

# Foreword 1

Being truly great is not about complying with a process standard. It is about living the life of greatness. Process standards give you a collection of best practices that others have employed on their path to greatness. Yet, unless you integrate these practices into a seamless end-to-end process that you pursue and improve every-day, you may not achieve the results that signify greatness. Living the life of greatness does not begin with preparing for an appraisal. It begins with commitment to achieve an extraordinary result and then adopting the practices and techniques required to get there.

Even as we were developing the original CMM we did not fully understand high-maturity organizations. We knew the practices we were committing to paper worked and we had experience with many of them. But to put them all together to craft a high performance organization was something few had seen, and only Watts Humphrey was sensing how to propel a software organization to that height.

We came to fully understand high-maturity when the three primary authors of the CMM (Mark Paulk, Charles Weber, and I) spent three days studying what may be the finest software product ever developed, the Space Shuttle Primary Avionics Software System. The organization that developed this program was the prototype for Level 5, yet they never claimed to be Level 5. In fact, they told us a few things they were not doing at lower levels of maturity. Nevertheless, they lived a life committed to excellence.

Before each Shuttle flight the project managers had to attest to NASA that to the best of their knowledge there were no safety-related defects in the avionics software. To them that meant “no” defects, since they had no idea how to tell which defects would have safety implications under the bizarre conditions encountered in space. The only way to achieve their objective was to commit all that there was into producing a defect-free product. They did not care about appraisal results. They only cared about adopting the most effective processes to achieve their objective. Ultimately, this led them to quantitative management combined with continual innovation as they kept driving their defect levels as close to zero as humanly possible.

Few projects have to achieve zero defects. In fact, most clients don't require it and aren't willing to pay for it. But each project or program has some critical business or mission objectives that the development team needs to attain. These are the true drivers for high-maturity, not some bragging rights that are helpful for marketing. True high-maturity is a relentless drive for continual improvement in the processes employed and the outcomes achieved. By the way, don't be surprised that as you begin to master your objectives, the objectives and their measures change completely because the world around you has changed. Low-maturity organizations struggle under such circumstances. High-maturity organizations just refocus their improvement infrastructure. The true pursuit of high-maturity is perfecting the conditions required to respond to ‘The Never-ending Next’.

In this wonderful book, Raghav Nandyal, one of the world's leading experts on process improvement, provides an informative and at times inspiring excursion into the life of true high-maturity organizations. He does not fall in the trap of writing just about what practices must be installed to get a Level 5 appraisal result. Rather he writes to readers who want to live the life of professional excellence; readers who pursue their objectives with relentless focus rather than taking a breather after an appraisal finds them compliant with high-maturity practices.

Raghav has long recognized that true high-maturity requires a focus on developing the people as much as improving the process. To this end he describes how to integrate both CMMI and the People CMM to create an organizational environment where high-maturity can thrive. Not surprisingly, the Space Shuttle avionics program has some of the most sophisticated mentoring and competence development practices we have seen. To help you grasp the integration of these two models, Raghav has distilled the hallmarks and properties of high-maturity organizations into crisp lessons that help you see beyond mere compliance with practices, and help you determine if an organization is truly committed to living a high-maturity life.

I have had the pleasure of teaching the introductory course for the People CMM with Raghav, and his understanding of the model is profound. Few people are better prepared to guide you through the integration of these models. But even more, he discusses how to weave their philosophies and methods into a life of professional excellence.

One of the most valuable aspects of this book is Raghav's foray into measurement and statistics. High-maturity rests upon the use of quantitative methods to evaluate behavior and outcomes, and take action based on the observations. I have seen few organizations, even many with Level 5 appraisal results, do it well. The problem is that software development is not manufacturing that the assumptions underlying many of the statistical techniques used in manufacturing are wildly violated by software development phenomena. Blind adherence to traditional methods of statistical process management may help achieve an appraisal result, but they do not always result in useful analyses that help control variation or predict ultimate outcomes on software development projects. Raghav does an excellent job of presenting several alternatives for analyzing high-maturity data. Exploring alternative quantitative techniques to arrive at the most valid and beneficial analysis is a critical skill for high-maturity organizations.

To make many of his points Raghav refers not to the development of Six Sigma Black-belts, but to the development of "The Black Belt"—Bruce Lee. Lee led a life committed to physical excellence. In the 20 years I knew Watts Humphrey I saw in him the same relentless commitment to continual improvement. However, the constant references to Bruce Lee throughout the book made me very uncomfortable. Lee was only an inch taller and weighed the same as I did when I played high school football. Now if I only had his maniacal commitment to physical development, think of how I could have used Kung Fu against all those oversized defensive tackles. Rather than living a life of excellence I had to live a life of acceleration so they couldn't catch me. Having read Raghav's book, I now know better.

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