

SIGMA

NEWSLETTER

An Initiative of

Christ University Institute of Management

By

Lean Operations and Systems Management

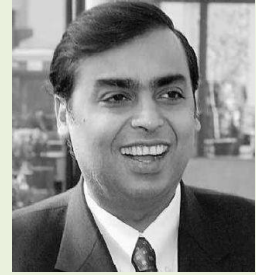
In the business world, everyone is paid in two coins: cash and experience.

Take the experience first; the cash will come later.

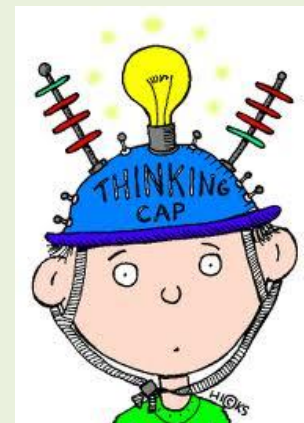
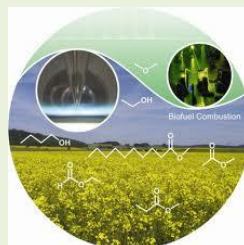
—Harold Geneen



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GURU OF THE MONTH

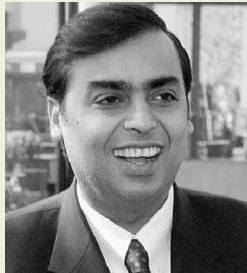
MUKESH AMBANI

Sebin Antony

3 MBA N



Mukesh Ambani is the CEO and Chairman of Indian business conglomerate Reliance Industries Ltd (RIL), the foremost company in Energy and Materials. It is the most valuable company in India in terms of market value and the second largest in terms of turnover. He was rated by the Forbes Magazine as one of the most powerful people in the world in its list of “68 people who matter most”. Also in 2012, Forbes named him the richest sports owner in the world, he co-owns the IPL team -Mumbai Indians.



Being the face of emerging India, Mukesh Ambani did his bachelors in Chemical Engineering from University of Mumbai and MBA from Stanford University, USA. His Father Dhirubhai Ambani started off with a small business and later rose to become a legend of Indian Industry. Mukesh Ambani joined Reliance Industries in 1981 and led the companies backward integration into polyester fibers from textile and then to petrochemicals. During this process, he created 51 new manufacturing facilities, used latest technologies and increased the manufacturing capacities manifolds.

He is the one who created world’s largest ‘grassroots’ petroleum refinery in Jamnagar, Gujarat, with a capacity of making 660000 barrels (33 millions tons per year) as of 2010. It is integrated with petrochemicals, power, port and infrastructure related initiatives. Now, it has expanded to petroleum refining, oil and gas exploration and production.

The organizational architecture is really that a centipede walks on hundred legs and one or two don't count. So if I lose one or two legs, the process will go on, the organization will go on, the growth will go on.

- Mukesh Ambani

Mukesh Ambani also created his fathers dream project India's largest private telecom company Reliance Infocom (Reliance communications) with his brother Anil Ambani. It is now under Anil after the reliance empire split. He also started Reliance Retail stores and entered into the emerging retail market of the country with his brand of Reliance Trends and Reliance Fresh. Recently he was in talks with the Harayana government for setting up SEZ (Special economic zone) with an investment running into thousands of crores of rupees.



Mukesh Ambani is the chairman of Indian Institute of Management, Bangalore; Managing Director, Chairman of Finance Committee and Member of Employees Stock Compensation Committee of Reliance Industries Limited; Chairman of the Board, Reliance Petroleum; Chairman of Audit Committee, Reliance Retail Limited; Chairman, Reliance Exploration and Production DMCC ; Director, Member of Credit Committee and Member of Compensation & Benefits Committee, Bank of America Corporation and also the President of Pandit Deendayal Petroleum University, Gandhinagar, Gujarat.

He has been awarded with many accolade. He was chosen as the business leader of the year 2010 by NDTV India; Business man of the year 2010 by financial chronicles and ET business leader of the year 2006. Mukesh Ambani was also conferred the Asia Society Leadership Award by the Asia Society, Washington D.C., USA and Global leadership award by Business Council for international understanding in the year 2010.

As of 2013 he is the richest man in India, and he retained the position of world's richest Indian for sixth year in a row. He is also listed as world's 22nd richest man in the world with a personal wealth of \$21.6 Billion.

