

# Foreword

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*by Forrest W. Breyfogle*

When working with clients, I introduce basic Six Sigma concepts via the themes of Smarter Six Sigma Solutions and Integrated Enterprise Excellence (S<sup>4</sup>/IEE)—a system developed through more than 15 years of experience working with Six Sigma practitioners. A successful Six Sigma-based business strategy includes a suite of cross-functional and vertically aligned metrics that lead to significant improvements in customer satisfaction and bottom-line benefits as well as an infrastructure to support the strategy. After discussing what I call satellite-level and 30,000-foot-level metrics, I typically proceed through a discussion about drilling down from the satellite level through strategic plans to high-priority projects at the 30,000-foot level. From this S<sup>4</sup>/IEE-based and vertically aligned project portfolio, detailed Six Sigma projects and operational plans may be effectively launched and managed. I close my introductory material with a discussion about how Six Sigma relates to “other improvement initiatives.”

My list of comparisons typically focuses on “other *manufacturing* improvement initiatives” since, for many years, this has been the main focus of Six Sigma. But, in recent years, I have worked with an increasing number of software and systems engineering and IT organizations that are implementing Six Sigma. In this book, I have found answers to key questions and misconceptions about the relationship between Six Sigma and the Capability Maturity Model Integration (CMMI), a domain-specific *engineering* improvement initiative. Among my key takeaways is that the relationship between Six Sigma and CMMI exemplifies one of the principles of S<sup>4</sup>/IEE: CMMI provides process infrastructure that is needed to support a successful Six Sigma strategy.

Of course, there are many other dimensions in the relationship between these two significant improvement approaches. This book elaborates on those, shares insights about relationships with other domain initiatives, and provides several different illustrations of the general application of Six Sigma frameworks and methods to the IT, software, and systems engineering domains. It is an adept balance of breadth and depth of informative material—deep enough to be useful for novice and expert Six Sigma practitioners working in or interacting with this domain, as well as for engineers and CMMI practitioners who find themselves facing the world of Six Sigma; broad enough for managers trying to effectively straddle (or resolve conflicts across) both worlds.

I began pondering the application of Six Sigma to software several years ago, when I first met Jeannine at the II Symposium on Six Sigma, sponsored by the Centro de Investigacion en Matematicas. I am pleased that through her efforts and those of her colleagues, the SEI has engaged in substantive work in connecting the worlds of software process improvement and enterprise process improvement.

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*by Jack Ferguson*

Finally, a book that bridges the software and hardware process toolset. To date, there have been hardware and software engineers who for one reason or another have not communicated their process methods. And so, myths formed that convinced the hardware community that CMMI was *only* for software and likewise convinced the software community that Six Sigma was *only* for hardware.

It is both refreshing and thought provoking to dispel these myths. This book not only dispels the myths but also goes beyond to demonstrate through real case studies and illustrations that the tools when used by either discipline indeed complement each other. The ability of these two process tools to accelerate process improvement is something that few have discussed.

This book provides an excellent strategy in combining CMMI and Six Sigma methodologies for process improvement. My background is within the software community and CMMI adoption. My use and familiarization with Six Sigma is limited. Yet the arguments and mappings presented here are straightforward and understandable, even by me.

The explanation of CMMI and Six Sigma cooperating to provide organizations with an expeditious way to deploy process is intriguing and convincing. Frequently, we find organizations competing for process initiatives, each initiative needing separate funding and resources. This book gives organizational management the data to stop these turf wars.

I have worked with Jeannine and Lynn for many years and with Bob for the last few months. Their knowledge of and dedication to the adoption of both

CMMI and Six Sigma practices is founded in real business cases. This is not theory but application of the relevance of partnering these two methodologies.

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