

ELECTRONICS AND ENGINEERING

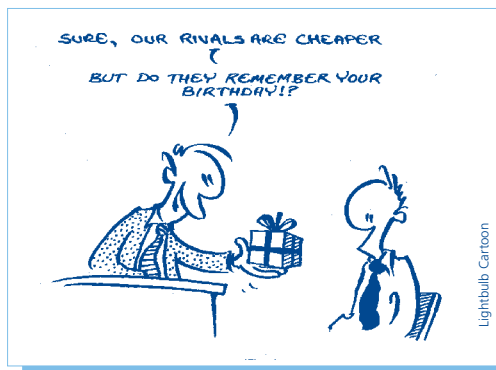
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Achieving 6 Sigma Performance in Business Processes

Focus on Customer Intimacy

Companies are increasingly seeking competitive advantage through superior customer service and intimacy rather than focusing simply on quality and price. In the old days, the main focus of improvement initiatives was on manufacturing processes. In recent times, that focus moved to processes such as New Product Introduction, Procurement and Distribution. Today, with such a strong emphasis on leadtime and customer intimacy, the spotlight has finally fallen on the administrative processes at the customer interface, e.g. order handling.



It's not easy!

There are a host of tried and trusted tools and techniques for controlling and improving the capability of manufacturing processes. Physical processes are typically easy to define (e.g. through flowcharting) and even more importantly their performance is easy to measure. The same cannot generally be said for administrative processes. As a result, people typically struggle to apply standard improvement techniques to administrative processes. More often than not, they give up after a brave start and a lot of ill-advised trumpet blowing.

What is 6 Sigma Performance?

Motorola are famous for their 6 sigma philosophy which they applied with equal fervour to both manufacturing and non-manufacturing processes. They set 6 sigma capability and performance targets which is equivalent to 99.9997% right first time i.e. near zero defects. This could mean that response time to a customers' invoice query was outside the defined standard on just three occasions per million. Financial institutions have led the way in adapting and developing tools and techniques for improving the capability and performance of administrative business processes.

How can 6 sigma performance be pursued?

The steps & techniques involved in improving a business process are no different to those used to improve a physical process. They are summarised in the table below:

Step	Techniques
Set up a cross functional team & steering group	Belbin team roles exercise or similar
Define the Problem & Set Measurable Objectives	Problem Statements, Data Gathering & Analysis, Process Capability Studies
Identify the Causes & Choose the Main Causes	Flowcharts, Fishbone Diagrams, 5 Why's, Pareto Analysis, Waste Elimination
List & Choose Solutions	Brainstorming, Experimentation, Poka Yoke, FMEA, QFD
Plan the Implementation	Cost Justification, Gantt Charts, Force Field Analysis
Implement	Project Management
Monitor	Control Charts
Permanent Fix	Regular Audits

The Pitfalls

The reason for the failure of most process improvement initiatives is a lack of ownership for the new processes at a senior level in the organisation. A 'Process Owner' should always be appointed and this individual should be clearly responsible for the measurable performance of the process - whatever is measured will improve. Sadly, only a minority of organisations manage to sustain the measurement of business process performance. Those that do notice the control limits on their charts coming closer together every time they review them, and one day they reap the reward for their efforts: 6 Sigma performance.

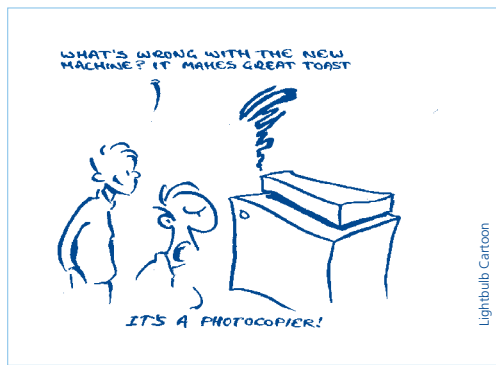
Useful web sites

www.eb-mag.com - An excellent source of information on the electronics industry.
www.manufacturingsystems.com
 Provides information on the latest in IT and software solutions for manufacturing. There is also an associated European site at www.manufacturing-europe.com
www.ecommercetimes.com - This site looks at ecommerce, it includes what is currently happening and what the trends are.