Mukesh Ambani is married to Nita Ambani and has three children. He has the world's most expensive home called Antilla, which is a 27 storey home worth \$2 billion, built in South Mumbai.

NEWS

Kunal Singh 3MBA K

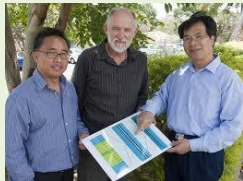


New Energy Storage method developed

by Canadian Researchers

Energy is present in the form of Kinetic energy and Potential energy which can be stored by a device or physical media, sometimes called as an accumulator. Canadian researchers, at university of Calgary have developed a Ground Breaking Method to store energy which is created by wind turbines and solar panels to perform useful operations at a later time. This is an inexpensive method of storing and reusing electricity produced by wind turbine. It is developed to realize clean energy economy and opens new field of catalytic materials. This method uses electrolyzers for storage purpose. Electrolyzers use catalysts to create a chemical reaction that converts electricity into energy by splitting water into hydrogen and oxygen, which can then be stored and reconverted to electricity for use whenever needed. One of the catalysts used is rust that captures energy through electrolysis of water.

Source: <http://www.thehindubusinessline.com/news/science/canadian-researchers-develop-energy-storage-system/article4564282.ece>



Scientists unlock key genetics codes of wheat

China is the largest wheat producer in the world followed by India and US. A research has been conducted by a team from Institute of Genetics and Development Biology (under the Chinese Academy of Sciences), and the University of California to map key genetic code for bread wheat that helps in improving crop's productivity and ability to sustain in extreme conditions. Bread wheat is one of the most widely consumed crops in the world which feeds around 40% of the world population. State-run Xinhua news agency has reported that around 38,000 wheat genes is expected to help provide a valuable resource for accelerating deeper genomic breeding studies and offer a new foundation for the study of wheat evolution, domestication and genetic improvement. This development of genetic diversity will encourage the efforts made to increase crops yield, improve quality and provide resistance to cold, drought and disease. However, the extremely large size and polyploidy complexity of the wheat genome have so far posed substantial barriers for researchers to gain insight into its biology and evolution.

Source: <http://www.thehindubusinessline.com/news/international/scientists-unlock-key-genetic-code-of-wheat/article4547021.ece>



HP Launches ‘Project Moonshot’ Low-power server

HP has launched a new low-power server called Project Moonshot — terminology that should conjure images of Google Glass and a self-driving car — and it's said to be the result of more than ten years of research. Having a server size of a hardcover book, Moonshot uses 89 percent less energy than traditional servers that are currently being used while taking up 80 percent less space and costing 77 percent less. Moonshot is build with graphics processors available in customizable ARM-based designs to use flash or hard-drive storage. HP's target market is social media, cloud, and mobile services from data centers. Though, companies like Google and Facebook have already opted to build their own servers. Project Moonshot may be a cold play for them. Moonshot is a company's attempt to overcome its mistakes of a decrease of 15 percent in revenues year-over-year, highlighted by four different CEOs, a mishandled purchase of Palm and an \$8.8 billion write down on its acquisition of Autonomy.

Source: <http://www.theverge.com/2013/4/8/4196598/hp-turnaround-focused-on-project-moonshot-low-power-server>



Biofuels are unethical and harm the environment according to report

An independent study conducted by Nuffield Council of Bioethics, Headquarter in UK reveals that production of biofuel violates human rights, increases deforestation and is a threat to endangered species because of which legal requirements to put biofuels in petrol and diesel are unethical. Biofuels should be environmentally sustainable and contribute to a reduction of greenhouse gas emissions. Costs and benefits should be distributed in an equitable way thereby adhering to fair trade principles. Inquiry also demonstrates that European Renewable Energy policy is particularly weak when it comes to protecting the environment, reducing greenhouse gas emissions and avoiding human rights violations in developing countries. Researchers are on the verge to develop new types of biofuels which require less land and produce fewer greenhouse gases. The two main transport biofuels currently in use are bio-ethanol, made from maize and sugar cane, and biodiesel, made from palm and rape seed oil.

