

# The SOA Magazine

## Feature Article



### **SOA and the Emergence of Business Technology: How Business Services are Changing the IT Landscape**

by Farzin Yashar and Robert Laird

Published: January 29, 2007 (SOA Magazine Issue IV: February 2007, Copyright © 2007)

[Download this article as a PDF document.](#)

*Abstract: Globalization is having a tremendous impact on IT. Fueled by technological change and innovation IT is becoming more capable than ever of establishing itself as a true partner to business, a trend that is creating the opportunity for a new breed of IT professional: one that is both technology and business savvy. In this article we discuss the genesis of this accelerating wave of change, how it has been responsible for and relates to the service-oriented architectural model, and how it is contributing to a new field we can call "business technology."*

#### **Introduction: The Business View of IT**

The business has long tolerated IT as a black box into which much corporate treasure was poured. Initially, the returns on the investment were positive. It was goodness to automate the clearly automatable processes, like billing, and accounts payable/receivable, and ordering. Armies of clerks and paper files were replaced by mainframes and servers with immeasurable bytes of storage that kept everything orderly and fixed.

But then the business changed. Maybe a company had a situation where it acquired that interesting media firm in the Czech Republic when the Iron Curtain finally fell. Or, perhaps, it had to sell assets in Asia when it reached beyond what could be profitably managed (and then paid a kings ransom for that entertainment studio in LA).

All of a sudden, there were differentiated IT silos that were hard to manage and disparate IT departments that didn't like each other much. One was Blue, and the other used all Microsoft technology, and yet another had a jumble of other things. So the company sunk more capital into the IT black box but this time around did not seem to get much back anymore. So, when the question was asked at the end of the year, "What real business benefit did we get from IT?", there are shrugs and rolling of the eyes.

But it's not just that. The manner in which business is being conducted is changing just as much as IT. In his seminal book "The World is Flat," Thomas Friedman writes: "The best companies are the best collaborators. In the flat world, more and more business will be done through collaborations within and between companies, for a very simple reason: The next layers of value creation ...are becoming so complex that no single firm or department is going to be able to master them alone." [REF-1]

#### **The Service-Oriented Response**

The IT marketplace initially reacted to this situation by introducing middleware and implementing integration patterns to connect and synchronize systems and data inside the enterprise as well as with partners, suppliers, and customers. This helped some in preserving the past IT expenditure and also brought order to the wide-spread heterogeneity acquisitions had created.

However, something very important had still not been addressed: the flexibility and agility desperately required by organizations to respond to market changes and become true on-demand businesses. It is in response to this critical need that SOA emerged as part of the IT mainstream.

As a result of the wide-spread adoption of service-oriented design approaches, software development as we have come to know it has started to change. The development techniques of yesterday are simply no longer congruent with the requirements for establishing an on-demand business environment. Instead, the shift is towards "dynamically reconfigurable services," [REF-2] specifically designed software programs that can be leveraged to solve business problems on-demand, individually or as a reconfigurable composite.

### **Dynamically Reconfigurable Services and the Classic Lego Analogy**

A time-proven analogy used to explain dynamically reconfigurable services is by comparing them to Lego pieces built with a special malleable material. This material is flexible enough so that if you need a Lego part in the shape of a half cylinder, you can shape the part exactly to your specifications. Yet, it is also sturdy enough so that the big structure you end up building will not crumble. You can stretch the pieces to the appropriate size. Moreover, you can change their colors as well (Figure 1).

*Figure 1: The composable nature of Lego pieces is fundamentally comparable to the concept of dynamically reconfigurable services.*

