The Agile Architecture Revolution

How Cloud Computing, REST-Based SOA, and Mobile Computing are Changing Enterprise IT

Jason Bloomberg
THE AGILE ARCHITECTURE REVOLUTION
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HOW CLOUD COMPUTING, REST-BASED SOA, AND MOBILE COMPUTING ARE CHANGING ENTERPRISE IT

Jason Bloomberg

with contributions from Ronald Schmelzer

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To Ronald Schmelzer—business partner, mentor, colleague, parallel entrepreneur, curmudgeon, and friend.
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FOREWORD: THE AGILE ARCHITECTURE REVOLUTION

The core thrust of architecture has been to define core business requirements, and then construct the IT solution to meet those requirements, typically as instances of software. While this seems like a simple concept, many in enterprise IT went way off course in the last 10 to 15 years.

IT does not provide the value it once did, meaning IT does not meet the objectives and expectations of the business. Indeed, IT has become a cost center where the resource burn increased significantly over the last 20 years, while the value to the business decreased relative to costs. This can’t continue.

We’ve tried all of the tricks. With “waterfall” types of approaches to application architecture, the time it takes to move from understanding the requirements to the final deployed system could be years. Thus, by the time the system is completed and deployed, the business requirements likely have changed, you’re back to the drawing board, and the delivered system has significantly diminished in value.

To address the latency issues around the waterfall, those who design and build systems turned to the concept of interaction. This means moving through cycles of understand-design-develop-deploy, over and over again, until there is something that resembles the desired business solution. Iteration approaches to software development often lead to poorly designed and lower-quality systems because you get it wrong over and over again, seemingly to get it right once. Moreover, as requirements change, it’s back to the iterations again, sometimes in a never-ending loop.

The core benefit IT should provide is that of achieving business agility, or the ability to allow the business to change rapidly around changing business requirements and business opportunities. Thus, businesses can move quickly into newer and more profitable product lines, acquire companies to expand their position in the market, or quickly align with regulatory changes that could stop their business in its tracks.

So, if business agility is good, how can IT achieve it? The current thinking is that we need to change our approach to design and development, again, and move to newer methods and approaches around software architecture. The right answer is that we need to change what we build, not how we build it.
This book describes a true revolution, a different way of thinking about how we build and leverage software. The idea is to address business requirements in a different way. Instead of thinking about what the business needs the software to do, the business should define the software to support agility. Thus, the software is not designed to provide specific static functionality, but instead it is designed to change as the needs of the business change.

In this book, Jason calls this requirement “the meta-requirement of agility,” which defines how you approach the other requirements around the software system. The idea is to build a system that can change its behavior and data semantics on demand, in support of a changing business.

The concept of SOA has always promoted the notion of agility, and many of the architectural patterns of SOA have a place within Agile Architecture, the revolution defined in this book. SOA has taken a beating the last several years, mostly because vendors hijacked the term and took it for a wild ride, to the point of it being declared dead.

SOA once meant an approach to architecture where the end state was defined sets of services, and the ability to configure and reconfigure those services into business solutions. These days, most consider it just another category of technology. However, SOA is a fundamental approach to achieving business agility, and is deeply seeded in the concepts defined in this book. It’s time that we understand the true value of SOA as an architecture pattern, and make proper use of it.

The rise of cloud computing provides us with another opportunity. We now have the ability to access massive compute and storage services on demand over the open Internet. These services are at a price point more affordable to the smallest and most frugal businesses.

What’s most interesting about cloud computing is that you access cloud services, such as storage and data access services, using well-defined APIs, typically RESTful Web Services. Clouds are typically designed to be service oriented, they mesh well with the use of SOA approaches, and thus they support the architecture principles as defined in this book.

In other words, we’re able to combine the proper use of SOA with the emerging value of cloud computing, with the ability to better define a software solution that addresses most existing and future business requirements. This is a convergence of concepts that have the power to change the way we think about software and finally bring IT back to a place of productivity and value.

This is a revolution. It’s a revolution in how we think about architecture. It’s a revolution in how we think about software development. It’s a revolution in how we think about IT supporting the business. Also, it’s a revolution in how we think about leveraging new platforms such as cloud computing.
We must begin to think differently. What we do today is just not working. Hopefully you all will grasp the value of the concepts defined in this book and begin the journey out of the software factories to systems that finally meet the needs of business.

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