Source: http://www.manufacturingdigital.com/people_skills/biofuels-are-unethical-and-harm-the-environment-according-to-report

Ravi Krishna Srihasam

3MBA – M

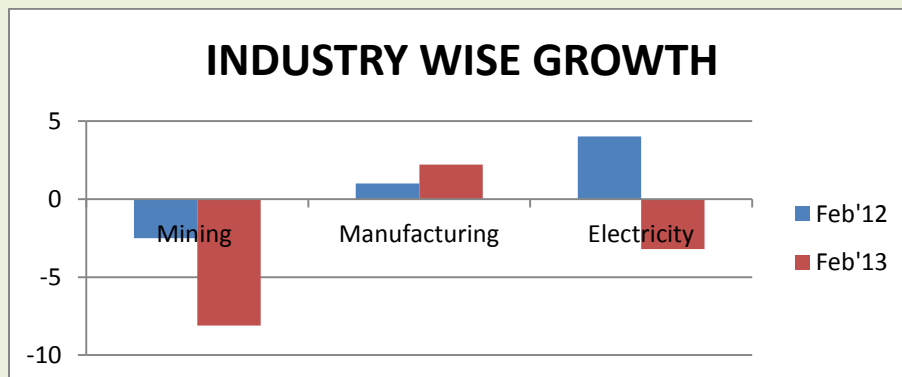


INDEX OF INDUSTRIAL PRODUCTION

The general index for the month of February 2013 stands at 176.2 which is 0.6% higher as compared to the level in the month of February 2012. Indices of Industrial Production for the Mining, Manufacturing and Electricity sectors for the month of February 2013 stand at 124.0, 190.9 and 140.5 respectively with a corresponding growth rate of (-) 8.1%, 2.2% and (-)3.2% as compared to the February 2012.

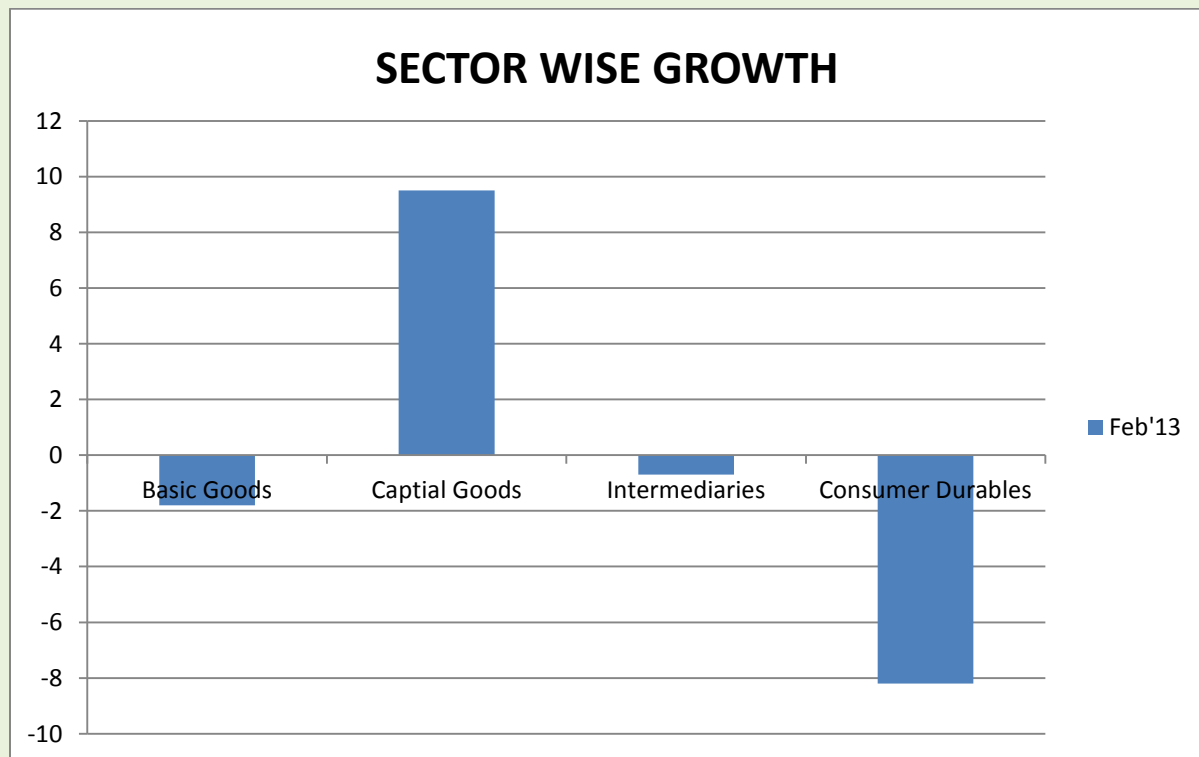
The cumulative growth in the three sectors during April-February 2012-13 over the corresponding period of 2011-12 has been (-) 2.5%, 1.0% and 4.0% respectively.

