Unit – 5
Management Information Systems (MIS)

MIS is the use of information technology, people, and business processes to record, store and process data to produce information that decision makers can use to make day to day decisions.

MIS is the acronym for Management Information Systems. In a nutshell, MIS is a collection of systems, hardware, procedures and people that all work together to process, store, and produce information that is useful to the organization.

The need for MIS

Decision makers need information to make effective decisions.

Management Information Systems (MIS) make this possible.

MIS systems facilitate communication within and outside the organization

Employees within the organization are able to easily access the required information for the day to day operations. Facilitates such as Short Message Service (SMS) & Email make it possible to communicate with customers and suppliers from within the MIS system that an organization is using.

Record keeping

Management information systems record all business transactions of an organization and provide a reference point for the transactions.

Components of MIS

The major components of a typical management information system are;

People – people who use the information system

Data – the data that the information system records

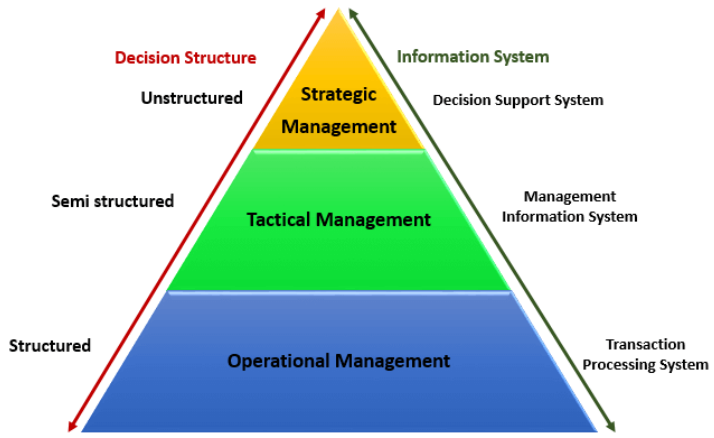
Business Procedures – procedures put in place on how to record, store and analyze data

Hardware – these include servers, workstations, networking equipment, printers, etc.

Software – these are programs used to handle the data. These include programs such as spreadsheet programs, database software, etc.

Types of Information Systems

The type of information system that a user uses depends on their level in an organization. The following diagram shows the three major levels of users in an organization and the type of information system that they use.



Transaction Processing Systems (TPS)

This type of information system is used to record the day to day transactions of a business. An example of a Transaction Processing System is a Point of Sale (POS) system. A POS system is used to record the daily sales.

Management Information Systems (MIS)

Management Information Systems are used to guide tactic managers to make semi-structured decisions. The output from the transaction processing system is used as input to the MIS system.

Decision Support Systems (DSS)

Decision support systems are used by top level managers to make semi-structured decisions. The output from the Management Information System is used as input to the decision support system.DSS systems also get data input from external sources such as current market forces, competition, etc.

Manual Information Systems VS Computerized Information Systems (MIS)

Data is the bloodstream of any business entity. Everyone in an organization needs information to make decisions. An information system is an organized way of recording, storing data, and retrieving information.

Manual Information System

A manual information system does not use any computerized devices. The recording, storing and retrieving of data is done manually by the people, who are responsible for the information system.

The following are the major components of a manual information system

People –people are the recipients of information system

Business Procedures –these are measures put in place that define the rules for processing data, storing it, analyzing it and producing information

Data –these are the recorded day to day transactions

Filing system – this is an organized way of storing information

Reports –the reports are generated after manually analyzing the data from the filing system and compiling it.

The following diagram illustrates how a typical manual information system works

The following are the advantages of manual information systems

Cost effective – it is cheaper compared to a computerized system because there is no need to purchase expensive equipment such as servers, workstations, printers, etc.

Flexible –evolving business requirements can easily be implemented into the business procedures and implemented immediately

Disadvantages:

Time consuming –all data entries need to be verified before filing, this is a time consuming task when done by humans. Retrieving data from the filing system also takes a considerable amount of time

Prone to error – the accuracy of the data when verified and validated by human beings is more prone to errors compared to verification and validation done by computerized systems.

Lack of security – the security of manual systems is implemented by restricting access to the file room. Experience shows unauthorized people can easily gain access to the filing room

Duplication of data –most departments in an organization need to have access to the same data. In a manual system, it is common to duplicate this data to make it easy to accessible to all authorized users. The challenge comes in when the same data needs to be updated

Data inconsistency – due to the duplication of data, it is very common to update data in one file and not update the other files. This leads to data inconsistency

Lack of backups – if the file get lost or mishandled, the chances of recovering the data are almost zero.

Computerized information system

Computerized systems were developed to address the challenges of manual information systems. The major difference between a manual and computerized information system is a computerized system uses a combination of software and hardware to record, store, analyze and retrieve information.

Advantages:

Fast data processing and information retrieval – this is one of the biggest advantages of a computerized information system. It processes data and retrieves information at a faster rate. This leads to improved client/customer service

Improved data accuracy – easy to implement data validation and verification checks in a computerized system compared to a manual system.

Improved security – in addition to restricting access to the database server, the computerized information system can implement other security controls such as user's authentication, biometric authentication systems, access rights control, etc.

Reduced data duplication – database systems are designed in such a way that minimized duplication of data. This means updating data in one department automatically makes it available to the other departments

Improved backup systems – with modern day technology, backups can be stored in the cloud which makes it easy to recover the data if something happened to the hardware and software used to store the data.

Easy access to information – most business executives need to travel and still be able to make a decision based on the information. The web and Mobile technologies make accessing data from anywhere possible.

Disadvantages:

It is expensive to set up and configure – the organization has to buy hardware and the required software to run the information system. In addition to that, business procedures will need to be revised, and the staff will need to be trained on how to use the computerized information system.

Heavy reliance on technology – if something happens to the hardware or software that makes it stop functioning, then the information cannot be accessed until the required hardware or software has been replaced.

Risk of fraud – if proper controls and checks are not in place, an intruder can post unauthorized transactions such as an invoice for goods that were never delivered, etc.

Total Quality Management

Total Quality Management is an extensive and structured organization management approach that focuses on continuous quality improvement of products and services by using continuous feedback. Joseph Juran was one of the founders of total quality management just like William E. Deming.

Total quality management originated in the industrial sector of Japan (1954). Since that time the concept has been developed and can be used for almost all types of organizations such as schools, motorway maintenance, hotel management and churches. Nowadays, Total Quality Management is also used within the e-business sector and it perceives quality management entirely from the point of view of the customer. The objective of total quality management is doing things right the first time over and over again. This saves the organization the time that is needed to correct poor work and failed product and service implementations (such as warranty repairs).

Total Quality Management can be set up separately for an organization as well as for a set of standards that must be followed- for instance the International Organization for Standardization (ISO) in the ISO 9000 series. Total Quality Management uses strategy, data and communication channels to integrate the required quality principles into the organization's activities and culture.

Total Quality Management principles

Total Quality Management has a number of basic principles which can be converted to the figure below.

Focus on customer

When using total quality management it is of crucial importance to remember that only customers determine the level of quality. Whatever efforts are made with respect to training employees or improving processes, only customers determine, for example through evaluation or satisfaction measurement, whether your efforts have contributed to the continuous improvement of product quality and services.

Employee involvement

Employees are an organization's internal customers. Employee involvement in the development of products or services of an organization largely determines the quality of these products or services. Ensure that you have created a culture in which

employees feel they are involved with the organization and its products and services.

Process centered

Process thinking and process handling are a fundamental part of total quality management. Processes are the guiding principle and people support these processes based on basis objectives that are linked to the mission, vision and strategy.

