A culture of risk assessment can take some of the surprises out of project implementation

BY NEVILLE PINKHAM

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tall seemed so obvious after the cost blowout occurred, the maintenance manager said “Of course damage to frame segments during shutdown may well have been more anticipated.” So why did reality come as a surprise and why wasn’t there a plan to manage the problem when it arose?

You could feel the disappointment when flake and marketing said: “If only we’d considered the possibility of such demand, we’d have had production capacity in place to meet it.” Similarly, you may have thought that window of opportunity not recognized and exploited?

Neither of these situations is rare. So why did reality come as a surprise when we go the extra distance to create a high value for business initiatives?

Opportunities are there to be exploited. Our ability to grasp them and run with the outcomes is the difference between being with the competition or ahead of it. For every opportunity we don’t exploit, we create a chance for our competitors.

Risk assessment is free and will help avoid traps in planning. But it is equally important to understand the effort needed to deal with the effect of a problem or to capitalize on an opportunity. Too little too late is often more of an embarrassment than not thinking of the problem at all.

With the amount of effort needed to develop our projects, it is important that we go the extra distance to create a high performance environment in which the deployment of scarce resources creates maximum value for business initiatives.

A culture of project risk management-thinking can help to produce that environment and ought to be encouraged by senior executives involved in project design and implementation.

The military takes a view that no plan is ever perfect. And is willing to be the loser. It’s a maxim with a ready place in business.

A basic thinking process that causes people to consider the realities of implementation as well as the planned approach is not difficult to understand and the tools for risk management are well documented.

Tasks can be complex and involve detailed probability calculations that are appropriate in some circumstances to guide projects. However, that ought not to put people off the notion that basic thinking about what might turn out different to plan is still a crucial implementation tool.

The solution to these problems and lost opportunities seems to lie in some fundamental issues for any organization:

- Establish a culture in project planning and implementation that says: “Without early analysis of potential mischief, we cannot possibly know how to be successful in our endeavor.”
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1. Damage applied to all widths, weights, grades and prices of product
2. The damage consisted of distinct lines plus a pitted band
3. Damage was seen at entry end of Process C
4. Damage was seen on Product X and only on some of Product Y
5. With these exceptions, damage was not seen on product coming off Process X.

From these very important pieces of information, the questions arose:
- What is different about Product Y compared to Product X?
- What is unique about Process A compared to Process B?
- Do they do the same thing?

Another two days of data collection followed, trying to narrow down the difference between Product X and Product Y. This study confirmed that the damage was only on product produced at Process X and that all of Product X was run on Process B.

So why were there three damaged exceptions from Process A? Further inspection showed that damage was quite different to that under investigation and totally unrelated to it.

Inspection of the main damaged product showed that the damage was always the same distance apart; a distance which aligned perfectly with the exit end of the Process B holding pad. And the pitted marks? They were not formed by tooling, as was confirmed when the metal from the holding pad was removed to see if the pitting was still there.

So it became clear that all possible causes relating to Storage Area 2 were false as you would have expected this damage to occur also for Process A which had different to that under investigation and totally unrelated to it.

Crane 1 damage from storage area 1 is a result of the damage on one of the other storage areas. And the pitted marks? They were not formed by tooling, as was confirmed when the metal from the holding pad was removed to see if the pitting was still there.

Holding pads at exit end to Process B were damaged. Taking debris from the holding pads it was confirmed that the debris was consistent with the pitting marks and that the debris was not formed by tooling. In the unlikely event he has your plan...

With this confirmed, a six-day, 24-hour data collection plan was prepared to gather enough relevant information to form a problem specification and find a solution. Data was collected at the red points marked on the diagram.

At these red points it was important to gather the following information to fully analyze all product increments:
- What products have the damage?
- What is the defect?
- Where can we go to see the defect?
- When is the defect caused?
- Can we observe the defect?

After collecting all this information, all possible causes were documented and tested against the sample data. No fewer than eight possible causes were impounded. These were:
- Holding pads at Storage Area 2 were dirty.
- Holding pads at Storage Area 2 were cracked and damaged.
- Waking bay at exit end to Process B was damaged.
- Waking bay at exit end to Process A and B was damaged.

