, bank tellers, etc.).
- **Human Indirect Channel**. This is the type of servicing channel that is still attended by a human in an indirect way, such as through phones in real-time corresponding, or via the Internet (e.g. CSRs for call-centers, on-call stock traders, Web-entered trouble-ticket handlers, etc.).

Under the unattended channel category, there are two further types:

- **Real-time Interactive Channel** - Most enterprises have already been providing self-service channels through the Internet. In this case, the channel service performer is a computer system (e.g. internet banking services, automatic service kiosks, ATMs etc.).
- **Correspondingly Communicative Channel** - This type of channel corresponds with recipients in a conversational manner. The business transaction is conducted through an asynchronous messaging system (e.g. email, SMS, postal services, etc.).

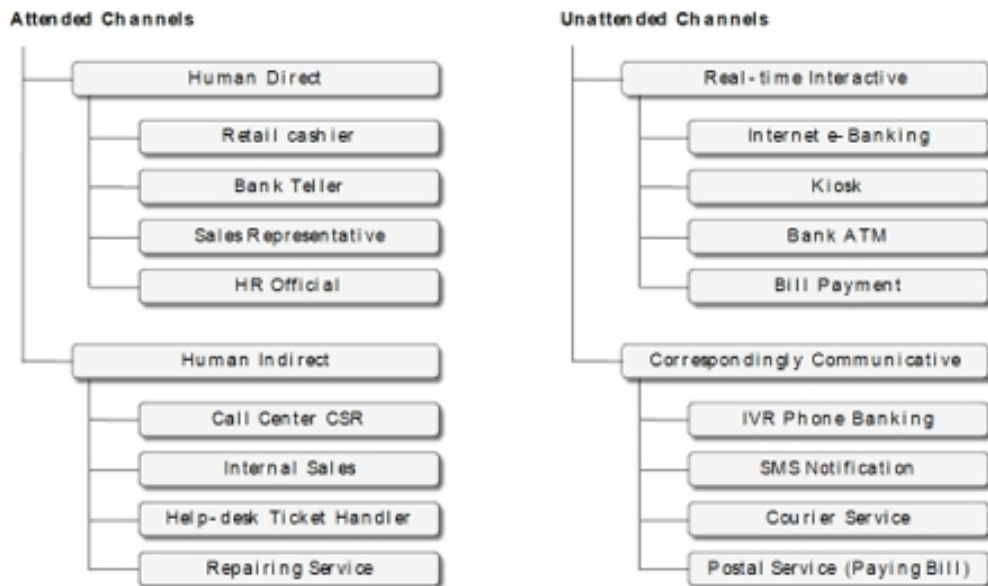


Figure 3: Servicing channel classification and examples.

## Defining Operational Services

Within an enterprise, any identifiable task or activity that is atomically owned by a human, or an IT system. The following, for example, can be considered legitimate operational services:

- Tasks and activities that are an integral part of the business processes driving corporate business services.
- Tasks and activities outside of corporate business services that are integral part of the business processes for driving other operational services.
- Composite tasks and activities that drive business processes.
- All routine and recurrent tasks and activities required to operate the company.

In this sense, operational services not only represent the triggered activities from a recipient, but also include internally-triggered activities, such as IT infrastructure planning.

Below are some further guidelines and considerations for defining operational services:

- The conception of a business process must be independent of existing and future IT systems or enterprise applications. This way, it is a business decision as to whether an operational service has to be created when defining a business process.
- SOA technology makes it possible to associate a human or system to perform an operational service. For the sake of business continuity, such performer role assignments can be switched on the fly.
- The operational service is performed purely on behalf of the service performer, whether it is a human or a system. This is in contrast with a corporate business service that is always performed on behalf of the corporation.
- The service recipient is always the corporation, meaning that every performer is making a contribution to the same legal entity (the organization itself).
- Performance of the operational service can be evaluated through its effectiveness in the business processes it contributes to. It thus provides metrics for validating its existence and level of granularity.