Integrated system

Following principle Process centered, it is important to have an integrated organization system that can be modeled for example ISO 9000 or a company quality system for the understanding and handling of the quality of the products or services of an organization.

Strategic and systematic approach

A strategic plan must embrace the integration and quality development and the development or services of an organization.

Decision-making based on facts

Decision-making within the organization must only be based on facts and not on opinions (emotions and personal interests). Data should support this decision-making process.

Communication

A communication strategy must be formulated in such a way that it is in line with the mission, vision and objectives of the organization. This strategy comprises the stakeholders, the level within the organization, the communications channels, the measurability of effectiveness, timeliness, etc.

Continuous improvement

By using the right measuring tools and innovative and creative thinking, continuous improvement proposals will be initiated and implemented so that the organization can develop into a higher level of quality.

BENEFITS OF TOTAL QUALITY MANAGEMENT

- Strengthened competitive position
- Adaptability to changing or emerging market conditions and to environmental and other government regulations
- Higher productivity
- Enhanced market image
- Elimination of defects and waste
- Reduced costs and better cost management
- Higher profitability
- Improved customer focus and satisfaction
- Increased customer loyalty and retention
- Increased job security
- Improved employee morale
- Enhanced shareholder and stakeholder value
- Improved and innovative processes

Supply Chain Management (SCM)

Supply chain management (SCM) is the broad range of activities required to plan, control and execute a product's flow, from acquiring raw materials and production through distribution to the final customer, in the most streamlined and cost-effective way possible.

SCM encompasses the integrated planning and execution of processes required to optimize the flow of materials, information and financial capital in the areas that broadly include demand planning, sourcing, production, inventory management and storage, transportation -- or logistics -- and return for excess or defective products. Both business strategy and specialized software are used in these endeavors to create a competitive advantage.

Supply chain management is an expansive, complex undertaking that relies on each partner -- from suppliers to manufacturers and beyond -- to run well. Because of this, effective supply chain management also requires change management, collaboration and risk management to create alignment and communication between all the entities.

In addition, supply chain sustainability -- which covers environmental, social and legal issues, in addition to sustainable procurement -- and the closely related concept of corporate social responsibility -- which evaluates a company's effect on the environment and social well-being -- are areas of major concern for today's companies.

Logistics vs. Supply Chain Management

The terms supply chain management and logistics are often confused or used synonymously. However, logistics is a component of supply chain management. It focuses on moving a product or material in the most efficient way so it arrives at the right place at the right time. It manages activities such as packaging, transportation, distribution, warehousing and delivery.

In contrast, SCM involves a more expansive range of activities, such as strategic sourcing of raw materials, procuring the best prices on goods and materials, and coordinating supply chain visibility (SCV) efforts across the supply chain network of partners, to name just a few.

Benefits of supply chain management

Supply chain management produces benefits such as new efficiencies, higher profits, lower costs and increased collaboration. SCM enables companies to better manage demand, carry the right amount of inventory, deal with disruptions, keep costs to a minimum and meet customer demand in the most effective way possible. These SCM benefits are achieved through the appropriate strategies and software to help manage the growing complexity of today's supply chains.

Importance of supply chain management

The impact of benefits, such as those discussed above, are what make SCM important to both the enterprise and consumer.

SCM activities can improve customer service. Effective supply chain management has the ability to ensure customer satisfaction by making certain the necessary products are available at the correct location at the right time. SCM can also increase customer satisfaction by delivering products to consumers on time and providing fast service and support whenever needed. By increasing customer

satisfaction levels, enterprises are able to build and improve customer loyalty, making the boost in customer service important for both the customer and business.

SCM also provides a major advantage for companies by decreasing the overall operating costs. SCM activities can reduce purchasing cost, production cost and total supply chain cost. By lessening operating costs, SCM is also able improve a company's financial position. The reduced supply chain costs can greatly increase a business's profits and cash flow. Furthermore, SCM can diminish the use of large fixed assets -- such as warehouses and transportation vehicles -- by allowing supply chain experts to redesign their network in order to properly serve and operate with five warehouses instead of eight, reducing the cost of owning an additional three facilities.

The lesser known importance of SCM can be found in its critical role in society. SCM can help ensure human survival by improving healthcare, protecting humans from climate extremes and sustaining human life. Humans rely on supply chains to deliver necessities like food and water as well as medicines and healthcare. The supply chain is also vital to the delivery of electricity to homes and businesses, providing the energy needed for light, heat, air conditioning and refrigeration.

SCM can also improve the overall quality of life by fostering job creation, providing a foundation for economic growth and improving standards of living. A multitude of job opportunities are opened up since supply chain professionals design and control all of the supply chains in a society as well as manage inventory control, warehousing, packaging and logistics. Furthermore, one commonality between most poor nations is their lack of a developed supply chain. Societies with strong, developed supply chain infrastructures -- such as large railroad networks, interstate highway systems and an array of airports and modern ports -- can efficiently exchange goods a lower costs, allowing consumers to buy more products, thus providing economic growth and increasing the standard of living in the respective society.

Supply chain complexity

The most basic version of a supply chain includes a company, its suppliers and the customers of that company. The chain could look like this: raw material producer, manufacturer, distributor, retailer and retail customer.

A more complex, or extended, supply chain will likely include a number of suppliers and suppliers' suppliers, a number of customers and customers' customers -- or final customers -- and all the organizations that offer the services required to effectively get products to customers, including third-party logistics providers, financial organizations, supply chain software vendors and marketing research providers. These entities also use services from other providers.

The totality of these organizations, which evokes the metaphor of an interrelated web rather than a linear chain, gives insight into why supply chain management is so complex. That complexity also hints at the types of issues that can arise, from demand management issues, such as a release of a new iPhone that chokes demand for old iPhone cases; to natural supply chain disruptions, such as the halt of transportation in the U.S. in 2015 due to extreme winter weather, or California's drought and its effect on crops; to political upheaval, such as the strikes in India that throttled movement at its largest container port.

ERP (enterprise resource planning)

ERP, or enterprise resource planning, is a modular software system designed to integrate the main functional areas of an organization's business processes into a unified system.

An ERP system includes core software components, often called modules that focus on essential business areas, such as finance and accounting, HR, production and materials management, customer relationship management (CRM) and supply chain management. Organizations choose which core modules to use based on which are most important to their particular business.

What primarily distinguishes ERP software from stand-alone targeted software -- which many vendors and industry analysts refer to as best-of-breed solutions -- is a common central database from which the various ERP software modules access information, some of which is shared with the other modules involved in a given business process. This means that companies using ERP are largely saved from having to make double entries to update information because the system shares the data, in turn enabling greater accuracy and collaboration between the organization's departments.

ERP implementation options include on premises, cloud and a mix of the two, called hybrid, such as with platform as a service and infrastructure as a service. Although ERP has historically been associated with expensive, monolithic, end-to-end implementations, cloud versions now enable easier deployments, which SMBs are taking advantage of in greater numbers.

How ERP works

ERP systems rely on a centralized relational database, which collects business information and stores them in tables. Having the data stored centrally allows end users, such as from finance, sales and other departments, to quickly access the desired information for analysis.

Instead of employees in different departments managing their own spreadsheets and reports, ERP systems allow for reporting to be generated from a single, centralized system. Information updated in one ERP module, such as CRM, HR and finance, is sent to a central, shared database. The appropriate information in the central database is then shared with the other modules.

Importance of ERP

Experts list four important business benefits of ERP:

- IT cost savings
- Business process efficiency
- A business process platform for process standardization
- A catalyst for business innovation

While businesses often focus on the first two areas because they’re easy to quantify, the latter two areas can create greater impact for businesses.

