

Preface

From the moment I first heard about Six Sigma I knew that it was the salvation of both business and customer. Here, at last, was a proven and powerful methodology that both allowed and encouraged organizations to remove once and for all the reasons for defects from processes, products and services. Having worked for the majority of my paid employment in the field of systems design and development, I understood all too well the value of preventing the defect from happening in the first place and Six Sigma improvement was like a breath of fresh air. Naturally I looked beyond the idea of patching up or improving bad processes, towards the high ideal of getting everything right in the first place. I have long been a firm champion of the end customer, and have never been able quite to accept the business need to overly manage customer expectation, rather than to proactively deliver what was wanted and needed.

It is almost exactly a year since beginning work on my first book – *Six Sigma: SPC and TQM in Manufacturing and Services*. As the cycle of creation and commercialization of one work closes with final printing, the creation of the next generation work is well under way. Writing a book is indeed very much about designing and launching something new, both a product and service, to a commercial marketplace. The sharp reader would certainly ask, ‘did you use the Design For Six Sigma approach for this book?’ The answer is unquestionably yes, but not as a deliberate task or formal undertaking; after all I am only a team of one!

This book is indeed designed to be a new product that delivers to customer needs for information and inspiration (and perhaps also entertainment) through excellent quality. As far as I know, at the time of writing there are no other works specifically on DFSS as such, so this is certainly very new and both a product as well as a service. Marketing and customer research has been completed and a strategy for commercialization set out with the publishers. Trials and pilots have been undertaken by speaking on Six Sigma and DFSS at international conferences, and customer needs matched to the new product offering. Much note taking and conceptualization has taken place over many months and a full project plan for execution is now in hand. I have a timetable for writing, and monitor progress by counting the daily production of words, a key metric for project success! However, customer-measured success does not always increase with the number of words written – short, focused chapters full of value are far more important. Automation and technology by way of a word processor certainly helps, particularly with spelling and formatting. The hard reality, of course, is that the actual content is still very much up to the author/designer, and there is no substitute for the highly creative activity of setting one word after another according to a master plan. Computers can do many things, but they cannot yet write books that inspire. Design – the peculiar art and craft of creating the *new* by plan – is unquestionably hard work but very rewarding.

My father was certainly the inspiration for my keen involvement in design and engineering, and his wide interest in chemistry, astronomy, and electrical, mechanical and civil engineering provided many rich childhood experiences that continue to underpin much of what I know and do. Since my youth the achievements of the notable engineers and designers of the Victorian period have been a constant source of wonder and inspiration. In particular I have great admiration for Isambard

Kingdom Brunel, who was one of the all-time giants in the design of bold new products and services. Brunel did more than just design the Great Western Railway; he inspired a whole new approach that changed the limits of what was capable, and had his broad-gauge track survived to today it would no doubt still outperform in terms of speed and stability as well as passenger comfort. With a distinctive pedigree, the GWR was affectionately known as 'God's Wonderful Railway'; there are few designs and products that have inspired such loyalty from staff and customers alike.

Since this book is intended as a practical guide to deploying DFSS in an organization, the exercises at the end of each chapter are provided as an aid for the more studious reader to consolidate learning and understanding through practical engagement. Each exercise will generally build on previous work as well as the current chapter, and may also be used in a group to promote further discussion. Model answers are not provided – it is hoped that the questions are broad enough to challenge any reader from any background and organization, and engagement is more appropriate than 'correctness'.

In passing, I would like to thank Randal Gilbert at Northern Ireland Electricity for providing fresh insight with his discussions and alternative ideas on the use of FMEA. I would also like to thank Joann Neuroth of On Purpose Associates for the challenging ideas on chaos – where change is indeed a way of life. Continual growth and creative development, a part of the composite whole of the Six Sigma approach, needs to be nurtured and actively encouraged to retain the leading and cutting edge to change. With so many new organizations turning to a Six Sigma methodology, I acknowledge the fresh inspiration and impetus provided by the growing band of companies adopting and championing Six Sigma. Naturally the extension of Six Sigma to the whole field of the design of new products and services is a very real challenge but one with outstanding return for those who apply the tools and principles with success.

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