



# Introduction to Event Driven SOA

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Service-oriented architecture (SOA) has gained acceptance as a way to solve the enterprise application integration problem. After more and more adoptions on SOA by enterprises, some companies like Oracle and Gartner introduce Event-Driven SOA as the “next generation of SOA”, which combine the event driven architecture to SOA. In this document, we introduce what Event Driven SOA is, and explain why Event Driven SOA arrives at the scene. We also cover what new requirements are generated by Event Driven SOA compared with SOA 1.0.

## **What is Event Driven SOA?**

Event Driven SOA is another trend for the SOA development. It is also called SOA 2.0 or Advanced SOA. The main idea is to introduce the event driven architecture into the SOA environment.

## **What is Business Event?**

Business Event is any notable business activity that affects your business. When thinking of an event, the user should more focus on what event is meaningful to the business, rather than how the event should be handled. As we don't think about the logic behind handling the event, an event describes the business activity need the company has to deal with.

An event can be either triggered by an external party, or by an internal system itself. An example of an event triggered by an external party is receiving a new sales order. For an internal event, an example can be a deep discount sale on a specific product initiated by the sales department.

When an event occurs, there may be more than one handler that handles the event. For example, when there is a change address request by a citizen, different departments of the government may handle the change of address in different ways, as different departments may have different storage mechanism for the citizen's address.

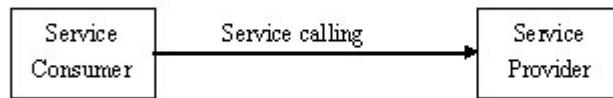
## **What is Business Service?**

Business Service is the logic that handles your business need. It is provided by the service provider and invoked by the service consumer. When designing the service, the focus is different from that of identifying an event. The main focus on designing the service is on providing the necessary logic to meet the business need, from the provider's perspective. Business Service can be a composition of other services. In fact the main benefit of SOA 1.0 is the promotion of reuse of services. Therefore, in the design of service, we have to take the reusability of the service into account.

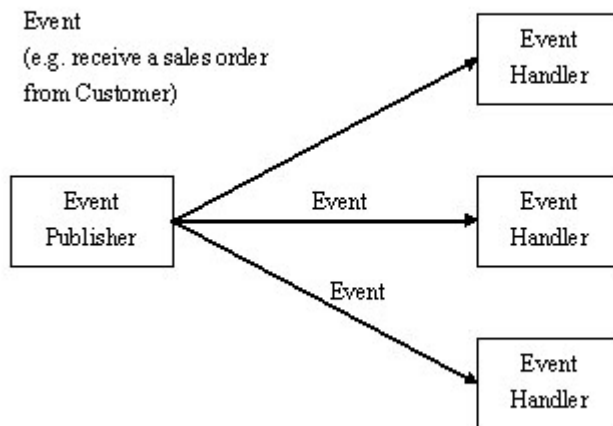
## **So what Event Driven SOA brings us?**

1. Event Driven SOA allows the support of one-to-many communication, rather than the one-to-one

communication for services in SOA 1.0. As there can be more than one event handler for handling single events, Event Driven SOA can support the one-to-many communication.



Service Calling on SOA 1.0 Environment



Event Publishing and Notification on Event Driven SOA Environment

2. Event Driven SOA guides the business analyst to think about **what** business needs have to be handled before about how to handle them. When designing services on SOA 1.0, we focus on **how** the service helps the business need. But the proper approach should first identify the activity that will trigger the business need , i.e. the aim of identifying a business event.
3. Event Driven SOA identifies the **need** for handling internal business event. In the SOA 1.0 case, service is called explicitly by the service consumer. However, in the real world there are events from an internal system, which may be based on the monitoring of some business attributes (e.g. discount sale on a specific product). Those business attributes may be a result of a business process (e.g. the discount of the product on sale may be calculated from the successful cases of the sales order service).

### New requirements for supporting Event Driven SOA

As Event Driven SOA is quite different from SOA 1.0, an adoption approach with new requirements is recommended for Event Driven SOA.

1. The methodology for identifying the business event.
2. The feature in ESB to pass the event to its corresponding event handler.
3. The methodology and the way to build the linkage between events and services.
4. The support on monitoring internal status of business processes or other attributes and fire an event when the status is up to a value with notable business meanings.