Sector	Feb'12	Feb'13
Mining	-2.5	-8.1
Manufacturing	1.0	2.2
Electricity	4.0	-3.2



The growth rates in February 2013 over February 2012 are (-)1.8% in Basic goods, 9.5% in Capital goods and (-)0.7% in Intermediate goods. The Consumer durables and Consumer non-durables have recorded growth of (-) 2.7% and 2.9% respectively, with the overall growth in Consumer goods being 0.5%.

Sector	Feb'13
Basic Goods	-1.8
Capital Goods	9.5
Intermediaries	-0.7
Consumer Durables	-2.7



COMPARISON OF SUPPLY CHAIN AND LOGISTICS



HEMANTH R
1221013

The terms "supply chain" and "logistics" are often used interchangeably within the transportation industry. They are, however, distinct areas, each involving specific processes, duties and responsibilities. The confusion in distinguishing between supply chain and logistics might stem from the fact that logistics is considered by many people to be a subcategory of supply chain management. The main difference between supply chain and logistics is that logistics is merely a specialized part of the entire supply chain process.

Generally, logistics focuses on the actual transportation and storage of goods. It deals with things such as inbound and outbound freight; reverse shipping, communications during transit, storage and warehousing. Logistics also deals with the delivery of goods and freight, coordination among third-party carriers, fleet management and other activities directly related to the actual transportation of goods from one point to another. Depending on the needs of a particular company, logistics management might also encompass manufacture and packaging, price negotiation for different aspects of transportation, third-party integration and procurement, technology, communications and customer service.

For the most part, supply chain encompasses a bigger picture. Supply chain management is the umbrella that covers all aspects of the sourcing and procurement of goods. Basically, supply chain management forms and manages the business-to-business links that allow for the ultimate sale of goods to consumers. Logistics, basically getting the freight from one place to the other, is a function that falls under the wide umbrella of supply chain management, but is only one part of the entire process.

Supply chain management is a broad, integrating process that entails many other aspects aside from logistics. Those aspects include finding and obtaining the goods to sell, negotiating pricing, manufacturing, storage, packaging and inventory control. Supply chain management also

includes distribution, cost allocation and control, third-party negotiation and collaboration as well as management of supply and demand. The broad territory covered by supply chain management is why some of these processes have splintered off into another subcategory of supply chain management known as demand planning, which, like logistics, can be viewed as a separate but related area of expertise.

The details and precise definitions for both the process of supply chain and logistics will vary from company to company and will overlap to certain degrees. By necessity, many of the duties and responsibilities pertaining to logistics management will cross over into supply chain management, and vice versa. Depending on the size and specialization of a particular company, the two areas might be lumped together as one, and the same individual might manage both the supply chain and logistics. Any person seeking to become involved in either supply chain management or logistics management within a company should ensure that the parameters of his or her responsibilities are clearly defined.

COMIC: Dilbert



MAPPING THE VALUE STREAM

ABHISHEK SINGH
MBA J



EXECUTIVE SUMMARY

This article outlines a tool – value stream mapping (VSM) – that will help industrial engineers enlighten managers, who still support obese manufacturing techniques and allow them to see the light of lean manufacturing. VSM is a map that outlines the current and future state of a production system, allowing users to understand where they are and what wasteful acts need to be eliminated. The user then applies lean manufacturing principles for transition to the future state. VSM is an outline of a product's manufacturing life cycle that identifies each step throughout the production process. This will help to design and introduce a lean value stream that optimizes the flow of the entire system - from information, to material, to finished goods arriving at the customer's door.

LEARNINGS

- The value stream includes the value-adding and non value-adding activities that are required to bring a product from raw material through delivery to the customer. In other words, VSM is an outline of a products manufacturing life cycle that identifies each step throughout the production process.
- Mapping the value stream is a big-picture technique that takes into consideration all processes and seeks to improve the enterprise as a whole.
- The overall goal of VSM is to move from batch and push to one-piece flow and pull through the entire value stream. The ultimate goal is to design and introduce a lean value stream that optimizes the flow of the entire system - from information, to material, to finished goods arriving at the customer's door. Lead-time, inventory, and over-production are therefore reduced; throughput, efficiency, and quality are improved.
- The importance of takt time lies in the goal of producing one unit just in time to replace a unit used by the customer - in other words, a cycle time based on one-piece flow. If cycle time exceeds takt time, the process will generate WIP, waiting, excess motion, damage, and other waste.

