

Service-oriented architecture

A practical guide to measuring return on that investment

With service-oriented architecture (SOA), good things don't come to those who wait. While companies shouldn't abandon building a business case for SOA, they should, in the interest of speed, take a simpler, more intuitive approach.

Introduction

Much like the Internet before it, SOA is sweeping through companies and industries, upending the competitive order. Thanks to SOA, companies are fast commissioning new products and services, at lower cost and with less labor, often with the technology assets they have right in hand. It's like discovering that with your existing condiments, you can make an entirely new and unexpected recipe, to the delight of your diners and of course yourself. Most important, SOA is helping to put IT squarely where it belongs: in the hands of the business executive, under whose direction it can create the most value.

This is, at any rate, the *theory* of the case – but, IBM wasn't content to accept the theory at face value. So we undertook to study 35 SOA projects, across a range of industries and regions, with which we were intimately involved. We discovered that indeed, every last one of them exhibited improved flexibility, and

the vast majority decreased costs – as well as realizing a host of other benefits. But we also discovered something very intriguing: Companies, if they developed a business case at *all* for SOA, weren't doing it in the traditional way – replete with exhaustive evidence. They all recognized the difficulties and limitations inherent in building a business case for any fast-emerging technology. But whether they built a business case or not, they had better get *on* with it if they didn't want to be left out in the cold. Striking the middle ground – between *no* business case and the *traditional* one – IBM has developed a *simplified* approach to measuring the business value of SOA.

The SOA investment analysis framework

We sought to simplify the measurement approach and make it more meaningful by doing several things: establishing a benefits framework specific to SOA, but without adding any predetermined metrics that project managers would need to

collect; establishing a cost framework that focuses on limited choices and ways to depict the costs incurred; setting the number of implementations as the basis for including the time element to examine the return; and avoiding complex or indirect metrics such as labor learning curves, cost savings from the retirement of legacy systems and so on.

The investment analysis framework we propose has five primary steps:

1. *Selecting the expected benefits from the benefits framework.* We found that we could distill the benefits into two broad categories: *improved flexibility*, culminating in *increased profitability*. Further, we found that there were two major more-qualitative elements that contributed to increased profitability: *reduced operating risk* and *improved ability to comply*.

2. *Identifying the applicable cost scenario.* With SOA, costs vary based on whether you are *using* services, *providing* services or *both*. Each of these possible cost scenarios includes one or more cost elements, such as software, hardware and labor.

3. *Calculating the initial, simple return.* The simple return is equal to the benefits you've assigned to SOA, divided by the cost scenario you've incurred.



4. *Assessing and selecting the cost scenario for the second and subsequent implementations.* When you move to the second implementation, you won't incur the cost for the infrastructure (typically the most expensive part of an SOA implementation); you'll just be reusing that infrastructure, lowering the total cost. What's more, if you're just providing, or "exposing," services from existing applications, your cost is even lower – merely the cost to develop the service interfaces.

5. *Keeping the benefits constant, calculating the returns for the second and subsequent implementations.* Rather than picking an arbitrary number of years, we suggest using a time horizon of three or more implementations when calculating the return on SOA investments (see Figure).

No matter how you slice it, the case for SOA as a software design approach is very powerful. The measurement approach we've suggested should help you to add simplicity, sense and speed to the process, allowing you to exploit the first-mover advantages momentarily available.

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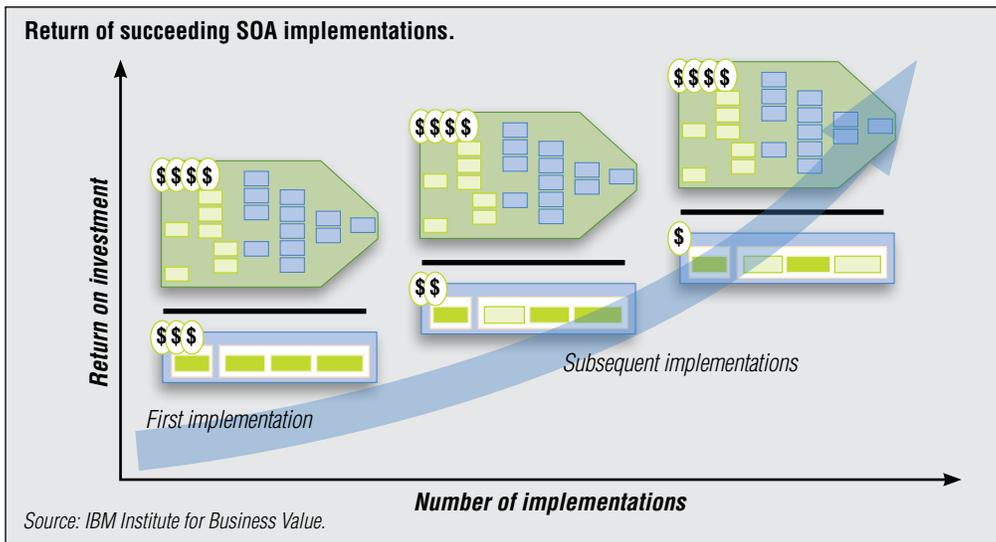
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How can IBM help?

- **Application Services:** The ROI framework described in this paper can be integrated into any of the SOA services offered by IBM:
 - Application Development
 - Business Application Modernization
 - Complex Systems Integration
 - Enterprise Architecture & Technology
 - SOA Strategy & Transformation
 - SOA Design, Development and Integration Services.
- **IT Strategy and Change:** Help to define your strategy to include SOA, or conducting a business value assessment of your SOA project portfolio.

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