Success in Introducing New Products to Manufacturing

Many electronics and engineering companies have been successful over the last ten years in reducing the time to market for new products. Nevertheless, the element of new product introduction that remains troublesome is transferring the design to production and the first full production run.

Problems such as poor product quality performance, incorrect specifications, raw material shortages etc. are often experienced during the introduction of the product into production. These are not just frustrating for those involved but potentially jeopardise the future for the new product. Successful companies can be characterised by the best practices used in overcoming these problems. This article provides an overview of some of these.



Clearly Defined and Communicated Processes:

Diagramming techniques such as Process Flow Maps, Block Diagrams and so on are used in defining and communicating the critical stages and tasks of the process and the way they extend across different functions. Roles and responsibilities of key personnel involved are clearly documented and communicated. This ensures no misunderstanding of process tasks and responsibilities.

Detailed Project Plans: Gantt Charts and critical path analysis are used to show the sequencing of tasks (identifiable from the process), timelines, and resources. Project plans play a pivotal role in ensuring timelines are met.

Design Engineering Techniques: In the product design stage techniques such as Quality Function Deployment (QFD) and Failure Mode Effect Analysis (FMEA) are used to great effect in facilitating the design of a reliable product, that's easy to manufacture and assemble.

New Product Introduction Project Teams: Projects are owned by New Product Introduction (NPI) project teams. The team comprises of representatives from all key functions and maintains ownership for the project until operational objectives (i.e. Quality, Cost and Delivery) are achieved. This focuses the team on fast, effective resolution of product issues.

Highly Trained Project Managers: The role of Project Manager is filled by highly competent individuals. Project Managers receive extensive training in all aspects of team leading and project management. This helps create

a good balance between task achievement and team performance.

Sharing of Product Information: Web enabled software applications are used to share project information (e.g. project plans, action lists) and product information (e.g. Bills of Materials, Approved Vendor Lists, Schematics etc) between departments, contract manufacturers and suppliers. This provides real time information to all relevant personnel and ensures effective version control and revision history of all critical documents.

Companies that embrace these best practices certainly experience fewer problems in introducing new products to production, but will also make significant savings in the process.

Sector Trends - Outsourcing Manufacturing

- Outsourcing manufacturing is now a huge growth industry. It is a \$60billion business and growing conservatively at 20% per year. Today only 20% of electronics manufacturing is outsourced. In 10 years time this is projected to be over 50%.
- The Big Guns are Solectron, Flextronics, Celestica and Jabil Circuit. Knocking at the door are Sanmina and MSL.
- Original Equipment Manufacturers (OEM) are rushing to contract out their manufacturing. Downward pressure on pricing is forcing the OEMs to look at outsourcing.
- The benefits of outsourcing are compelling. The OEM gets to concentrate on its core competencies - R&D and marketing. It reduces costs and it decreases debt because manufacturing is capital-intensive.
- Contract manufacturers are good at manufacturing because it is their business and they can gain substantial supply chain efficiencies and economies of scale by placing huge component orders with vendors.
- Rampant consolidation is expected in the industry. OEMs want one-stop shopping. They prefer that their contract manufacturer would offer both global reach and a broad range of services, from assistance with product design to shipping to retailers or end-users.
- The future concerns of OEMs are that they will become too dependent on contract manufacturers. A major OEM that doesn't outsource will find it difficult to be competitive on price. Another fear is that as contract manufacturers begin to offer everything from design to support, they may start to resemble the OEMs, albeit with much smaller margins.

*Summary of 'Outsourcers Ride Again'.
(www.upside.com)*

BSM Consulting help companies achieve significant performance improvement by developing processes, people and technology. If you are interested in finding out more about BSM, and in particular if you are interested in the topics discussed in this Newsletter, please contact us.

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