ERP makes real-time business data available throughout the organization, which enables businesses to adapt quickly and respond to changes. The business data available in ERP systems provides for more informed decision making within an enterprise. ERP systems can also share data with third party partners and vendors to improve efficiencies in the supply chain.

Benefits of ERP systems

ERP offers a plethora of benefits, most of which come from information sharing and standardization. Because ERP components can share data more easily than disparate systems, they can make cross-departmental business processes easier to manage on a daily basis. They can also enable better insights from data, especially with the newer technologies that many ERP systems are including, such as powerful analytics, machine learning and industrial IoT capabilities.

In addition, ERP software:

- boosts efficiencies by automating data collection;
- enables business growth by managing increasingly complex business processes;
- helps lower risk by enabling better compliance;
- fosters collaboration using data sharing and integrated information;
- provides better business intelligence and customer service capabilities; and
- improves supply chain management.

Advantages and Disadvantages

Many consider ERP software to be a requirement for enterprises -- especially for core business functions such as finance -- and the same is arguably true for growing SMBs. The sheer volume of data that companies generate, along with the complexity of the global business landscape and modern consumer demands, has made streamlining business processes and managing and optimizing data increasingly critical. An ERP software system is typically at the core of such capabilities.

That said, there are advantages and disadvantages to implementing ERP.

Advantages:

- ✓ Can save money over the long run by streamlining processes.
- ✓ Provides a unified system that can lower IT-related expenses and end-user training costs.
- ✓ Enables greater visibility into myriad areas of the business, such as inventory, that are critical for meeting customer needs.
- ✓ Enables better reporting and planning due to better data.
- ✓ Offers better compliance and data security, along with improved data, backup and the ability to control user rights.

Disadvantages:

- Can have a high upfront cost.
- Can be difficult to implement.
- Requires change management during and after implementation.

Basic, core ERP modules may be less sophisticated compared to targeted, stand-alone software. Companies may require additional modules for more control and better management of specific areas, such as the supply chain or customer relationship capabilities.

Performance Management

Performance management is a corporate management tool that helps managers monitor and evaluate employees' work. Performance management's goal is to create an environment where people can perform to the best of their abilities to produce the highest-quality work most efficiently and effectively.

A formal performance-management program helps managers and employees see eye-to-eye about expectations, goals, and career progress, including how individuals' work aligns with the company's overall vision. Generally speaking, performance management views individuals in the context of the broader workplace system. In theory, you seek the absolute performance standard, though that is considered unattainable.

How Performance Management Works

Performance-management programs use traditional tools such as creating and measuring goals, objectives, and milestones. They also aim to define what effective performance looks like and develop processes to measure performance. However, instead of using the traditional paradigm of year-end reviews, performance management turns every interaction with an employee into an occasion to learn.

Managers can use performance management tools to adjust workflow, recommend new courses of action, and make other decisions that will help employees achieve their objectives. In turn, this helps the company reach its goals and perform optimally. For example, the manager of a sales department gives her staff target revenue volumes that they must reach within a set period. In a performance management system, along with the numbers, the manager would offer guidance gauged to help the salespeople succeed.

Importance of Performance Management

Focusing on continuous accountability creates a healthier, more transparent work environment, and emphasis on regular meetings can improve overall communications. Because performance management establishes concrete rules, everyone has a clearer understanding of the expectations. When expectations are clear, the workplace is less stressful. Employees are not trying to impress a manager by doing some random task, and managers aren't worried about how to tell employees that they are not performing well. If the system is working, they probably know it already.

Types of Performance-Management Programs

Although performance-management software packages exist, templates are generally customized for a specific company. Effective performance-management programs, however, contain certain universal elements, such as the following:

Aligning employees' activities with the company's mission and goals:

Employees should understand how their goals contribute to the company's overall achievements.

Developing specific job-performance outcomes:

What goods or services does my job produce? What effect should my work have on the company? How should I interact with clients, colleagues, and supervisors? What procedures does my job entail?

Creating measurable performance-based expectations:

Employees should give input into how success is measured. Expectations include results—the goods and services an employee produces; actions—the processes an employee uses to make a product or perform a service; and behaviors—the demeanor and values an employee demonstrates at work.

Defining Job-development plans:

Supervisors and employees together should define a job's duties. Employees should have a say in what types of new things they learn and how they can use their knowledge to the company's benefit.

Meeting regularly:

Instead of waiting for an annual appraisal, managers and employees should engage actively year-round to evaluate progress.

Business Process Outsourcing (BPO)

Business process outsourcing, or BPO, is a business practice in which one organization hires another company to perform a task (i.e., process) that the hiring organization requires for its own business to successfully operate.

BPO has its roots in the manufacturing industry, with manufacturers hiring other companies to handle specific processes, such as parts of their supply chains that were unrelated to the core competencies required to make their end products.

However, organizations in other industries adopted the practice through the years. Now, the use of BPO has expanded so much that organizations of all kinds -- for-profit businesses, nonprofits, and even government offices and agencies -- contract with BPO service providers in the United States, throughout North America and across the world to perform numerous processes.

Application of BPO

Organizations engage in business process outsourcing for two main areas of work:

- ✓ back-office functions and
- ✓ Front-office functions.

Organizations can outsource a range of back-office functions (also referred to as internal business functions) including accounting, IT services, human resources (HR), quality assurance (QA) and payment processing.

Similarly, they can outsource various front-office functions, such as customer relation services, marketing and sales.

Organizations can also outsource specific functions (i.e., payroll) in those areas in addition to outsourcing an entire functional area (i.e., human resources).

Types of BPO

Because companies around the world provide BPO services to other organizations, BPO can be divided into different types based on the service provider's location.

Offshore Outsourcing: When an organization contracts for services provided with a company in a foreign country.

Onshore Outsourcing: When an organization contracts for services provided by a company that operates in the same country as the hiring organization.

Nearshore Outsourcing: When an organization contracts for services provided by companies based in neighboring countries.

Business process outsourcing is also sometimes referred to as information technology-enabled services, or ITES -- a name that recognizes that IT infrastructure enables outsourcing to happen.

Benefits of BPO

Organizations engage in business process outsourcing because they expect to benefit from the arrangement.

Financial benefits: Organizations often find that an outsourced provider can perform a business process at lower costs, or they often find that by contracting with an outsourced provider they can save money as a result of the relationship in other ways, such as in tax savings.

Flexibility: BPO contracts can allow organizations greater flexibility to adjust how it completes the outsourced business process, allowing them to better react to changing market dynamics.

Competitive Advantage: BPO allows organizations to outsource those processes that aren't core to their businesses or missions, thereby allowing organizations to focus more of its resources on the operations that distinguish them in the marketplace.

Higher Quality and Better Performance: Because the core business of BPO providers is performing the specific processes they're hired to do, they are, in theory, able to focus on providing those processes at the highest levels, often with greater accuracy, efficiency and speed.

Business Process Reengineering

Business Process Reengineering or BPR for short is a methodology and technique with which organisations radically change their business processes with the aim of becoming more efficient and more modern. The far-reaching measures that are taken after the decision to restructure a process not only concern formal procedures or other existing processes, but can also bring about radical changes in management style and corporate culture.

The founder of the Business Process Reengineering concept is Michael Hammer. Michael Hammer published the article 'Reengineering Work: Do not Automate, Obliterate 'in 1990. With this title, Hammer was saying that just automating processes is not enough. Hammer developed the BPR concept further with James Champy, after which they published their famous book, 'Reengineering the company, a manifesto for business revolutions', in 1993. In the most extreme form, BPR means the complete overhaul and rebuilding of processes. Only then can the organization's full potential be achieved, and only then will the organisation benefit from the changes.