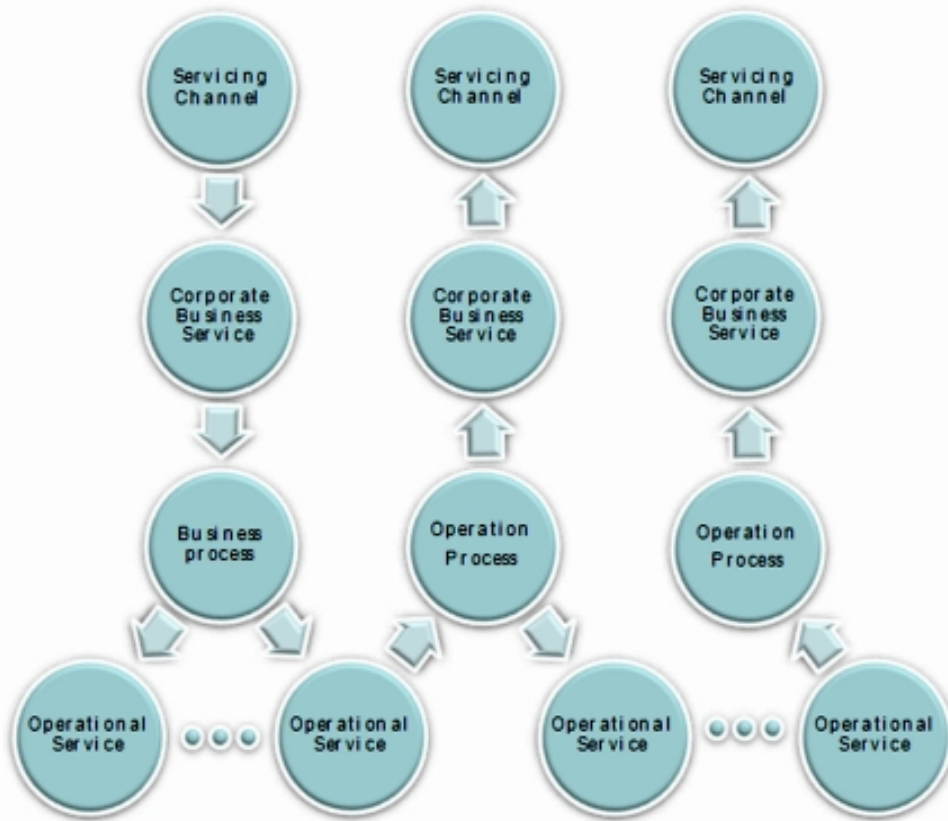


Figure 4: Servicing delivery control flow.

As shown in Figure 4, the servicing channel service (introduced in the previous section) is a special kind of operational service tasked with facilitating the delivery of corporate business services to recipients. The "legal" performer of a corporate business service is the corporation itself, while the facilitator performing that service is the performer for the servicing channel service.

Figure 5 further illustrates the service delivery chain and relationships among all of the elements described so far in this article.

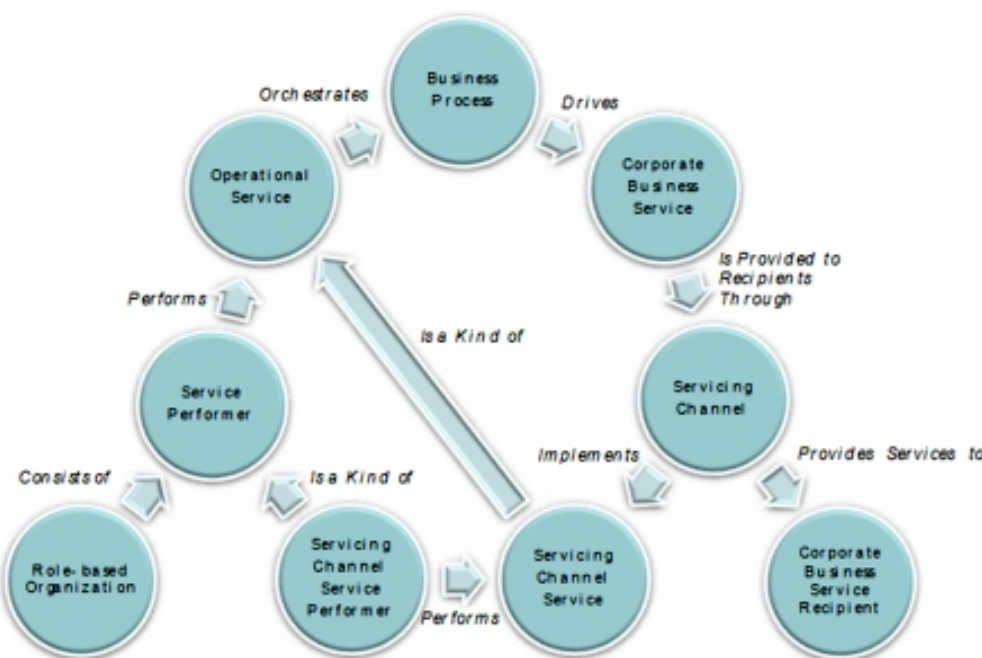


Figure 5: A servicing delivery model.

Note that an operational service can be further classified as a terminal service when it has a corresponding performer role in the organization and when it has an assigned owner. Alternatively, it can be considered a composite service that drives another workflow when it consists of other operational services.