The common belief among the manufacturing and operations staff was that the condition of the holding pads at Storage Area 2 was the root cause.

It was “obvious” to them because the area was not particularly clean, had damaged components, lots of complaints came from this area and, MOST importantly, it was not in their area.

After correlating the six days of data into a problem specification, the following information became apparent:

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ive years. They thought it was a mystery my client had lived with for almost four years. They thought it was a serious issue and cost benefit analysis could not justify implementation of their proposed solutions.

There were a significant number of clues providing some optimism in finding a solution. Two of these clues were:
- Not all incoming product had the problem.
- Damage varied between products.

With this renewed optimism, a six-day, 24-hour data collection plan was prepared to gather enough relevant information to form a problem specification and find a solution. Data was collected at the red points marked on the diagram.

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- Holding pads at Storage Area 2 are cracked and damaged.
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- Waking bay at exit end to Process A and B was damaged.
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The common belief among the manufacturing and operations staff was that the condition of the holding pads at Storage Area 2 was the root cause. This was "obvious" to them because the area was not particularly clean, had damaged components, lots of complaints came from this area and, MOST importantly, it was not in their area.

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THROUGHPUT

Kepner-Tregoe Australia
BEng (Hons), CEng
A consultant with

more steps on the way to Lean manufacturing
when even a 99 per cent performance level is not anywhere near good enough ...

BY TANYA DICKINSON

More steps on the way to Lean Manufacturing
When even a 99 per cent performance level is
not anywhere near good enough ...

BY JONATHAN BUCK

The secrets of fast-tracking to beat the cynics
What it takes to deliver success and keep Project
Blitz on track for a successful outcome

What one plant manager thinks of The Blitz

Most people have heard of Six Sigma but few really
understand what it is or how to implement it. For the results are
astounding and it’s little wonder that interest in it is so exciting.

Most companies operate at a 3-sigma level (approximately 99.73 per cent)
right first time) and this means that they are generating an average of
between 62.9 million and 67.0 million defects per million opportunities.

Achieving a Six Sigma quality level equates to just 1.6 defects per million
opportunities, a big change in terms of the cost of quality alone.

For a lot of companies, a 99 per cent performance level is pretty good.
Imagine how our major airports operated at 99 per cent – we would
all be stuck on the tarmac and no-one would have ever had an</s>
THROUGHPUT

YIELD

Perfection is like trying to reach the pot of gold at the end of the rainbow but the journey along the way can yield experience 15 minutes of power loss right first time) and this means that more steps on the way to Lean Manufacturing

ost people have heard of Six Sigma but few really understand what it is or how to implement it. Yet the results are astonishing and it’s little wonder that interest in it is so exciting.

Most companies operate at a 3 or 4 sigma level (approximately 90 per cent right first time) and this means that they are generating an average of between 0.2 to 0.8 defects per million opportunities.

Achieving a Six Sigma quality level equates to just 3.4 defects per million opportunities, a huge saving in terms of the cost of quality alone.

For a lot of companies, a 99 per cent performance level is pretty good. Imagine how our major airports operated at 99 per cent - we would all be on our feet waiting in the check-in line day and night! And if our electricity companies operated at 99 per cent we would experience 15 minutes of power loss every day.

Our airports and power utilities are just two examples of companies already operating at a Six Sigma level.

Six Sigma originated from Motorola in the 1980s and really took off in the 1990s when Jack Welch and General Electric incorporated the methodology into everything they did. Five years later they reported more than $9Billion in benefits from Six Sigma activities alone. This spurred many companies to start their journey to Six Sigma.

Six Sigma can be defined as:

1. A statistical measure of the performance of a process, product, department etc.
2. A set of tools designed to radically improve operational performance to meet or exceed customer needs and still remain in business objectives.
3. A goal to reach near perfection.
4. A system of management to achieve lasting business leadership.
5. A benchmark to compare the quality level of processes within an organisation and between organisations.
6. A vision of taking an organisation to a status of best-in-class leadership.