The essence of BPR is to encourage process thinking: shifting from task focus to process focus to then removing all processes that do not create value for the customer. In this way, improvements are achieved that are only for the betterment of the performance criteria such as costs, efficiency, quality and service.

Why BPR?

Organizations that take part in Business Process Reengineering are the first to examine the organisation and its environment. Objectives play a leading role in shaping new processes or changing existing processes. Business Process Reengineering, invented by IT expert Michael Hammer, is mainly applied in information technology, but is a standardized model that can be used to optimize many processes or organisations. Benefits of using BPR are:

Shorten lead times

In information technology, in particular, there is a lot of potential that is not yet being used. Outdated processes, such as the manual execution of administrative matters, can be fully automated with an investment. The investments are recouped by the lower wage costs.

Increase productivity

The goal of BPR is to modernize outdated processes and that often yields time-saving results. For example, after performing BPR, the organisation can discover that a certain process can be carried out by two employees instead of four. It's important that the employees themselves provide input and come up with suggestions; after all, they know better than anyone else how the business processes work.

Improve quality and customer focus

By changing task orientation to process orientation, the focus is put on the customer. This has the advantage that all irrelevant processes quickly come to the foreground, after which they can easily be removed or modified.

Improve competitive position

Normally, changes that an organisation makes are only gradually noticed. In order to keep up with the competition, and to satisfy customer needs, however, we must act appropriately. BPR is ideally suited for this because the radical changes are implemented in a relatively short period.

Implement new technology

For example, an online webshop can choose to implement an extensive help centre with an interactive Q&A. The visitor can ask his or her question with the help of keywords and use the computer to look for a standardized answer. This way, the customer service employee won't be occupied and can keep themselves busy with something else.

A downside to adjusting business processes as quickly as possible in order to be able to work more efficiently is that some employees need more time to adjust than others. If an employee on Monday morning hears that their entire job description has been changed, this can seem overwhelming. Which is why it's very important that the changes that are implemented are well communicated to the employee, and that guidance is provided if necessary.

Steps in the change process

1. Create a vision

Before a process is reviewed or adjusted, there needs to be a clear picture of the reason for the change. It's important that the customer is the focus of this vision. The objectives must then be clarified in qualitative and quantitative terms. If the objectives are clear, it's important to convince the employees that the changes are necessary.

2. Select a team

A skilled team needs to be formed to get started with the changes and to minimize the chance of failure. It's valuable to set up a diverse team because creativity is essential in analyzing current business processes and developing new ones. For example, the problem is looked at from different perspectives and an accurate diagnosis is formed in the following steps.

3. Select and understand current process

The complete current process needs to be mapped out in order to optimise it. This can be done by using flowcharts and software. KPIs can then be linked to the relevant process in order to be able to monitor whether the process has the desired effect. This way, all matters that add no value to the process can be identified. These KPIs are compared in the following phases with the same indicators, but then for the new process.

4. Develop a new process

If the KPIs show that a current process is inefficient or ineffective, a new process must be drawn up. The customer-oriented vision from step 1 should be the guide here.

5. Implement a new process

Once the development and planning of the new process is complete, a small scale test can be run. If necessary, adjustments can then be made. The results and effects must be closely monitored with the KPIs. If it turns out that the new process works better than the previous one, it can be implemented on a larger scale.

6. Evaluate

In a highly dynamic environment, a lot changes, so sometimes the indicators can give a different picture over time. By running an evaluation, inconsistencies are noticed sooner and can be adequately anticipated.

Business Process Reengineering Example

One of the best-known examples of organisations that used BPR in an effort to become more efficient is Ford, a car manufacturer. In the 1980s, the car industry went through a recession, and the managers at Ford decided to analyse the business processes thoroughly. They noticed that over 500 people worked in the accounting department. For comparison: around 100 people worked in the same department at their competitor Mazda.

Despite Ford being a larger company, they decided to reduce the number of employees in that department to just a couple hundred people. Ford put together a team that started to analyze the processes.

Originally, separate invoices had to be made for all ordered materials that were sent from the purchasing department to the accounting department. When the materials were delivered, Ford received an invoice from the supplier. This was compared with the invoice that the purchasing department sent to the accounting department and then was paid manually.

Instead of making minor changes, Ford developed a completely new process. Information technology played an important role in this new process. They developed a database in which a notification was sent when the purchasing department had placed an order. When the materials were delivered, a warehouse employee would input this into the computer. The computer was able to verify in a fraction of a second whether the delivered materials were in order and then automatically paid.

Thanks to these changes in business processes, Ford reduced the number of administrative employees by 75%.

Benchmarking

Benchmarking is the measurement of an organization's internal processes and performance data and a comparison with those of related and comparable organizations. Preferably, these comparisons are made with businesses from the same sector, but it is possible to use benchmarking between businesses from other sectors as well. In these comparisons it mainly concerns the dimensions quality, time and costs of organizations that are about the same size and that more or less have the same outlet. In addition, it is about how certain features can be realized better, faster and cheaper.

Application

Benchmarking is used and applied within the (strategic) management of organizations. Several aspects of processes are evaluated against the best performance of other companies. It is however necessary that this comparison is made between companies with common features (peer group).Through this approach, organizations will acquire a better understanding of how they can tackle developments and improvements in the best possible way. This approach can be a non-recurring event, but it is increasingly used as a continuous process to improve the performance of the organization.

Types of benchmarking

There are different types of benchmarking that are oriented towards a specialty. Some examples are:

Process benchmarking

An organization researches its organizational processes to find out what the strengths of other organizations are. Analyses are made of the activities with respect to successful processes for reasons of cost reduction and efficiency.

Benchmarking from an investor perspective

Investors compare corporate performance, and look at opportunities and alternatives.

Product benchmarking

New products or upgrades for current products are designed based on comparative research. By comparing the competitors' products, the organization will discover the strengths and weaknesses of the current product.

Strategic benchmarking

This comparison involves observing the strategic policies of other organizations.

Procedure

There is not one single benchmark process that has been adopted. Various methodologies have been developed including this 6-step plan:

Identify the problem areas

Benchmarking can be applied to any operational process or to any function. Many investigation techniques are used such as having conversations with clients, staff and suppliers, marketing research, quantitative research, surveys, quality control and financial ratio analyses.

Identify other suppliers

By knowing in advance what the organization wants to compare specifically, it is possible to look more closely at comparable organizations. For example, when a

company wants to improve their complaint handling, it is interesting to identify the test fields that comparable organizations use for complaint handling.

Identify the leading organizations

Comparison is only successful when it is based on an organization that excels in the specific test field. Customers, suppliers, financial analysts, professional associations could lead to such organizations.

Approach investigation agencies

Investigation agencies have specific business processes at their disposal which they have acquired from qualitative and quantitative research.

Knowledge sharing

Organizations are often receptive to sharing knowledge and experience. Networking meetings are excellent opportunities to make contacts with other companies that have qualities in common. (peer group).

Implement new and improved processes

Development plans and execution plans will improve by putting into practice the most progressive and best practical experiences from the benchmarking study.

Costs

When a company chooses to benchmark its organization, it will incur costs. The three main types of costs are:

Visit costs

This includes all travel costs, hotel costs, meals, gifts and lost working hours.

Time costs

Employees involved in benchmarking will be investing time in researching problems and finding exceptional companies to study and compare.

