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In recent years there has been considerable discussion of “six sigma” quality. The phrase “six sigma” suggests statistical perfection. In practice, the “six sigma” approach allows for something less than perfection, yet seeks to achieve very high levels of customer satisfaction. In the following guest article, Dr. Freneck Waage reviews three books on this subject that are intended for a popular audience.

Is Six Sigma a Fad or a Revolution?

by Freneck Waage, University of Massachusetts, Boston

Six Sigma is a practical approach to creating a competitive advantage and sustained, profitable growth. There continues to be a strong interest in both the concepts and their applications and in the factors that make Six Sigma sometimes succeed and sometimes fail. We review three books on the subject: (1) Pete Pande and Larry Holpp, *What is Six Sigma?*, McGraw-Hill, 2002; (2) Matt Barney and Tom McCarty, *The New Six Sigma*, Prentice Hall Professional Technical Reference Series, 2003; and (3) George Eckes, *Making Six Sigma Last*, Wiley, 2001. The first book states what Six Sigma is. The second book explains directions in which Six Sigma is evolving, and the third discusses the factors that give Six Sigma results staying power.



What is Six Sigma?
Pete Pande and
Larry Holpp

McGraw-Hill, 2002
\$12, 98 pages

THE PURPOSE OF THIS BOOK is to explain what Six Sigma is, and to explain it well

enough for the reader to form his/her own conclusions about the relevancy of Six Sigma to a job and to a company. The book does not intend to turn the reader into a Six Sigma expert.

Six Sigma is viewed as a smarter way to manage a business, or a department. Six Sigma puts the customers first and drives its results with facts, data, and analysis. Six Sigma traditionally targets to improve three main areas: customer satisfaction, cycle time reduction, and reducing defects.

The book will not add much that is new to a reader who is fairly well versed in things Six Sigma. To readers who are new to Six Sigma, the book offers a very accessible entry into the subject. The book pays a brief attention to some of Six Sigma’s success stories. One real case is that General Electric invested \$400 million in Six Sigma efforts and reaped more than \$1 billion in return.

The book isolates six themes that are common to all successful Six Sigma efforts and that are fundamental to the approach as well: (1) there is the focus on the customers, (2) management is data and fact driven, (3) the process is in the focus all the time, (4) management becomes proactive, (5) collaboration between departments and units becomes free of boundaries, (6) the drive is on everywhere to achieve perfection.

There is no best way to launch a Six Sigma effort. Several on-ramps exist, however. One is via an attempt to transform your business into a more competitively successful company. A second is via the development of strategic improvements. A third is via efforts at systematic problem solving.

The authors explain well how to achieve the results through teamwork. The team efforts are led by specially trained Six Sigma leaders called “Black Belts” and “Green Belts.” The necessary interaction of these and the company’s business leadership is explained.

The Six Sigma teams work through a fundamental problem-solving methodology using tested analytical and other methods. The problem-solving always involves these steps: Define the Problem, Measure, Analyze, Improve, and Control. The tools for this work are explained in a separate

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chapter. Finally, a number of cases are examined. They illustrate and elucidate the wide range of results improvements that have been achieved.

For the person who is looking for deep insights and deep knowledge, this is not the book to buy. For the person who wishes a very accessible and readable information source, this book may well prove to be worthwhile.



The New Six Sigma
by Matt Barney and Tom McCarty

Prentice Hall
Professional
Technical Reference
Series, 2003
\$15.95, 128 pages

THE BOOK EXPLAINS HOW
THE NEEDS HAVE EXPANDED

at Motorola (and elsewhere) from the traditional defect and variation reduction to a framework, based on the marriage of scientific method and business practices, that can assure improved business results. Over the years several innovations have been introduced: The innovations that assure Six Sigma success are: (1) projects and executives need to be aligned around the metrics that matter, (2) teams need to be empowered to improve projects selected by executives, (3) systematically teach "learning by doing" to improve the performance of the teams, (4) drive the execution of strategy by managing scorecard metrics. These four are the new leadership principles. They provide the anchor for the New Six Sigma. The four innovative principles are expected to widen the scope of organizational projects that Six Sigma can improve. A case study is presented in Chapter 2. The case elucidates and explains the real applications of the new principles. The case makes the point that the new principles are needed.

In Chapter 3 there is an application of the New Six Sigma to handling the selection process of business leaders. The Six Sigma approach was adapted to this new task. An entirely new and integrated process was created. The new Six Sigma program was labeled "Leadership Supply". It offers a good example of how Six Sigma can be adapted to new applications using the new framework.

The book is very readable, well organized, and explains the new and necessary Six Sigma innovations. The book also shows why Six Sigma will fail in many important respects if it does not incorporate these innovations.

The book will prove valuable reading for business leaders and for Six Sigma leaders. It makes the point that it is imperative to innovate as described in order to continue to reap significant results improvements from Six Sigma efforts. These innovations are required for achieving the Six Sigma cultural transformation that is necessary for continued progress.



Making Six Sigma Last

by George Eckes
Wiley 2001
\$29.95, 256 pages

THIS BOOK AIMS TO EXPLAIN what it takes to gain acceptance in a company of a Six Sigma effort. Such acceptance is pivotal to

achieving the improvement results that Six Sigma has in its power to deliver. This book is not about forming teams, gathering data, doing problem solving, and obtaining improvement solutions. The acceptance begins with demonstrating a real need for deploying Six Sigma.

Once the need is recognized and deployment begins, resistance to Six Sigma will occur. The author categorizes the various forms of resistance into four categories: technical resistance, political resistance, organizational resistance, and individualized resistance. He also discusses how to deal with these forms of resistance. One counter move is to create a vision for Six Sigma, and the author discusses how to do this in his Chapter 4.

To realize the very significant results that Six Sigma is capable of delivering, it is necessary to have a conducive culture. This culture is defined and labeled a Six Sigma culture. The author goes to considerable length explaining how organizational structures and systems have to change in order to release the energies imbedded in Six Sigma.

The extent to which an organization is achieving the Six Sigma culture can be measured. The mathematical formula and the powers to predict the likelihood of your

ultimate Six Sigma success are particularly valuable. These analytics do that, and they also point to areas where the Six Sigma effort is faring particularly weakly. Five case studies elucidate.

This book makes for valuable reading for anyone who is organizing an on-going improvement effort under the Six Sigma umbrella. It is well written, very accessible, and richly explained in practice by both cases and examples.

Conclusions

The title of this review indicates that there are various opinions on whether Six Sigma is a fad or a revolution. This discussion is merited, as "Six Sigma" was preceded by many improvement ideas. Each of these claimed to present a revolutionary way to improve business performance. Their applications have, however, often proved disappointing. These other methods are known as quality circles, TQM, Deming's 14 points, Taguchi Methods, Crosby's 14 steps, and many more. The improvement ideas came and went without realizing their promised potentials. So what about Six Sigma? My own view is that Six Sigma will prove reliable and useful. The differences are that its deployment requires hard and cold metrics and the use of quantitative methods to identify and remove root causes. Six Sigma furthermore requires that deployment be aligned with business objectives. Most important is the requirement that senior officers be involved. These requirements make Six Sigma efforts consistent with achieving business plan objectives based on solving these with measurements using the full power of modern science—quantitative methods. These are the elements that have made Six Sigma different from its improvement predecessors. Six Sigma already has a powerful and permanent presence in many of USA's large corporations. It will take time for it to spread to other companies. In my opinion, it will become the improvement tool of choice. ■

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