CURRENT STATE

1. The basis of lean manufacturing is product families. Everything in a lean organization (machines, R&D, marketing, engineering, and even maintenance) is organized around specific product families.
2. Fill in the data box with a list of customer requirements (value stream is based upon product families) such as units per day, number of shifts, complexity breakout, and other production information.
3. Outlining the basic supplier production process. Use a process box on the left side of the map to represent suppliers.
4. Connect all the icons with information flow icons. Draw the appropriate icon based on the type of information flow.
5. Internal mapping, the best place to start is in the shipping department. The team should break into small groups and document the process in reverse order. Working in reverse allows a better understanding of the flow and build of a product. Information needed from the production floor includes all machines, processes, WIP, inventory (raw and finished), and all cycle times within each process.
6. Identify waste.
7. Now that the current state of the value stream has been mapped, waste throughout the stream must be identified and eliminated to shorten lead-time and improve the value-added percentage - in other words, to transform the production system from a batch and push into a one-piece flow and pull. VSM allows the user to see the waste throughout the stream and imagine a future state that more closely resembles lean. However, the only way to identify the waste is to understand the seven elements that do not contribute to the value of the product: Overproduction, Inventory, Transportation, Waiting, Motion, Over-processing, and Correction (re-work).

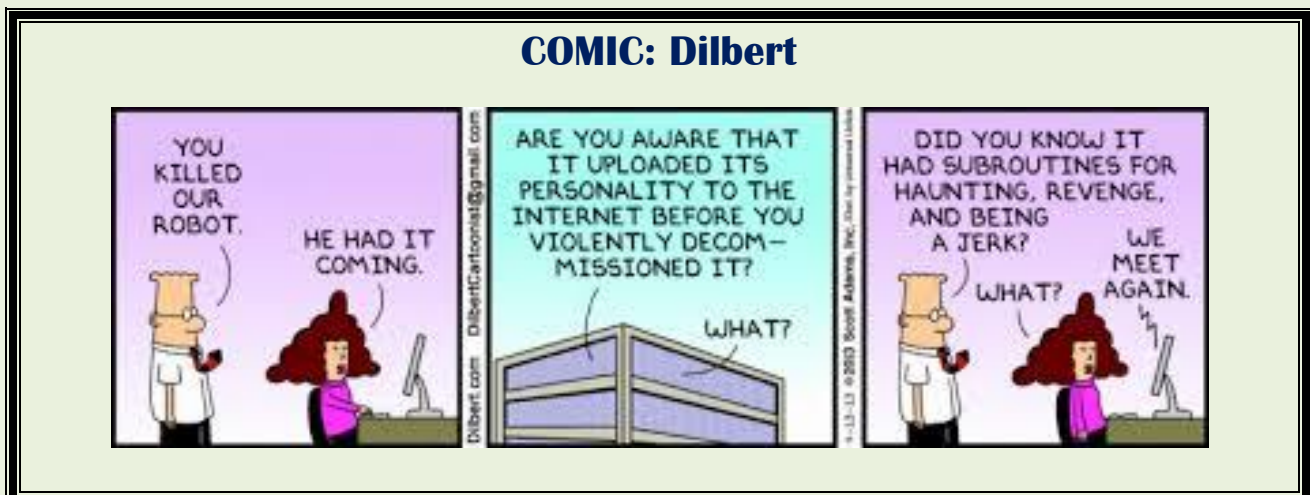
FUTURE STATE

1. The first step requires the calculation of takt time. Takt time is the number of units required by the customer per unit of time. To calculate takt time, use the following formula: $\text{takt time} = (\text{net operating time} / \text{period}) / (\text{customer requirements} / \text{period})$. Note that takt time is not cycle time. However, for a lean process, cycle time plus a small efficiency standard should equal takt time.

2. The continuous flow can proceed at a pace that guarantees takt time to be met. WIP, excess waiting, material handling, and over-processing are eliminated with continuous flow.
3. Once the future state is drawn, analyze the waste throughout the process and re-evaluate the map. Repeat this process as necessary during the event and over time after the event.
4. The extended value stream plan involves kaizen and re-evaluation of the future state once it has been implemented. The extended plan will also involve redefining the metrics used to evaluate the production system. This plan involves expanding the mapping events to all product families within an organization. Once this is accomplished, start working on VSM with suppliers. Huge amounts of waste can be eliminated through collaboration or joint ventures.