Database costs

The costs for setting up and maintaining a database in which data are collected of the companies that is to be compared. The costs can be significantly reduced through using Internet resources. There is a wealth of information to be found on the Internet about various companies and organizations. This information will speed up the process and is therefore a much cheaper option.

Balanced Scorecard

The Balanced Scorecard (or balance score card) is a strategic performance measurement model which is developed by Robert Kaplan and David Norton. Its objective is to translate an organization's mission and vision into actual (operational) actions (strategic planning).

In addition, it can help provide information on the chosen strategy more, manage feedback and learning processes and determine the target figures. The (operational) actions are set up with measurable indicators that provide support for understanding and adjusting the chosen strategy. The starting points of the balanced scorecard are the vision and the strategy that are viewed from four perspectives: the financial perspective, the customer perspective, the internal business processes and learning & growth.

Financial perspective

The financial perspective is important for all shareholders and other financial backers of an organization. It answers the question: "How attractive must we appear

to our shareholders and financial backers?". This is mainly a quantitative benchmark based on figures from the past.

In addition, it provides a reliable insight into the operational management and the sustainability of the chosen strategy. The delivered added value from the other three perspectives will be translated into a financial success. This is therefore a quantification of the added value that is delivered in the organization. After all in the balanced scorecard, when there is a higher added value, the profits will also be higher.

Customer perspective

Each organization serves a specific need in the market. This is done with a target group in mind, namely its customers. Customers determine for example the quality, price, service and the acceptable margins on these products and/or services. Organizations always try to meet customer expectations that may change at any time. The existence of alternatives (those of the competitor) has a large influence on customer expectation. This perspective answers the question: "How attractive should we appear to our customers?"

Internal Business Processes

From the perspective of internal processes the question should be asked what internal processes have actually added value within the organizations and what activities need to be carried out within these processes. Added value is mainly expressed as the performance geared towards the customer resulting from an optimal alignment between processes, activities and decisions. This perspective answers the question: "What must we excel at to satisfy our customers and shareholders/ financial backers?"

Learning and growth

An organization's learning ability and innovation indicate whether an organization is capable of continuous improvement and/or growth in a dynamic environment. This dynamic environment is subject to change on a daily basis due to new legislation and regulations, economic changes or even increasing competition. This perspective answers the question: "How can we sustain our ability to achieve our chosen strategy?"

Balanced Scorecard implementation

The implementation of the Balanced Scorecard consists of a number of steps. The first step in this is that senior management sets up a mission, vision and strategy. This strategy is linked to a number of objectives which are referred to as strategic objectives. Then middle management is informed about the mission, vision and the strategic objectives. In an open discussion, managers can express their opinions, indicate the critical success factors per perspective and they can point out or set up indicators themselves so that these can be monitored in the future. For the financial and customer perspectives within the Balanced Scorecard it is possible to carry out a survey or conduct interviews among the (potential) shareholders or customers to assess what their expectations are. This could provide an insight into the direction of the objectives the necessary objectives.

In consultation with middle management and senior management several objectives are formulated in which the different critical success factors are indicated per objective, the indicators are used to measure this, specific values such as targets

and initiatives are meant to achieve these objectives. It is possible to go one step further by linking personal objectives to the objectives of middle management. As a result, all personal initiatives will contribute to the chosen strategy of the organization. The implementation of the Balanced Scorecard can be carried out in different manners.

Broadly, this could include the following steps:

- Set up a vision, mission and strategic objectives.
- Perform a stakeholder analysis to gauge the expectations of customers and shareholders.
- Make an inventory of the critical success factors
- Translate strategic objectives into (personal) goals
- Set up key performance indicators to measure the objectives
- Determine the values for the objectives that are to be achieve
- Translate the objectives into operational activities.

It is important to mention that achieving strategic objectives is a continuous process: plan-do-check-act (see PDCA- or Deming circle). Setting up and implementing the Balanced Scorecard model is therefore not a one-off action!

Material Requirements Planning (MRP)

Definition:

Material Requirements Planning (MRP) is a computer-based production planning and inventory control system. MRP is concerned with both production scheduling and inventory control. It is a material control system that attempts to keep adequate inventory levels to assure that required materials are available when needed. MRP is applicable in situations of multiple items with complex bills of materials. MRP is not useful for job shops or for continuous processes that are tightly linked.

The major objectives of an MRP system are too simultaneously:

1. Ensure the availability of materials, components, and products for planned production and for customer delivery,
2. Maintain the lowest possible level of inventory,
3. Plan manufacturing activities, delivery schedules, and purchasing activities.

MRP is especially suited to manufacturing settings where the demand of many of the components and subassemblies depend on the demands of items that face external demands. Demand for end items is independent. In contrast, demand for components used to manufacture end items depend on the demands for the end items. The distinctions between independent and dependent demands are important in classifying inventory items and in developing systems to manage items within each demand classification. MRP systems were developed to cope better with dependent demand items.

The three major inputs of an MRP system are the master production schedule, the product structure records, and the inventory status records. Without these basic inputs the MRP system cannot function.

Master Production Schedule (MPS):

The demand for end items is scheduled over a number of time periods and recorded on a master production schedule (MPS). The master production schedule

expresses how much of each item is wanted and when it is wanted. The MPS is developed from forecasts and firm customer orders for end items, safety stock requirements, and internal orders. MRP takes the master schedule for end items and translates it into individual time-phased component requirements.

Product Structure Records:

The product structure records, also known as **Bill of Material Records (BOM)**, contain information on every item or assembly required to produce end items. Information on each item, such as part number, description, quantity per assembly, next higher assembly, lead times, and quantity per end item, must be available.

Inventory Status Records:

The inventory status records contain the status of all items in inventory, including on hand inventory and scheduled receipts. These records must be kept up to date, with each receipt, disbursement, or withdrawal documented to maintain record integrity.

MRP will determine from the master production schedule and the product structure records the gross component requirements; the gross component requirements will be reduced by the available inventory as indicated in the inventory status records.

MRP PROCESSING

- Using information culled from the bill of materials, master schedule, and inventory records file, an MRP system determines the net requirements for raw materials, component parts, and subassemblies for each period on the planning horizon.
- MRP processing first determines gross material requirements, then subtracts out the inventory on hand and adds back in the safety stock in order to compute the net requirements.
- The main outputs from MRP include three primary reports and three secondary reports.
- The primary reports consist of: planned order schedules, which outline the quantity and timing of future material orders; order releases, which authorize orders to be made; and changes to planned orders, which might include cancellations or revisions of the quantity or time frame.
- The secondary reports generated by MRP include: performance control reports, which are used to track problems like missed delivery dates and stock outs in order to evaluate system performance; planning reports, which can be used in forecasting future inventory requirements; and exception reports, which call managers' attention to major problems like late orders or excessive scrap rates.
- Although working backward from the production plan for a finished product to determine the requirements for components may seem like a simple process, it can actually be extremely complicated, especially when some raw materials or parts are used in a number of different products.
- Frequent changes in product design, order quantities, or production schedule also complicate matters. The importance of computer power is evident when one considers the number of materials schedules that must be tracked.

BENEFITS

- MRP systems offer a number of potential benefits to manufacturing firms.

include helping production managers to minimize inventory levels and the associated carrying costs, track material requirements, determine the most economical lot sizes for orders, compute quantities needed as safety stock, allocate production time among various products, and plan for future capacity needs.

- There is a large range of people in a manufacturing company that may find the use of information provided by an MRP system very helpful.
- Production planners are obvious users of MRP, as are production managers, who must balance workloads across departments and make decisions about scheduling work.
- Plant foremen, responsible for issuing work orders and maintaining production schedules, also rely heavily on MRP output.
- Other users include customer service representatives, who need to be able to provide projected delivery dates, purchasing managers, and inventory managers.

