Building the Quality-Centered Enterprise Risk Program

by Henry Killackey

"You cannot inspect quality into the product; it is already there."

The words of Dr. W. Edwards Deming often strike a chord with professionals in the manufacturing industry. His words also resonate with those in the financial services industry. Risk management is one of the newest beneficiaries of his wisdom and the quality management programs that have taken root at a number of banking organizations. One of the most successful programs has been Six Sigma, and in this article, the author discusses its application to enterprise risk management.

As a pioneer of the quality revolution that swept the U.S. and Japan in the middle of the 20th century, W. Edwards Deming criticized many processes that were meant to be beneficial but proved to be unnecessary. He noticed that companies inspected the end product of their work and had no regard for improving the inputs that caused the defects. Understanding the final product did not provide the insight that quality professionals needed to fix the root problems in the production line. Metaphorically speaking, it had been apparent to Deming that companies were too focused on the egg instead of the chicken that actually laid the egg.

Many risk managers find themselves in the same position as the quality inspectors of yesterday. They find themselves bogged down with activities that do not necessarily link directly to the organization's ability to manage risk. Regulations and pressures from stakeholders have unleashed a myriad of repetitive processes that are required for financial institutions to demonstrate that they have risk management

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programs in place. Just as the quality revolution of the 20th century caused those in manufacturing to question whether their processes actually ensured quality, risk managers are left to wonder whether all of their work impacts their organization's ability to manage enterprise risk.

Driving Value

The quality movement of the 20th century became a quest for achieving operational excellence, and it was led by organizations with manufacturing operations. In the 1980s and early 1990s, Motorola, General Electric, and others were drawn to sophisticated methodologies, such as Six Sigma, which promised groundbreaking results in cutting costs and boosting efficiency. However, Six Sigma became more than just a way of achieving greater process quality. It became known as a rating synonymous with perfection or what is defined as "fewer than or equal to 3.4 defective products for every one million produced."[1]

In risk management, perfection cannot be understood as a definite and quantifiable number as it can be for Six Sigma. Perfection in risk management has to be understood as the point at which the organization has seized advantage of all opportunities presented through its portfolio of risks while mitigating all possibility of harm presented through its risks. To understand this definition of risk management perfection, the risk manager has to grasp the idea that there are two types of risk: opportunity risk (positive) and loss risk (negative). [2]

However, many still tend to perceive risk in the historical and traditional sense—as purely negative. Some of this thinking may come from lingering beliefs based on past definitions of enterprise risk, or ERM, which do not paint a rosy picture of risk and arguably reflect slanted views:

- Federal Reserve System—SR 95-51: "ERM includes but is not limited to credit, market, liquidity, operational, legal, and reputational risk."
- The ERM Symposium, National Academy of Sciences, 2004: "The management at the enterprise level of risks that can jeopardize its mission."
- COSO: "Enterprise risk management is a process, effected by an entity's board of directors, management and other personnel, applied in strategy setting across the enterprise, designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite, to provide reasonable assurance regarding the achievement of entity objectives."

Since ERM is not just about mitigating loss risk, quality in risk management is important for maximizing the organization's ability to generate value. While Six Sigma achieved much of its popularity in the world of manufacturing, it is still very relevant to enterprise risk management.

The Change Agents

To institute a quality-centered ERM program, the right people are needed to ensure its success. In a Six Sigma organization, there are commonly five types of change agents.

Leadership. Six Sigma has to be implemented from the top down. The CEO and the executives around him or her must be fully committed to Six Sigma. If they are lukewarm or unsure about Six Sigma, it will surely fail. Cultural resistance to Six Sigma can be minimized through educating organizational leaders on the methodology and explaining the risks and the rewards of its adoption.[3] Their endorsement is necessary to ensure that Six Sigma will have an enterprise-wide effect. The CRO must fully support Six Sigma for it to work in an ERM program.

Champions and Sponsors. Six Sigma champions are high-ranking managers who understand Six Sigma and are fully committed to its successful implementation.[4] Sponsors are owners of processes who play an integral role in initiating and coordinating Six Sigma improvement activities in their organizational sector.

