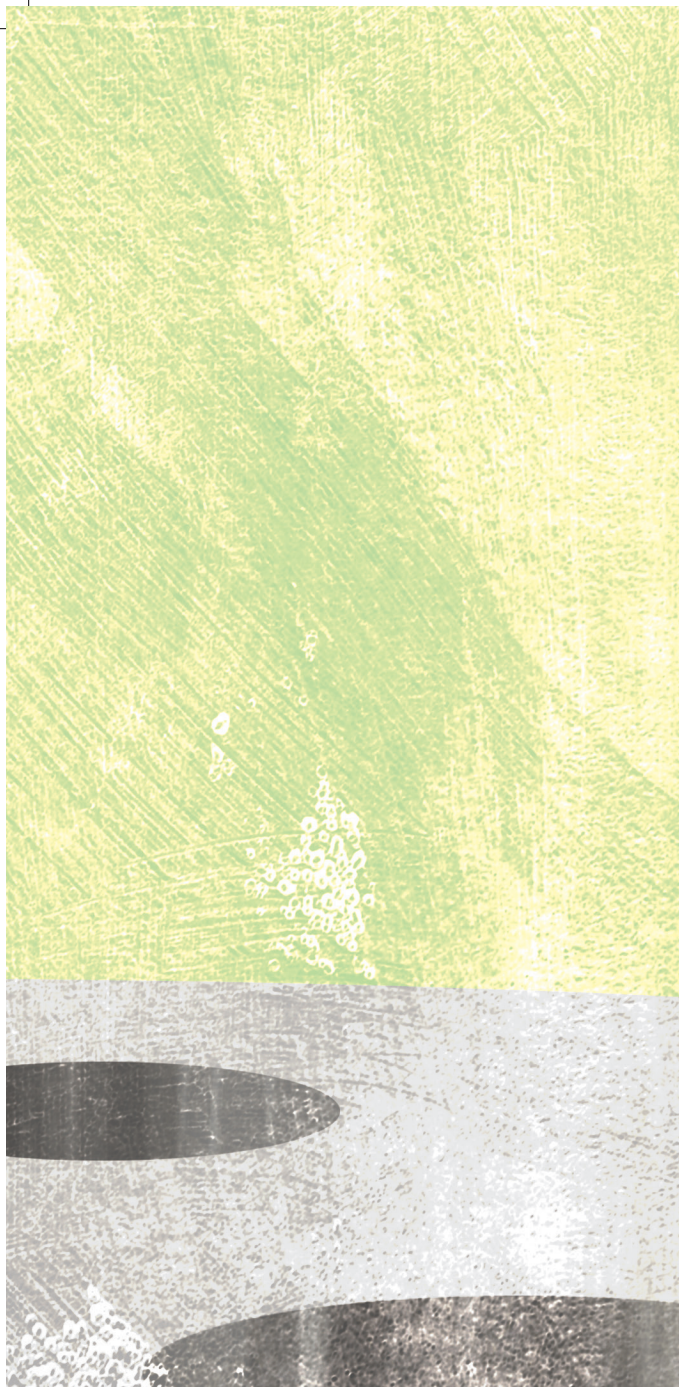




Stretch your goals

Risk management ought to be a strategic exercise rather than a reactive measure.

♦ SURESH LULLA, QIMPRO CONSULTANTS PRIVATE LIMITED



The early Greeks, Romans, and Indians did not worry about uncertainty—the very idea would have been foreign. They believed that everything was predestined. In India, we called it, and still do, karma. Since then, the pendulum has swung so far that we now believe that every system, process, and product/service should be micro analysed in terms of probability with respect to uncontrollable variables—political, social,

economic, and environmental [developments], as well as the market, technology, war, terror, and so on; more specifically, in terms of probability of failure in multiple alternative scenarios.

As a result, we have started worrying about uncertainty and begun applying our skills to estimate the odds. We call it risk management. Risk management is an integral part of quality management.