Implementing a Six Sigma program goes to happen overnight, it takes time to train teams in the Six Sigma tools and techniques and to identify improvement projects that will contribute significantly.

Critical thinking skills are invaluable for all involved in that they force us to rethink and use data to solve problems, make decisions and prevent problems in the future.

Critical thinking processes should be applied throughout the Six Sigma journey. At the outset, they are used to assist in defining and identifying the key areas for improvement.

Improvement projects must then be prioritised and planned. Once key data is collected and measured the problems must then be identified and isolated. Critical thinking must be evaluated, considering both benefits and risks, and the most appropriate chosen. A robust and systematic project management methodology must then be used to ensure successful implementation and sustainable long-term results.

Ultimately, Six Sigma is about having a common focus on excellence throughout the whole organisation, delivering top quality services and products to the eyes of the customer, and virtually eliminating all internal inefficiencies.

Reducing delays and mistakes results in higher customer satisfaction, happy customers tend to purchase more products or increase their use of a service. They also tend to tell their friends and colleagues how happy they are which can further increase sales and market share.

What makes a successful project is having the right team of people with the right expertise, management and systems in place. However, the key to delivering Six Sigma results is to have the right team in the right place, at the right time, with the right resources to deliver the project.

The implementation model used to overcome these barriers is a fast-track bespoke approach. And the core of this approach is a solid foundation of the disciplined application of Lean techniques, Six Sigma methods and project management techniques.

The three primary issues exist to varying degrees of competence in different organisations but the Six Sigma model is driven by specific results and aimed at both people and technical projects.

The driving needs to be done by a team of external specialist consultants and key direct members.

Why is it so rare for organisations to deliver this model? Why do so many projects go awry in their implementation and fail? The ability to understand and change the motivators and consequences of all individuals and departments impacted, the workplace culture, customs and practices is fundamental to achieving a successful turnaround.

BY TANIA DICKINSON

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More steps on the way to Lean Manufacturing

When even a 99 per cent performance level is not anywhere near good enough …

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To add a friend or colleague to our newsletter distribution list, please email: jtimbs@kepner-tregoe.com

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The solution to these problems and lost opportunities are there to be exploited. Our ability to grasp them and run with the outcomes is the difference between being with the competition or ahead of it. For every opportunity we don’t exploit, we create a chance for our competitors.

Risk assessment is fine and will help avoid traps in planning. But it is equally important to understand the effort needed to deal with the effect of a problem or to capitalize on an opportunity. Too little too often is more of an embarrassment than not thinking of the problem at all.

With the amount of effort needed to develop our projects, it is important that we go the extra distance to create a high-performance environment in which the deployment of scarce resources creates maximum value for business initiatives.

A culture of project risk management-thinking can help us produce that environment and ought to be encouraged by senior executives involved in project design and implementation.

The military takes a view that no plan survives contact with the enemy, stated in the unlikely event he be your plan and is willing to be the foe. It’s a mission with a ready place in business.

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1. Damage applied to all widths, weights, grades and gauges of product.
2. The damage consisted of distinct lines plus a pitted band.
3. Damage was seen at entry end of Process C.
4. Damage was seen on Product X and only on some of Product Y.
5. With these exceptions, damage was not seen on product coming off Process A.

From these very important points of information, the questions arose:

- What is different about Product Y compared to Product X?
- What is unique about Process A compared to Process B? They do the same thing!
- What is unique about Process B compared to Process C?

Another two days of data collection followed, trying to narrow down the differences between Product X and Product Y. This study confirmed that the damage was only on product produced at Process B and that all of Product X was run on Process B. So why were there three damaged exceptions from Process A? Further inspection showed that this damage was quite different to that under investigation and totally unrelated to it.

Inspection of the main damaged product showed that the damage was always the same distance apart, a distance which aligned perfectly with the exit end of the Process B holding pads. And the pitted marks? They were always the same distance apart, a distance which aligned perfectly with the mobile chair that transported the product to the holding pads.