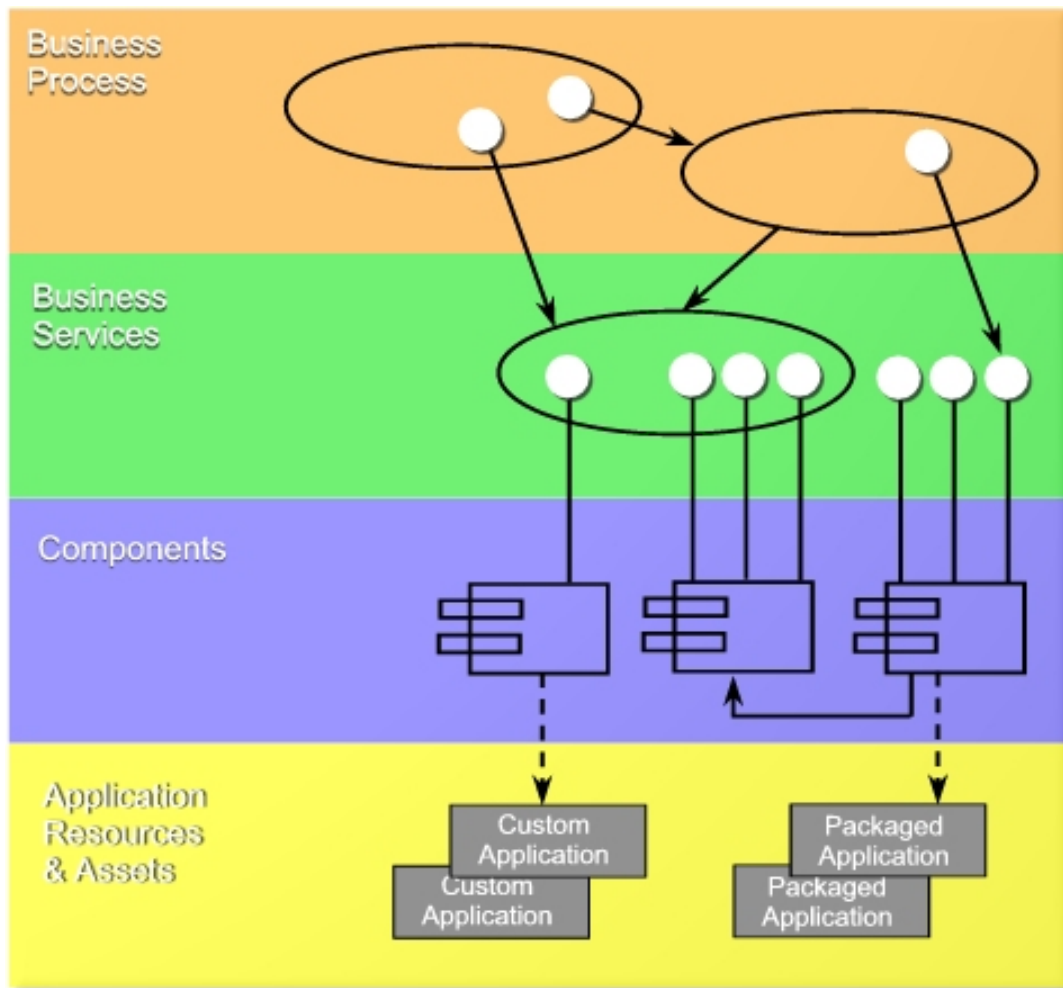


If you write software, you know that writing a really flexible piece of software is absolutely possible. It requires more time and effort, but (if you do it right) that initial investment is returned back to you many times over. For most of those learning about SOA, it is not the writing of software that is mysterious, it is what the software needs to do to provide business flexibility that seems somewhat unclear.

### **Business Services and Business Technology**

A business that has access to a rich inventory of dynamically reconfigurable services can achieve end-to-end connectivity across the enterprise and beyond (by reaching out to partners, suppliers, exchanges, customers, etc.). This enables the organization to reactively manage and reconfigure processes and relationships that can be added, removed, or augmented on the fly - based on new strategies and internal and external business drivers. The creation of new banking, insurance, and telecommunications products, for example, would no longer require long IT cycles, because of the inherent agility of the organization's underlying (dynamically reconfigurable) business services.

Business services embody the essence of on-demand business, empowering organizations to compose automation logic in response to internal and external influences. The agility comes with the ease of composition, much like using Lego. Whether a service encapsulates a simple body of logic or an entire business process, it is just another building block of a service-oriented enterprise (Figure 2).



*Figure 2: A familiar representation of the enterprise, subsequent to the introduction of service layers. Business services play a key role in uniting business logic with technology resources.*

The idea of writing dynamically reconfigurable services may seem somewhat far fetched to the SOA novice. But, if we go back 10 years, it becomes pretty evident that today's technologies and software development approaches would have seemed far fetched too. In fact, much the same way service bureaus were popularized by enabling organizations to rent or share hardware resources, it is being predicted that services will become a commodity also made available by outside service providers via more recent trends, such as third-party service marketplaces and grid technologies.

### **Bringing Unity to Business and Technology**

Before all of this can happen, the concept of the business service has to be made precise. There is still too much separation between IT and the business today, resulting in poorly prepared business requirements that are figuratively thrown over the wall to the development team. The era of writing software based on vague design specifications will need to reach its conclusion.

Breaking down the cultural barriers between IT and the business to foster collaboration is the fundamental starting point to effectively defining business services. This lays the groundwork for an organization to work toward key strategic benefits that go beyond code reusability so as to strive to establish highly flexible solutions that can maintain the alignment

between IT and business and a consistent realization of business value, even while the business continues to undergo change.

In many organizations, these cultural obstacles are significant. Either business analysts have no desire to learn about development approaches or technology architecture - or - perhaps the technology architects have no interest in business models. These points of conflict can be compared to a marriage where the partners are simply not getting along that well. This is where SOA once again enters the picture, much like a marriage counselor, trying to bring business and IT together - as true partners.