No surprises for customers

According to Dr J M Juran, the quality guru, to manage finance, we use three managerial processes—financial planning, financial control, and financial improvement. The focus is on the shareholder.

Similarly, he articulated, to manage quality, we use three managerial processes—quality planning, quality control, and quality improvement. The focus is on the ultimate user of the product/service. In quality planning, we set the standard; in quality control, we maintain the standard; and in quality improvement, we challenge the standard.

Of the three quality management processes, risk management plays a critical role in quality planning. It is here that we build reliability into our products/services as well as processes. The mantra is ‘zero surprises for the operators, customers, and users.’

Holistic view of risks

There is a tendency to want to compartmentalise risks and sort them into distinct, mutually exclusive categories. The underlying assumption is that the consequences of the unforeseen event will more or less be confined to a given area, for example, financial or operational or safety.

In actuality, the fallout from unforeseen events tends to affect multiple business areas. Therefore,

it may make more sense to take a holistic view of risks, factoring in interdependencies. Think Enron. Think Satyam.

Failures and disasters

Fear of major disasters and near-disasters has resulted in product quality concerns being raised to a position of prominence in the public mind.

In the early morning hours of December 3, 1984, forty tons of methyl isocyanate, hydrogen cyanide, mono-methylamine, and other lethal gases began spewing from Union Carbide's pesticide factory in Bhopal. Nobody outside the factory was warned because the safety siren was turned off. Not until the gas was upon them in their beds, searing their eyes, filling their mouths and lungs, did the communities of Bhopal realise that their lives were in danger. Over half a million people were exposed to the deadly cocktail. The gases burned the tissues of the eyes and lungs, entered the bloodstream, and damaged almost every system in the body. Nobody knows how many died, but over the next few days, more than seven thousand death shrouds were sold in Bhopal.

On the night of the disaster, water (that was

used for washing the lines) entered the tank containing methyl isocyanate through leaking valves. The refrigeration unit, which should have kept the methyl isocyanate close to zero degrees centigrade, had been shut off by the company officials to save on electricity bills. The entrance of water into the tank, full of methyl isocyanate at ambient temperature, triggered off an exothermic runaway reaction and, consequently, released the lethal gas mixture.

This is but one example. Remember the explosion of space shuttle Challenger, which lost all its crew on January 28, 1986? Or the crash of Singapore Airlines flight SQ 006 at Taipei's Chiang Kai Shek Airport on October 31, 2000? Pilot C K Foong, a Malaysian, had 11,235 flying hours. The passengers were from 18 different countries.

All this is the tip of the iceberg of safety-related failures and disasters. The lessons learned are:

- Failure of product
- Failure of process
- Failure of system
- Failure of management
- Failure of individual



God lost his reputation

At the turn of the century, a nationally reputed cardiac surgeon was appointed to conduct a complex surgery, on a young girl, at a well-established hospital in western India. The surgeon was revered as God to humanity.

The best support team from a chain of hospitals had been selected owing to the risk factors that were inherent in this particular case. Each team member brought unblemished experience to the surgery. They had, in the past, worked together in various combinations.

The patient was dressed for the surgery in her room and transported to the operation theatre at 7 am. Outside the theatre, at a distance, basic seating had been provided for two family members per patient being operated. Three surgeries were in progress. Family members, with stress lines crafted on their faces, silently

read from small religious books. The silence was deafening.

The theatre doors had been shut for 70 minutes. Suddenly, there was a power outage. The stand-by generators failed to

trigger in the seven seconds norm. The patient died. God lost his reputation. The lessons learned are:

- Support services should also be included in risk assessments
- Effectiveness is a function of interdependent variables
- Efficiency of equipment should be measured regularly
- When human life is at stake, reliability engineering should be mandated
- Possibility of sudden death of an established reputation, even though the root cause lies elsewhere
- Negative perceptions can be born with just one episode
- Negative perceptions can erode even a robust reputation

Negative perceptions can be born with just one episode.