DRAWBACKS

MRP systems also have several potential drawbacks.

- ✓ MRP relies upon accurate input information. If a small business has not maintained good inventory records or has not updated its bills of materials with all relevant changes, it may encounter serious problems with the outputs of its MRP system.
- ✓ The problems could range from missing parts and excessive order quantities to schedule delays and missed delivery dates.
- ✓ At a minimum, an MRP system must have an accurate master production schedule, good lead-time estimates, and current inventory records in order to function effectively and produce useful information.
- ✓ Another potential drawback associated with MRP is that the systems can be difficult, time consuming, and costly to implement.
- ✓ Many businesses encounter resistance from employees when they try to implement MRP. For example, employees who once got by with sloppy record keeping may resent the discipline MRP requires.
- ✓ The departments that became accustomed to hoarding parts in case of inventory shortages might find it difficult to trust the system and let go of that habit.

The key to making MRP implementation work is to provide training and education for all affected employees. It is important early on to identify the key personnel whose power base will be affected by a new MRP system. These people must be among the first to be convinced of the merits of the new system so that they may buy into the plan. Key personnel must be convinced that they personally will be better served by the new system than by any alternate system. One way to improve employee acceptance of MRP systems is to adjust reward systems to reflect production and inventory management goals.

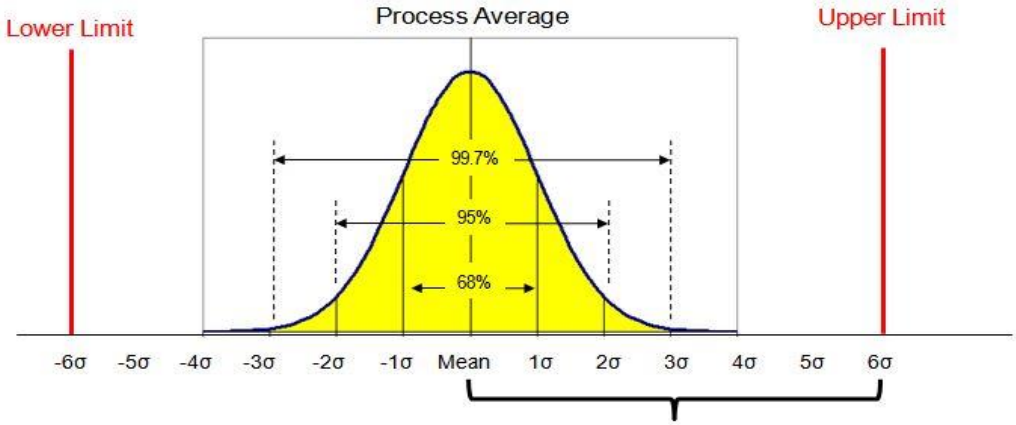
SIX SIGMA

Definition:

Six Sigma is a set of management tools and techniques designed to improve business by reducing the likelihood of error. It is a data-driven approach which uses statistical methodology for eliminating defects.

The etymology is based on the Greek symbol “sigma” or "σ", a statistical term for measuring process deviation from the process mean or target. “Six Sigma” comes from the bell curve used in statistics, where one Sigma symbolizes a single standard deviation from the mean. If the process has six Sigmas, three above and three below the mean, the defect rate is classified as “extremely low.”

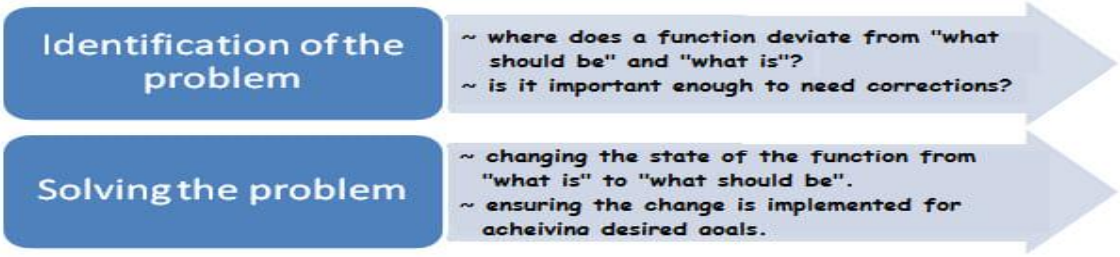
The graph of the normal distribution below underscores the statistical assumptions of the Six Sigma model. The higher the standard deviation, the higher is the spread of values encountered. So, processes where the mean is minimum 6σ away from the closest specification limit are aimed in Six Sigma.



Sigma Level	Defects per Million	Yield
6	3.4	99.99966%
5	230	99.977%
4	6,210	99.38%
3	66,800	93.32%
2	308,000	69.15%
1	690,000	30.85%

5 Key Principles of Six Sigma

The concept of Six Sigma has a simple goal – delivering near-perfect goods and services for business transformation for optimal customer satisfaction (CX). Goals are achieved through a two-pronged approach:



Six Sigma has its foundations in five key principles:

Focus on the customer"

This is based on the popular belief that the "customer is the king." The primary goal is to bring maximum benefit to the customer. For this, a business needs to understand its customers, their needs, and what drives sales or loyalty. This requires establishing the standard of quality as defined by what the customer or market demands.

Measure the value stream and find your problem

Map the steps in a given process to determine areas of waste. Gather data to discover the specific problem area that is to be addressed or transformed. Have clearly defined goals for data collection, including defining the data to be collected, the reason for the data gathering, insights expected, ensuring the accuracy of measurements, and establishing a standardized data collection system. Ascertain if the data is helping to achieve the goals, whether or not the data needs to be refined, or additional information collected. Identify the problem. Ask questions and find the root cause.

Get rid of the junk

Once the problem is identified, make changes to the process to eliminate variation, thus removing defects. Remove the activities in the process that do not add to the customer value. If the value stream doesn't reveal where the problem lies, tools are used to help discover the outliers and problem areas. Streamline functions to achieve quality control and efficiency. In the end, by taking out the above mentioned junk, bottlenecks in the process are removed.

Keep the ball rolling

Involve all stakeholders. Adopt a structured process where your team contributes and collaborates their varied expertise for the purposes of problem-solving.

Six Sigma processes can have a great impact on an organization, so the team has to be proficient in the principles and methodologies used. Hence, specialized training and knowledge are required to reduce the risk of project or re-design failures, and ensure that the process performs optimally.

Ensure a flexible and responsive ecosystem

The essence of Six Sigma is business transformation and change. When a faulty or inefficient process is removed, it calls for a change in the work practice and employee approach. A robust culture of flexibility and responsiveness to changes in procedures can ensure a streamlined project implementation. The people and departments involved should be able to adapt to change with ease, so in order to facilitate this, processes should be designed for quick and seamless adoption. Ultimately, the company that has an eye fixed on the data, examines the bottom line periodically, and adjusts its processes where necessary, can gain a competitive edge.

The Six Sigma Methodology

The two main Six Sigma methodologies are DMAIC and DMADV. Each has its own set of recommended procedures to be implemented for business transformation.

DMAIC is a data-driven method, used to improve existing products or services for better customer satisfaction. It is the acronym for the five phases: D –

Define, M – Measure, A – Analyse, I – Improve, C – Control. DMAIC is applied in the manufacturing of a product or delivery of a service.

Although Six Sigma uses various methods to discover deviations and solve problems, the DMAIC is the standard methodology used by Six Sigma practitioners. Six Sigma uses a data-driven management process used for optimizing and improving business processes. The underlying framework is a strong customer focus and robust use of data and statistics to draw conclusions.