Black Belts. They are directly involved in the process of organizational change and development. Black Belts come from a wide variety of backgrounds and receive weeks of classroom training from consultants and Master Black Belts to achieve their status. Candidates for this position are those who are comfortable with computers and have a strong understanding of statistics. They are often proficient with multiple operating systems and software packages.

Their technical expertise and understanding of statistics are necessary for gathering information and performing the analysis required for Six Sigma projects.

Green Belts: They are project leaders who are entrusted with managing Six Sigma projects from design to completion. During training (which is usually provided by internal Black Belts or external consultants), Green Belt candidates cover such topics as project management, problem solving, quality management tools, and data analysis. In some organizations, they are responsible for assembling and leading Six Sigma teams. They are also mentored by Black Belts.

Master Black Belts: They provide the necessary technical leadership of Six Sigma programs.[5] Of all organizational change agents, Master Black Belts have the deepest understanding of mathematics and technology. They serve as mentors to Black Belts and Green Belts. They provide Six Sigma training and they usually possess excellent communication skills. To ensure the success of Black Belts and Green Belts, they assist in applying methods correctly.

Risk managers and analysts can be segmented into any of the aforementioned categories. No matter how people are organized, it is important to remember that a commitment to improving enterprise risk management is necessary. Through executive buy-in and having the right people in place, the foundation for Six Sigma's success is established.

Six Sigma Methodologies

Once the executives have accepted Six Sigma as a means of improving ERM and the right people are in place to drive change, a system has to be followed to execute Six Sigma successfully. DMAIC and DMADV are two of the most commonly accepted methodologies or improvement models used in Six Sigma organizations.

- DMAIC is a comprehensive framework for conducting Six Sigma projects. It is commonly known as *Define-Measure-Analyze-Improve-Control*. According to Six Sigma authority Thomas Pyzdek, this model is used to improve an existing product, process, or service. Risk managers can use this model to improve existing processes within a functional ERM program.
- DMADV is another approach used by Six Sigma organizations. This model, also known as *Define-Measure-Analyze-Design-Verify*, is used when the goal of a project is to develop a new or completely redesigned product, process, or service.[6] This model is ideal for risk managers who are developing a new ERM program or are radically reconstructing an existing one.

Six Sigma is a highly disciplined approach to enterprise risk management. It causes change agents to understand and study enterprise risk by using process maps, data mining, and hypothesis testing to uncover its root causes. From the information gathered through mining, mapping, and hypothesis testing, the change agent can analyze the risks and develop controls to mitigate the impact of the risks. Controlling risks gives the change agent power in managing the organizational risk portfolio. It can result in significant monetary savings and provide opportunities for driving value.

For both DMAIC and DMADV, the *Define* phase is crucial to classifying and understanding the severity of the risk threatening the organization. Classifying a risk comes down to determining whether it is a hazard risk, a strategic risk, a legal risk, or some other type of risk. Classification also involves determining the likelihood of a risk event occurring. Some organizations use a heat map to assess the likelihood and severity of risk events. An example is shown in Figure 1.

When a risk has been classified, it can be measured for severity. Quantifying risk is necessary for getting an actual numeric measurement and understanding the size of its impact. Many organizations need this information for purchasing insurance or determining economic capital, so accuracy in the *Measure* phase is crucial.