### **IT as a Business Partner**

A well recognized trend that is underway is the outsourcing of technology jobs to the "*cheapest, smartest, or most efficient provider,*" [REF-1] while business-oriented positions remain within organizational boundaries. Indeed, an enterprises business model and business processes are becoming even more important to the organization as a source of competitive differentiation and advantage.

However, the ever-increasing influence of SOA and the emergence of business technology suggests that a fundamental shift is taking place. IT is becoming both a business enabler and a business partner. In fact, it must in order to survive as anything more than a shell organization managing various outsourcing arrangements. This shift will affect some companies (the successful ones) sooner than others, but overall it can't be stopped. The IT department can no longer exist as merely a technology shop.

As a result of the pressing need to unify business and technology - and - the fact that this unification can now be achieved through SOA, unique requirements and capabilities are manifesting themselves in new ways that are challenging IT. The foremost of these challenges is for technology-centric professionals to think like business people.

### **The Business Technology Professional**

This has not only resulted in the emergence of business technology as an architectural concept, but has also formed the basis of a new profession dedicated to business technology. This new breed of IT expert will need to have a balance of technology and business expertise in order to design business services in response to requirements, such as:

- How do we implement a specific trading partnership?
- How can we get a 360 degree view of our customers, no matter which sets of products they have?
- How do we get real customer self-care, with complete access for customers to all back office information that belongs to them?
- How can we get real-time trouble ticket information from our service providers?

Again, these types of questions, from a business perspective, are not new. However, to meet these requirements through service-oriented solutions based on the use of business services requires a skill-set concentrated on both technology and business. (To learn more about this new role, see the sidebar.)

### **Becoming a "Business Technology Guru"**

In the Twentieth Century, societal and economic change largely affected the manufacturing base, the so-called blue collar jobs in the developed world. Much of the world (including the IT community) observed with detachment while many of these jobs were relocated to developing economies, such as Mexico and various countries in Asia. Steel mills in the Rust Belt were shuttered, textile operations in the southern United States were relocated, and electronics manufacturing in developed countries came to a standstill.

For the average IT professional, life remained unchanged. While downsizing did take place from time to time, those who were laid off in one IT sector could usually find opportunities in another.

That has changed. IT personnel today tend to stay where they are. At many enterprises, there is a disincentive to move to a different department. When the next reduction in force (RIF) comes, the new employee with the least experience loses his or her job.

For self-preservation, IT professionals are becoming more specialized in the technologies they learn. As a result, they are learning a fewer number of skills. If they have any business knowledge at all, it's for a particular function only. A true global or enterprise-wide view of how the business works is rare among the average company's IT personnel.

With the advent of SOA and the need for business services comes an opportunity to distinguish yourself by focusing on the field of business technology. If you are technology proficient and able to develop a holistic understanding of a business, you might just fit the bill.

Interested in becoming a Business

## Conclusion

The increasing need for organizations to become real on-demand businesses has established service-oriented architecture (and its fundamental notion of dynamically reconfigurable services) as a central, enabling approach for modeling an agile enterprise. To truly unify IT with business and fully leverage what SOA has to offer requires the utilization and definition of business services.

The expertise required to establish business service layers within an enterprise ties into a new perspective of the enterprise itself, referred to as "business technology." A knowledge of business technology is so fundamental to SOA that its increasing demand will establish a new profession.

The focus on business technology and the resulting opportunities to align technology with business models could easily turn the tides; organizations will reconsider outsourcing development projects in order to foster this new marriage between IT and business under one roof.

*Note: The opinions expressed in this paper are those of the authors and do not reflect the official opinions or positions of IBM or its management.*

## References

[REF-1] Thomas Friedman, "The World is Flat", 2005, Farrar, Straus and Giroux, New York, New York

[REF-2] IBM Service Integration Maturity Model (SIMM), IBM Global Services ([www.ibm.com](http://www.ibm.com))

Technology Guru in the 21st century?

Here are some tips:

- Specialize in one or more functional areas but acquire a significant level of understanding of all associated business domains.
- Break the habit of thinking only about technical issues and learn how to view the organization from a business perspective.
- Find out what is happening in the world, what trends are developing, and how your organization's industry could change.
- Constantly exercise analytical skills by mentally transforming business to technology (think about the Lego pieces that your business needs to succeed).
- Work on those communications skills. Get out of the cubical and find ways to talk to customers, suppliers, or partners. Learn to collaborate; it's all about partnership.

And most of all... welcome change!

THE PRENTICE HALL SERVICE-ORIENTED COMPUTING SERIES FROM THOMAS ERL



[home](#) [past issues](#) [contributors](#) [official book site](#) [legal](#) [rss](#)

Copyright © 2006-2007 SOA Systems Inc. All Rights Reserved