The Six Sigma Process of the DMAIC method has five phases:

Each of the above phases of business transformation has several steps:

DEFINE

The Six Sigma process begins with a customer-centric approach.

Step 1: The business problem is defined from the customer perspective.

Step 2: Goals are set. What do you want to achieve? What are the resources you will use in achieving the goals?

Step 3: Map the process. Verify with the stakeholders that you are on the right track.

MEASURE

The second phase is focused on the metrics of the project and the tools used in the measurement. How can you improve? How can you quantify this?

Step 1: Measure your problem in numbers or with supporting data.

Step 2: Define performance yardstick. Fix the limits for "Y."

Step 3: Evaluate the measurement system to be used. Can it help you achieve your outcome?

ANALYZE

The third phase analyzes the process to discover the influencing variables.

Step 1: Determine if your process is efficient and effective. Does the process help achieve what you need?

Step 2: Quantify your goals in numbers. For instance, reduce defective goods by 20%.

Step 3: Identify variations, using historical data.

IMPROVE

This process investigates how the changes in "X" impacts "Y." This phase is where you identify how you can improve the process implementation.

Step 1: Identify possible reasons. Test to identify which of the "X" variables identified in Process III influence "Y."

Step 2: Discover relationships between the variables.

Step 3: Establish process tolerance, defined as the precise values that certain variables can have and still fall within acceptable boundaries, for instance the quality of any given product. Which boundaries need X to hold Y within specifications? What operating conditions can impact the outcome? Process tolerances can be achieved by using tools like robust optimization and validation set.

CONTROL

In this final phase, you determine that the performance objective identified in the previous phase is well implemented and that the designed improvements are sustainable.

Step 1: Validate the measurement system to be used.

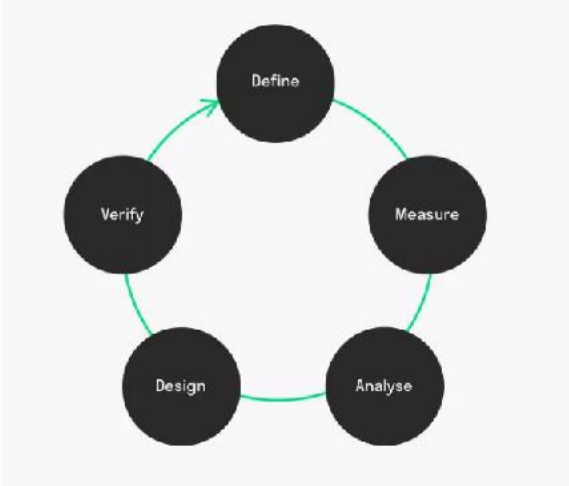
Step 2: Establish process capability. Is the goal being met? For instance, will the goal of reducing defective goods by 20 percent be achieved?

Step 3: Once the previous step is satisfied, implement the process.

DMADV is a part of the Design for Six Sigma (DFSS) process, used to design or redesign different processes of product manufacturing or service delivery. The five phases of DMADV are: D – Define, M – Measure, A – Analyse, D – Design, V – Validate. DMADV is employed when existing processes do not meet customer conditions, even after optimization, or when it is required to develop new processes. It is executed by Six Sigma Green Belts and Six Sigma Black Belts and under the supervision of Six Sigma Master Black Belts. We'll get to the belts later.

DMADV Process

DMADV is about the development of a new service, product or process. The DMADV Process is particularly useful for the implementing of new strategies and initiatives. Each phase is explained below.



Define

In this first phase of the DMADV Process, it is about identifying the goal of the project, the process or the service. It should be clearly defined which guidelines are important for the development of a product or service, and if there are any potential risks and what the production schedule is.

During this first phase, the project manager determines what the most important customer needs are regarding the product or service to be newly developed. He determines this by using relevant, previously gathered customer information and customer feedback.

Measure

This phase of the DMADV Process is aimed at the collecting and recording of data that are relevant to the CTQ measures that have been identified during the first phase. The data that is collected during the measuring phase are essential to the process, as it will be used to drive the rest of the process.

During this measuring phase, it is about determining what the customer thinks is important about a new product. These factors are subsequently linked to quality, which leads to CTQs. The customer requirements will eventually be translated to clear project objectives, in order to get a product that can distinguish itself from the competition.

Analysis

The analysis phase of the DMADV Process is closely linked to the measuring phase, because the project team will analyze and test all the gathered data. This results in a good basis to measure improvements during the production process.

During this analysis phase, design alternatives are developed and they determine the optimum combination of requirements. An estimate of the total life cycle costs of the design is also made during this stage. After exploring the different design alternatives, a rough product design is created (functional specification) that meets the previously defined CTQ's as much as possible.

Design

The design phase of the DMADV Process consists of the design of the product or service that fully matches the customer requirements.

During this phase, the project team uses data from the previous phases, leading to a product that is suitable for the customer with all possible additional adjustments that might be needed. It is a detailed and high-quality design which will be made into a prototype.

During production of this prototype, they also look at the production process. The goal is not just to develop a production process that creates good products, but one which is also logistically efficient.

Verify

The verification phase of the DMADV Process might be the final phase, but it is not the end of the process. To safeguard quality, it is important to continue to verify and make adjustment to the product where necessary.

In this last phase, the design is final and the product is ready to be sold. During this phase, the project team receives feedback from the customers and user experiences, and they will make necessary adjustments to better meet the customers' needs.

The project team will also determine additional CTQ measures to be able to monitor customer feedback after delivery of the final product.

The two methodologies are used in different business settings, and professionals seeking to master these methods and application scenarios would do well to take an online certificate program taught by industry experts.

Knowledge Management

Knowledge management is the conscious process of defining, structuring, retaining, and sharing the knowledge and experience of employees within an organization.

The primary goal of knowledge management is facilitating the connection of staff looking for information, or institutional knowledge, with the people who have it.

With practical knowledge management in place, organizations can spread information and raise the level of expertise held by specific individuals or teams to improve the efficiency of their practices.

It often refers to training and learning in an organization or of its customers. It consists of a cycle of creating, sharing, structuring, and auditing knowledge to maximize the effectiveness of an organization's collective expertise.

Knowledge management in practice

Knowledge management can be separated into three main areas:

- Accumulating knowledge
- Storing knowledge
- Sharing knowledge

By accumulating and storing the staff's knowledge, companies hold onto what has made them successful in the past. In addition, sharing this information throughout the organization informs staff of past approaches that improve performance or better inform new strategies.

To achieve the goal of knowledge management, companies have to enable and promote a culture of learning and development, creating an environment where employees are encouraged to share information to better the collective workforce.

Types of knowledge

The information knowledge management covers can generally be broken down into three main types:

1. Explicit knowledge is knowledge and information that can be easily codified and taught, such as how to change the toner in a printer and mathematical equations.

2. Implicit knowledge is knowledge that explains how best to implement explicit knowledge. For example, consider discussing a task with an experienced co-worker. They may provide explicit steps detailing how to complete the job. But they may also use their understanding of the situation to consider different options and decide the best approach for your given circumstances. The experienced employee utilizes and shares their implicit knowledge to improve how the team operates.

3. Tacit knowledge is knowledge gained through experience. Therefore, it is more intuitive and less easy to share with others. Examples of tacit knowledge are "know-hows", innovative thinking, and understanding body language.

Importance of Knowledge Management

- ✓ Knowledge management is important because it boosts the efficiency of an organization's decision-making ability. By making sure that all employees have access to the overall expertise held within the organization, a smarter workforce is built that is more able to make quick, informed decisions, benefiting the entire company.