REFERENCE:

Jared Lovelle. IIE Solutions



Six Sigma: When ‘Green’ became more than just a colour to us

Abhishek Vatsa
3MBA I



It's only the dedication of our esteemed faculty members of the department, under the able guidance of HOD G. Ramachandran sir that we were able to pull off a 3-day "six sigma green belt ready workshop" amidst our already packed schedule of endless activities ranging from business analysis classes, live projects to our final exams scheduled to begin just 10 days after the conclusion of the workshop. The workshop started on 7th March 2013 which got concluded on 10th March 2013.

The workshop from the very start was focussed on getting the practical understanding of the concepts right. The most widespread misconception of six sigma being a "silver bullet" was thrashed in the first few hours itself. It's a universally accepted fact that change is the only thing which is constant, the six sigma implementation works towards making that change inclusive & sustainable via delivery of desired outcomes at every level of the process. We were clear by the first day that six sigma focuses on taking the quantum leap.



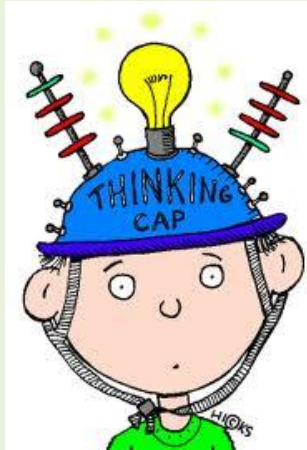
The second day, we were introduced to various jargons & way to handle a project of six sigma, right from the planning & putting that plan on a project charter. The clear definition of what can be achieved & what cannot be achieved through the project is very critical to the success of the project. All this comes under the first of the five step process of DMAIC (**D**efine, **M**easure, **A**nalyse, **I**mprove, and **C**ontrol) i.e. *define phase*.

The *measure phase* focussed on the correct method & accuracy of the data collection, with the answers of the basic questions like what, when, where, Why, How data collection plan is to be executed, we were a little more confident of our skills on handling of a project. *Analyse phase* mainly aimed at develop & design alternatives with the help of spectrum of tools.

Improve phase aims at optimization of the current process in place again using a number of optimization techniques, which is not only limited to the theoretical paradigm but also includes running a pilot to establish process capability.

Finally, *control phase* ensures that the established process results in zero defect & the process itself becomes robust enough to eliminate any deviations before it results in a defect.

Upon the completion of the workshop, we all were subjected to a small test to judge our conceptual understanding of six sigma, which seemed like a cakewalk after the wonderful illustration by our trainers.