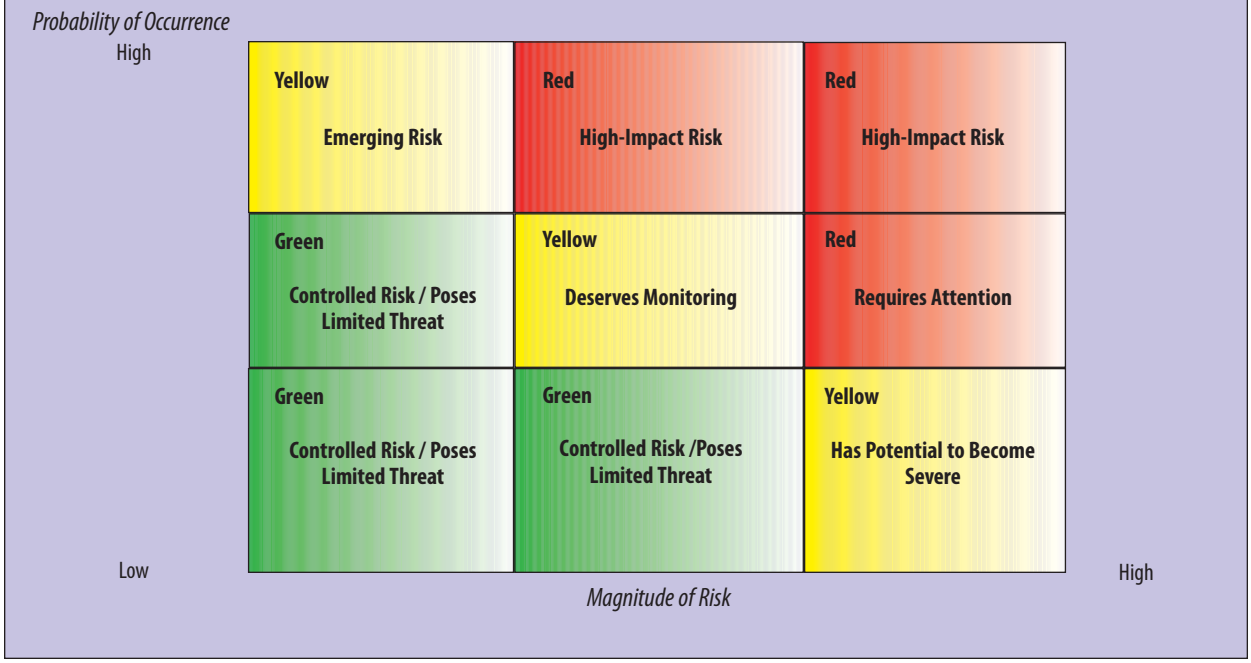
When understanding risk and its severity, it is important to look both outside and inside the organization. In Six Sigma, it is understood that processes require inputs (x) and produce outputs (y).[7] Inputs determine the type of outputs that are produced. So, an important question is, are any inputs affecting the severity or amount of risk that an organization faces?

$Y = f(x)$

Inputs (x) can determine the quality of outputs (Y)

Figure 1

Risk Heat Map: A Template for Identifying and Classifying Risk



In the *Analyze* phase, the change agents must study the data they gathered in the *Measure* phase. By analyzing data, they can and must reach conclusions and recommend process changes. This is where DMAIC and DMADV part ways.

For DMAIC, the *Improve* phase is about implementing the changes that were recommended through the *Analyze* phase. The *Control* phase is crucial in ensuring that improvements are valid and stay in place. There are a wide variety of activities that can take place in the *Control* phase, including:

- Establishing an audit plan.
- Documenting processes and process controls.
- Implementing controls.
- Determining the feasibility of data and performance measures.
- Transitioning the process or business unit back to its original owners.

In DMADV, a new product or process has to be designed after the *Analyze* phase. During the *Design* phase, the specifications that are derived from data analysis are being applied in the design of the new product. After the *Design* phase, the new process or product is tested in the *Verify* phase. In addition to the new product or process, the measurement criteria and process of analysis must also be verified.

Conclusion

The effectiveness of any ERM program can be enhanced through activities that generate value for stakeholders. The modern approach to enterprise risk does not have to be weighed down by repetitive processes and procedures. Instead, it can be driven by an organization's desire to be proactive in seizing opportunities and methodically managing risk.

Six Sigma is a disciplined and scientific approach to solving problems. It requires change agents to identify potential opportunities. From the manufacturing industry to the banking industry, Six Sigma has made a tremendous impact on the way business is done and how risk is managed. ❐

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Notes

1 Sigma levels, defined by Thomas Pyzdek, are a measure of error rates. The lower the number of sigma, the higher the number of defects per million units produced. To statisticians, sigma is a measurement of variability.

2 Whatley, David K., "Aligning Enterprise Risk Management with Business Goals and Processes," presented at Enterprise Risk World conference, Houston, November 28, 2006.

3 www4.asq.org/blogs/financial-services-six-sigma/, American Society for Quality Web site, visited March 15, 2007.

4 Pyzdek, Thomas, 2003, *The Six Sigma Handbook*, McGraw-Hill, 2003, p. 28.

5 Pyzdek, p.29.

6 Pyzdek, p.239.

7 www.asq.org/learn-about-quality/six-sigma/overview/overview.html, American Society for Quality Web site, visited February 10, 2007.