- ✓ Knowledge management allows innovation to grow within the organization, customers benefit from increased access to best practices, and employee turnover is reduced.
- ✓ Knowledge management is important because it boosts the efficiency of an organization's decision-making ability.
- ✓ By making sure that all employees have access to the overall expertise held within the organization, a smarter workforce is built that is more able to make quick, informed decisions, benefiting the entire company.
- ✓ Knowledge management allows innovation to grow within the organization, customers benefit from increased access to best practices, and employee turnover is reduced.
- ✓ The importance of knowledge management is growing every year. As the marketplace becomes ever more competitive, one of the best ways to stay ahead of the curve is to build your organization in an intelligent, flexible manner. You must have the ability to spot issues from a distance and be able to respond quickly to new information and innovations.

Knowledge management process

Implementing effective knowledge management requires proactive strategies and incorporating multiple new processes. Companies have to uncover the existing knowledge available to them, understand how to spread this information to produce additional value, and plan what this looks like in action.

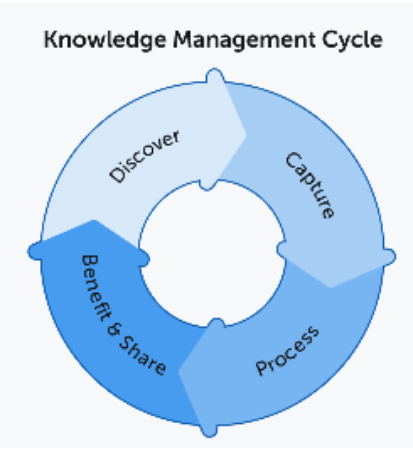
1. Discovery

Every organization has multiple sources of knowledge, from employees to data and records.

This could be the education and skillsets staff bring to the job, the experience and unique expertise they develop on the job, or hard drives of data that can positively affect the business with proper analysis.

During the discovery process, organizations must identify all the available sources of knowledge, with a particular emphasis on information that could be easily lost.

This process is simplified by a strong understanding of where and how knowledge flows around the organization.



2. Collection

Collecting all the available knowledge and data creates the foundation from which future processes build.

Sloppy or incorrect knowledge collection leads to decisions without a complete understanding of the organization and its capabilities.

Companies must audit their existing staff expertise, documentation, and external knowledge sources. A range of tools is available to help, including automated surveys, document scanning, and metadata.

Post-implementation, many organizations redefine internal processes to make capturing institutional knowledge a part of everyday processes. This could be through continual employee feedback systems or more in-depth offboarding procedures.

3. Assessment

This process involves the deep analysis of the knowledge gathered in the previous two steps. Data must be assessed and organized into a structured, searchable, and easily accessible form.

Assessment of the gathered knowledge is required to ensure it is accurate, offers value, and is up to date.

Then teams can determine how best to share information to improve company performance and give staff the knowledge they need to maximize performance.

Utilizing the right knowledge management system simplifies this process by allowing leadership to organize, assess, segment, and store a comprehensive knowledge database.

4. Sharing

The whole point of knowledge management is to give staff the expertise and information they need to do their job to the best of their ability.

Once you have built a detailed and accurate body of knowledge related to your company, you need to plan how it will be shared.

5. Application

This is the step where organizations reap the rewards of knowledge management. Discovering and storing institutional knowledge is just the beginning.

Staff utilizing newly acquired expertise in their tasks brings a range of benefits in productivity, accuracy, decision-making, and more innovative employees.

6. Creation

The final stage of knowledge management is to create more knowledge. It should never be considered a one-and-done process. A single audit and rollout won't deliver the results you are looking for.

Knowledge management is a continual process that maximizes a company's performance for the expertise available to it.

Customer Relationship Management

Customer relationship management, or CRM, is a technology for managing all business relationships and interactions with existing and potential clients within a company. Its purpose is simple: improving business relationships. This system helps you stay connected to customers, streamline work processes, and boost revenues.

With a professional CRM, it's much easier for you to generate more leads, find new customers, build trust, and provide them with qualified support throughout your relationship.

CRM is just like the mall for your business. This is a big online platform that gathers information about your customers, tracks all your interactions with them, and lets you share this data with your team to agree on improving your company's processes.

Features of CRM:

Lead generation

CRM pulls all available data from the web to help you find quality leads, those that are likely to turn into paying customers. In particular, with a reliable CRM, you may get prospect's contact information, location, the company they're working for, and other important data you'll be able to use for personalization goals.

Lead management

CRM helps you analyze and track any information you get about your leads, qualify, and nurture them through multiple channels to the point of conversion.

Contact management

This feature allows keeping all business contacts in one place and seeing the history of all interactions with them.

Deal management

With CRM, you have the history of all your deals, which allows you to analyze any bottlenecks and come up with necessary improvements. Besides, this feature helps forecast the success of future deals.

Email communication management

CRM allows you to build emails, schedule follow-ups, and use email templates for consistent communication with your potential and existing customers. In addition, it notifies you when someone interacts with your emails and provides you with email analytics to improve the performance of your email campaigns.

Sales and marketing automation

CRM with in-built marketing and/or sales automation provides you with tools that replace manual work with finding and assigning leads to the right salespeople, contacting prospects, and many other activities.

Analytics

CRM encompasses the necessary tools for analyzing your business campaign processes. It offers regular multidimensional reports that you may usually export or share with other team members.

Integration

Many CRMs offer integration options that allow syncing to the apps that you like and have already been using. So you have all the tools you need in your pocket to streamline your business processes.

Customization

As a rule, you may adapt your CRM to the way your team operates. It provides custom modules, fields, and buttons that help you tune its functionality up to your needs.

Goals of CRM

A primary goal of using CRM is to strengthen customer loyalty to the company, as this is significantly cheaper than acquiring new clients. Additional goals of CRM are:

- ✓ To achieve a higher contribution margin per customer
- ✓ To improve profitability by taking advantage of the customer potential.

Benefits of CRM

Any business that targets ambitious revenue growth needs it. Some of its core benefits:

Better organization

A CRM system is a place to store and manage all the necessary information about your customers. Besides, that's where you track all the communication with them, as well as access the advanced data about your clients at any time.

Better customer service

Managing the data about a single customer, you get a clearer picture of their interests and needs, which enables you to address their issues more quickly. As a result, you provide your clients with better service and get their loyalty in return.

Personalized communication

Many tools offer personalization features. So, they allow you to segment your customers and build a highly targeted communication approach, e.g., personalize emails, provide relevant content and offers.

Higher customer retention

Not only customer loyalty may be improved after you implement CRM. CRM analytic tools, for instance, allow you to analyze the customer life cycle to spot at what point and why churn happens. This helps you identify pain points and come up with effective solutions that will let you increase client retention by 27%.

Automation of tasks

The majority of CRMs enable you to automate your tasks. This will let you save much of your time and boost your overall efficiency and productivity. Implementing CRM may shorten the sales cycle by 24% and decrease sales and marketing costs by 23%.

Higher conversions

Having all customer information in one place, automating business processes, and tracking the performance of your marketing and sales campaigns will lead to the desired result — you'll be able to improve your productivity and grow lead conversions by a tremendous 300%.

Tracking team performance

As your sales team grows, you'll inevitably feel the need to take control of your inside processes: e.g., who closed more deals, what tactics have proved more successful, and so on. As a result, you'll be able to come up with necessary sales training programs for your team members and encourage them to grow their skills.

More transparency

CRM allows every member of your team to see how your business processes are going, get mutual access to the system, and share knowledge and best practices with each other. This leads to better collaboration and improves teamwork within your company.