THINKING CAP

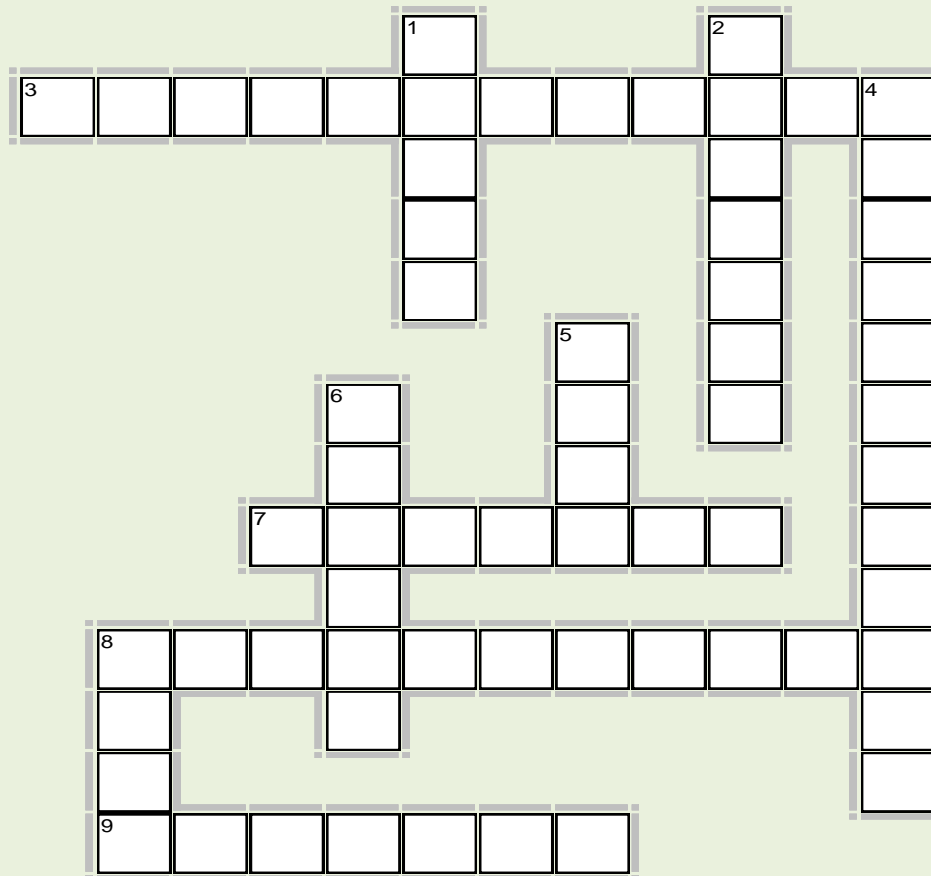
Mayank Kumar Gupta

3 MBA-M



1. India has concluded a \$6 billion missile deal with which country on 14th Feb'13?
2. What is called as the average of errors made by the forecast over a period of time without considering the direction of error?
3. Which manufacturing company is likely to have the most complex inventory decisions?
4. Cost minimization is an appropriate strategy in _____ stage of the product life cycle.
5. What all are the major categories of costs associated with quality?
6. Gujarat has been ranked on top for attracting investment across the country -- cornering about 14 per cent of total outstanding private sector investment worth over Rs 75 lakh crore as of December 2012. Which Indian state was ranked 2nd after Gujarat?
7. 9 states and 1 union territory have signed tripartite agreements with the Centre and Bharat Broadband Network to lay "optical fibre network" for providing broadband services at gram panchayat level. Which are those states & union territory?
8. Infosys Ltd. has marked its biggest percentage loss since April 2003 as investor sentiment turned bearish on lower-than-expected dollar revenue growth forecast for the current fiscal. By what percentage has Infosys Ltd. plunged?
9. In the use of relationship charts for office layouts, the code "U" meaning the closeness between two departments is _____.
10. The process of deciding how to assign tasks to work stations in a product layout is referred as _____.

Crossword



EclipseCrossword.com

Across

3. When the quantity at hand of an item drops to this amount, the items are ordered.
7. A document that holds the information regarding the stock level in the stock room.
8. Also called as 80-20 chart.
9. ____ Ohno identified the 7 mudas.

Down

1. One of the 5S.
2. A routing of supply or delivery vehicle to make multiple pickups or drops at different locations on a regular basis.
4. A system in which two containers are maintained and reordering is done when the first is empty.
5. A tool to identify, estimate, prioritize and evaluate the risk of possible failures in a process.
6. Japanese word for continuous improvement.
8. US Navy first used this tool to evaluate its Polaris missile.

Answers for Thinking Cap:

1. France
2. Mean Absolute Deviation
3. Computer manufacturing company
4. Decline
5. Prevention costs, appraisal costs, internal failure costs & external failure costs.
6. Odisha
7. Assam, Bihar, Gujarat, Himachal Pradesh, Jammu & Kashmir, Maharashtra, Nagaland, Odisha, Punjab & Andaman and Nicobar islands.
8. 20 %
9. Unimportant
10. Line balancing.

Solution for Crossword

Across

3. **REORDER POINT**—When the quantity at hand of an item drops to this amount, the items are ordered
7. **BIN CARD**—A document that holds the information regarding the stock level in the stock room
8. **PARETO CHART**—Also called as 80-20 chart.
9. **TAIICHI**— Ohno identified the 7 mudas

Down

1. **SEIRU**—One of the 5S
2. **MILK RUN**—A routing of supply or delivery vehicle to make multiple pickups or drops at different locations on a regular basis
4. **TWO BIN SYSTEM**—A system in which two containers are maintained and reordering is done when the first is empty.
5. **FMEA**—A tool to identify, estimate, prioritize and evaluate the risk of possible failures in a process
6. **KAIZEN**—Japanese word for continuous improvement
8. **PERT**—US Navy first used this tool to evaluate its Polaris missile

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