As with any new practice introduced into an enterprise, corporate business services need to be well organized and managed. The tool used to manage corporate business services is generally referred to as a business services management (BSM) application. Users of this tool are usually executives that manage the services via a dashboard. However, it is up to IT to build, procure, operate, and maintain such a tool.

Its usage should be simple, while still allowing for integration with the SOA implementation and service-enabled enterprise applications that can automate the execution of the business processes, measure business service performance in real-time, and alert the business when risks hit thresholds. It is via this integration that IT can better align itself with the business.

## **The Role-Based Organization**

It is the demand for service performers that drives the need for a purely role-based organizational structure to support business operations. People have noticed that the conventional enterprise organizes people into a hierarchical or mesh structure based on job descriptions, salary scales, reporting lines, or employee skill-sets.

There are two common ways of structuring business units and roles in such a hierarchy. One is to scope the work for a functional unit and define a position for hire with the experience and skill-set needed to complete the work. The other is to create a departmental organization for available employees. The purpose of this is to figure out how to better utilize these employees. Either way, the organizational charts in most cases mingle the roles with people so each constituent is depicted as a rectangular box with a person's name associated with a title or vice versa.

The downside to the conventional organization model is that it is not in synch with the business. It is simply too rigid and ad-hoc from a macroscopic point of view. It can also be overly dependent on people that are mentally and physically limited, it can be too slow to change, and it can also make it difficult to leverage IT technology advances.

A solution to overcoming these challenges is a top-down approach that follows the definition of corporate business services, servicing channels, business processes, and operational services. This collectively organizes the operational services' performers into a role-based organization.

In this case, the organizational structure is the natural outcome of both corporate business services and operational services. Its constituents are service performer roles where each performs a specific service. Each role's job description matches up with each operational service function.

The agility in role assignment reflects the agility of the business. It is normal to have some roles assigned to humans and others to computer systems. This way, the operational organization is no longer identical to the employee organization.

The benefits are obvious:

- Roles assigned to human performers can be replaced by automated systems to lower costs and increase scalability and productivity.
- Roles performed by computer systems can also be taken back by humans when there is an opportunity for functional enhancement or to keep the business running when systems have outages.
- Roles can be assigned to employees, contract workers, or out-sourced staff.

## **A Process for Defining the Role-Based Organization**

The previously described top-down organization can be defined by following these steps:

1. Define corporate business services as well as servicing channels for delivering them.
2. Use KPIs to measure the corporate business services.
3. Define operational services (including channel services) and the performer roles behind each service.

4. Organize the performer roles based on business processes. Use the KPIs for each business process as the performance measure.
5. Each time refinements and improvements are applied to corporate business services, operational services, or business processes, ensure that organizational adjustment is a subsequent outcome of the service and process improvements.
6. Assign a human or an automated system to every service performer role. This can result in a many-to-many relationship where an individual can be trained or a system can be programmed to perform multiple tasks.
7. Measure a performer's effectiveness by assessing the aggregated results of all roles it has been associated with. (An organizational group is measured by the performance of all the business processes it has been in charge of.)

Only service-oriented computing can make this new type of role-based organization a reality. Why? Because the assignment and re-assignment of roles are all managed by BSM. Switching from human performer to a system performer is simply a manner of activating a service on an "SAAS-nized" enterprise application, while switching back from a system to human performer involves just a few steps to deactivate the application's function.

This type of role-based organization helps leverage the benefit potential of SOA projects, and has the following specific advantages:

- It is results-oriented.
- It is agile because re-organization can be conducted easily and at any time.
- It guarantees business continuity because a succession plan can be made and easily maintained.
- The performance measurement is focused on the core business that can be constantly and automatically monitored (via BSM features) with high accuracy.
- The performance measurement is business process-centric (via BPM and BAM features) with medium accuracy.
- Human performance measurement becomes more of an HR issue.

## Conclusion

Having IT tools to enable the enterprise to focus on corporate business services ensures its operations will continually be optimized and non-disruptive, and further allows for the dynamic alignment of human and automated resources with conceptual operational services. This allows an enterprise to maximize its potential and gain unmatched productivity, while also positioning it as an organic part of the overall organization. The result is a robust bridge across the long-standing gap between IT and business. The enabler to establishing this bridge is SOA.

*Disclaimer: This article is purely based on the author's personal research. It is in no way associated with nor sponsored by Google. The information and statements contained in this article are collected from public sources and merely reflect the author's personal choices and opinions.*

## References

[REF-1] "[Defining Business Services – SOA from a Corporate Perspective](#)" by Robin Chen (The SOA Magazine, Issue VIII, June 2007)

