

1

Introduction

The idea for this book was born during one of my project-related trips to the beautiful city of Hangzhou in China, where in the role of Chief Architect I had to guide a team of very young, very smart and extremely dedicated software developers and verification engineers. Soon it became clear that as eager as the team was to jump into the coding, it did not have any experience in system architecture and design and if I did not want to spend all my time in constant travel between San Francisco and Hangzhou, the only option was to groom a number of local junior architects. Logically, one of the first questions being asked by these carefully selected future architects was whether I could recommend a book or other learning material that could speed up the learning cycle. I could not. Of course, there were many books on various related topics, but many of them were too old and most of the updated information was either somewhere on the Internet dispersed between many sites and online magazines, or buried in my brain along with many years of experience of system architecture.

There is no doubt that no book or class can replace experience of system design, but a single and relatively compact information source could still help. This is how the book started. As much as I wanted to create a single comprehensive book, size and time forced me to focus mainly on the technical aspects of the architecture, which are more relevant for junior architects, leaving out the tools, processes and most of business aspects usually handled by senior architects. However, the technical part is changing rapidly, creating a real challenge for such a book: more than once there was a need to remove or modify chapters because of the disappearance and acquisition of companies, the refocusing of products and technologies (taking into account the fact that the book was written during the global recession) and the emergence of new technologies. The decision to concentrate on the most advanced disruptive technologies made the task even more complex.

The title of the book was chosen in order to limit the scope of the material, but on the other hand it is difficult to call it a simplification: telecommunication is probably one of the most demanding environments for product development with well-defined and very complex data, control and management planes, security and high availability requirements, real-time processing and much-much more. Gateways are selected because they require the most advanced, highly scalable and high-performance implementation; and platform design brings with it the

need to integrate hardware and software components to enable easier and faster value-added application development.

An important part of the collection of material and processing it was working with a very large number of companies so as to expose readers to their technologies, products and solutions, while keeping the text as neutral as possible; and I would like to thank all these companies for working patiently with me during all of that time. At the same time, I would like to apologize to those companies that were not included in the book; many times it was not because these technologies were irrelevant or less advanced, but simply because I needed to cut something in order to make sure that the book was published within the specified timeframe.

Originally, I wanted to include examples of successful and failed system designs along with an analysis of the success or failure, but few companies were willing to share such information with the entire world, especially when talking about the failed projects. Maybe, in the next book...

Finally, I would like to thank my wife Lilia, my son Roi and my daughter Iris for their extreme patience and support; please accept my apologies for the limited attention that you received during the writing of this book.