ABOUT THE AUTHOR

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How Hong Kong Airport improved ERP in India

A young and progressive managing director of a family-owned medium scale pump business in western India had awarded an assignment to a reputed international consulting firm to implement ERP at his single location factory. The assignment was now 18 months old.

Qimpro had also been awarded an assignment to build a quality improvement culture at the 700 employee-strong factory. Tangible results had surfaced in terms of cost of poor quality (COPQ) reduction within six months. Consequently, Qimpro had earned the respect of not only the managing director, but also the senior management team.

The new Hong Kong airport had been inaugurated and offered full service from the very first day. There were very minor glitches, only in luggage handling. The managing director was at this new airport on the first day. He was most impressed by the efficiency of the airport processes, as well as proficiency of the staff and workers.

Next day, back in India, the international consulting firm informed him that ERP implementation at his factory was now complete. That was the good news. However, they added, it was advisable to run the legacy systems in parallel for the next three months.

There was a deafening silence before a verbal explosion. The advice was simply not acceptable. In terms of complexity, his factory was a fraction of one percent of the new Hong Kong airport. On an impulse, the managing director called me to his room and lamented about the ERP tragedy. He needed help. He wished, at best, to run the legacy system for a week, and then switch it off.

The following rapid fire conversation followed:

“What can you do for me?”
 “I do not have any experience with ERP.”
 “Think. Aren’t there any quality tools?”
 “??????”

Risk analysis is incomplete without addressing the factor of detection and multiple uncontrollable variables.

“Think. There must be.”
 “Well. If you are open for an experiment....?”
 “Tell me!”
 “I can try using Failure Mode & Effect Analysis. It’s called FMEA.”
 “How many days do you need?”
 “How many experienced minds can you give me?”

We formed ten teams. FMEA was applied by each team to one of the ten critical processes over the next 24 hours. The risks were identified, and innovative solutions were implemented to contain the multiple risks.

In three days, the managing director switched off all the related legacy processes. In two weeks, the ERP system functioned as smooth as silk. Reducing the legacy time, reduced enormous COPQ.

The lessons learned are:

- Leaders, who are driven by perfection, push for out-of-the-box solutions
- Leaders must be learners, particularly from cross-industry perfection
- Leaders who set stretched goals, apart from results, enjoy the by-product of employee motivation
- Risk management is a top-down responsibility
- Right-brain creative thinking is one of the most underemployed assets of an organisation
- Reducing the legacy time reduces COPQ
- FMEA is a quality planning tool

The FMEA process

The objective of the failure mode and effect analysis (FMEA) is to look for all the ways a process or product/service can fail. Such a failure occurs when the process or product/service does not function as it should, or when it malfunctions in some way.

Failures are not limited to problems with the process or product/service. Failures also occur when the user makes a mistake. All such failures should be included in FMEA. Anything that can be done to assure the product works correctly, regardless of how the user operates it, will move it closer to 100% customer satisfaction.

The ways in which a process or product/service can fail are called ‘failure modes’. Each failure mode has a potential effect, and some effects are more likely to occur than others. In addition, each potential effect has a relative risk associated with it. The FMEA process is a way to identify the failures, effects, and risks within a process or product/service, and then eliminate or reduce them.

The relative risk of a failure and its effects is determined by three factors:

- Severity: Consequence of the failure should it occur
- Occurrence: Probability or frequency of the failure occurring
- Detection: Probability of the failure being detected before the impact of the effect is realised.

Each potential failure mode and effect is rated for each of these three factors on a scale ranging from 1 to 10, low to high.

By multiplying the ratings of the three factors, a risk priority number or RPN is determined for each failure mode and effect. The maximum RPN is 1000.

Final comment

Most organisations that do risk analysis and management are content with addressing only two factors—severity and occurrence. They also tend to address only market uncertainties. The exercise is incomplete without addressing the factor of detection and multiple uncontrollable variables. ■