So it became clear that all possible causes relating to Storage Area 2 were false as you would have expected this damage to occur also for Process A product. Similarly, damage at the entry end of Process B could be expected in Process A product.

Future damage was prevented by putting a rubber surface and rubber base on the red chair for a total cost of $500 in terms of yield, approximately $1.2 million.

Four-year-old mystery is solved to save millions

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Private Advice

The problem analysis solved four-year mystery

1. Holding pads at Storage Area 2 are dirty.
2. Holding pads at Storage Area 2 are too small and damaged.
3. Waiting bay at exit end to Process C is damaged.
4. Waiting bay at exit end to Process A is damaged.
5. Waiting bay at exit end to Process A and B is damaged.

The common belief among the manufacturing and operations staff was that the condition of the holding pads at Storage Area 2 was the root cause. This was “obvious” to them because the area was not particularly clean, had damaged components, lots of complaints came from this area and, MOST importantly, it was not in their area.

After correlating the six days of data into a problem-solution correlation, the following information became apparent:

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BY NEVILLE PINKHAM

The military takes a view that no plan can save all. There are bound to be surprises. There is a massive risk of those which are unforeseen or unexpected. The problem is to deal with the potential of surprises, to help reduce those surprises. There is the potential of hearing from your competitors, that your plan wasn’t as well thought through as theirs. That’s the problem with planning. It’s nearly impossible to predict what the outcome might be.

But there are opportunities there to be exploited. Our ability to grasp them and run with the outcomes is the difference between being with the competition or ahead of it. For every opportunity we don’t exploit, we create a chance for our competitors.

Risk assessment is fine and will help avoid traps in planning. But it is equally important to understand the effort needed to deal with the effect of a problem or to capitalize on an opportunity. The little too late is often more of an embarrassment than not thinking of the problem at all.

A basic thinking process that causes people to consider the realities of assessment and management can turn an outcome and lead to dissatisfied project owners.

As a result, we go the extra distance to create a high level of awareness and understanding. We don’t have a plan for every eventuality, but we do have a plan for when the problem arises. If we recognize and exploit a window of opportunity not recognized and exploited by others, we can help avoid traps in planning. But it is equally important to understand the effort needed to deal with the effect of a problem or to capitalize on an opportunity.

The military’s view is, surprise is always the same distance apart; a distance which shifted partially with the end of the Process B holding pads. And the pilot insisted that it was impossible for them to operate on a work path that transported the product to the holding pads.

So it became clear that all possible causes relating to Storage Area 2 were false as you would have expected this damage to occur also for Process A product. Similarly, damage at the entry / exit end of Process B would be expected on Process A product. But there is quite different to that under investigation and totally unrelated to it. The process damage of the main damaged product showed that the damage was always the same distance apart: a distance which shifted partially with the end of the Process B holding pads. And the pilot insisted that it was impossible for them to operate on a work path that transported the product to the holding pads.

It was quite different to that under investigation and totally unrelated to it. The process damage of the main damaged product showed that the damage was always the same distance apart: a distance which shifted partially with the end of the Process B holding pads. And the pilot insisted that it was impossible for them to operate on a work path that transported the product to the holding pads.

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5. With those exceptions, damage was not seen on product coming off Process A.

From these very important points of information, the questions arose:

What is different about Product Y compared to Product X?

What is unique about Process A compared to Process B? They do the same thing!

Another two days of data collection followed, trying to unravel the difference between Product X and Product Y. This study confirmed that the damage was only on product produced at Process B and that all of Product X was run on Process B. So why were these three damaged exceptions from Process A? Further inspection showed that this damage was quite different to that under investigation and totally unrelated to it.

Implications of the main damaged product showed that the damage was always the same distance apart: a distance which shifted partially with the end of the Process B holding pads. And the pilot insisted that it was impossible for them to operate on a work path that transported the product to the holding pads.

Future damage was prevented by putting a rubber surface and rubber band on the coil chair for a total cost of $4000 and saved the business, in terms of yield, approximately $3.2 million.

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