**7. Miscellaneous Topics**

**a) Customer Relation Management (CRM)**

 **Definition and need :-**

Customer relationship management (CRM) is a term that refers to practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the [customer lifecycle](https://searchsalesforce.techtarget.com/definition/Customer-Life-Cycle), with the goal of improving customer service relationships and assisting in customer retention and driving sales growth. Tim EhrensCRM systems compile customer data across different channels -- or points of contact between the customer and the company -- which could include the company's website, telephone, live chat, direct mail, marketing materials and social media. CRM systems can also give [customer-facing](https://searchcrm.techtarget.com/definition/customer-facing) staff detailed information on customers' personal information, purchase history, buying preferences and concerns.

### Components of CRM

### At the most basic level, CRM software consolidates customer information and documents into a single CRM database so business users can more easily access and manage it.

### Over time, many additional functions have been added to CRM systems to make them more useful. Some of these functions include recording various customer interactions over email, phone, social media or other channels; depending on system capabilities, [automating](https://searchitoperations.techtarget.com/definition/IT-automation) various workflow automation processes, such as tasks, calendars and alerts; and giving managers the ability to track performance and productivity based on information logged within the system.

* **Marketing automation.** CRM tools with [marketing automation](https://searchsalesforce.techtarget.com/definition/marketing-automation) capabilities can automate repetitive tasks to enhance marketing efforts at different points in the lifecycle. For example, as sales prospects come into the system, it might automatically send the prospects marketing materials, typically via email or social media, with the goal of turning a sales lead into a full-fledged customer.
* **Sales force automation.** [Sales force automation](https://whatis.techtarget.com/definition/sales-force-automation-SFA) tools track customer interactions and automate certain business functions of the sales cycle that are necessary to follow leads and attract and obtain new customers.
* **Contact center automation.** Designed to reduce tedious aspects of a contact center agent's job, [contact center](https://searchcrm.techtarget.com/definition/contact-center) automation might include prerecorded audio that assists in customer problem-solving and information dissemination. Various software tools that integrate with the agent's desktop tools can handle customer requests in order to cut down on the time of calls and to simplify customer service processes.
* **Geolocation technology, or location-based services.** Some CRM systems include technology that can create geographic marketing campaigns based on customers' physical locations, sometimes integrating with popular location-based GPS apps. [Geolocation](https://searchmobilecomputing.techtarget.com/definition/geolocation) technology can also be used as a networking or contact management tool in order to find sales prospects based on a location.

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**Types of CRM:-**

* On-premises CRM. This system puts the onus of administration, control, security and maintenance of the database and information on the company using the CRM software. With this approach, the company purchases licenses upfront instead of buying yearly subscriptions from a cloud CRM provider. The software resides on the company's own servers and the user assumes the cost of any upgrades. It also usually requires a prolonged installation process to fully integrate a company's data. Companies with complex CRM needs might benefit from an on-premises deployment.
* Cloud-based CRM. With cloud-based CRM -- also known as [SaaS](https://whatis.techtarget.com/definition/SaaS) (software as a service) or on-demand CRM -- data is stored on an external, remote network that employees can access anytime, anywhere there is an internet connection, sometimes with a third-party service provider overseeing installation and maintenance. The cloud's quick, relatively easy deployment capabilities appeal to companies with limited technological expertise or resources.

Companies might consider cloud CRM as a more cost-effective option. Vendors such as Salesforce charge by the user on a subscription basis and offer the option of monthly or yearly payments.

Data security is a primary concern for companies using cloud-based systems, as the company doesn't physically control the storage and maintenance of its data. If the cloud provider goes out of business or is acquired by another company, an enterprise's data can be compromised or lost. Compatibility issues can also arise when data is initially migrated from a company's internal system to the cloud.

Finally, cost may be a concern, since paying subscription fees for software can be more costly over time than on-premises models.

* Open source CRM. An [Open source](https://whatis.techtarget.com/definition/open-source) CRM system make [source code](https://searchmicroservices.techtarget.com/definition/source-code) available to the public, enabling companies to make alterations at no cost to the company employing the system. Open source CRM systems also enable the addition and customization of data links on social media channels, assisting companies looking to improve [social CRM](https://searchcrm.techtarget.com/definition/social-CRM) practices.

Open Source CRM platforms such as OroCRM, SuiteCRM and SugarCRM offer alternatives to the proprietary platforms from Salesforce, Microsoft and other vendors.

Adoption of any of these CRM deployment methods depends on a company's business needs, resources and goals, as each has different costs associated with it.

### CRM examples in practice

* Contact center. Traditionally, data intake practices for CRM systems have been the responsibility of sales and marketing departments, as well as contact center agents. Sales and marketing teams procure leads and update the system with information throughout the customer lifecycle, and contact centers gather data and revise customer history records through service calls and technical support interactions.
* Social CRM. Social media in CRM involves businesses engaging customers directly through social media platforms, such as Facebook, Twitterand [LinkedIn](https://whatis.techtarget.com/definition/LinkedIn). Social media presents an open forum for customers to share experiences with a brand, whether they're airing grievances or promoting products.

To add value to customer interactions on social media, businesses use various social CRM tools that monitor social media conversations -- from specific mentions of a brand to the frequency of keywords used -- to determine their target audience and which platforms they use. Other tools are designed to analyze social media feedback and address customer queries and issues.

Companies are interested in capturing customer sentiments, such as the likelihood they will recommend products and their overall customer satisfaction, to develop marketing and service strategies. Companies try to integrate social CRM data with other customer data obtained from sales or marketing departments to get a single view of the customer.

Another way in which social CRM adds value for companies and customers is through customer communities, where customers post reviews of products and can engage with other customers to troubleshoot issues or research products in real time. Customer communities can provide low-level customer service for certain kinds of problems and reduce the number of contact center calls. Customer communities can also provide new product ideas or feedback that companies can use in lieu of feedback groups.

1. Mobile CRM. CRM applications built for smartphones and tablets have become a must-have for sales representatives and marketing professionals who want to access customer information and perform tasks when they are not physically in their offices. [Mobile CRM](https://searchcrm.techtarget.com/definition/mobile-CRM-mobile-customer-relationship-management) apps take advantage of features that are unique to mobile devices, such as GPS and voice-recognition capabilities, to give sales and marketing employees access to customer information from anywhere.
2. Business-to-business (B2B) practices. A CRM system in a B2B environment helps monitor sales as they move through the [sales funnel](https://searchsalesforce.techtarget.com/definition/sales-funnel), enabling a business to address any issues that might come up during the process. CRM systems in the B2B market help create more visibility into leads and, therefore, increase efficiency throughout the sales process.

**b) Total Quality Management (TQM)**

TQM stands for total quality management. A core definition of total quality management (TQM) describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work.

## **TOTAL QUALITY MANAGEMENT (TQM) PRIMARY ELEMENTS**

Total quality management, or TQM, can be summarized as a management system for a customer-focused organization that involves all employees in continual improvement. It uses strategy, data, and effective communications to integrate the quality discipline into the culture and activities of the organization. Many of these concepts are present in modern [quality management systems](https://asq.org/quality-resources/quality-management-system), the successor to TQM. Here are the 8 principles of total quality management:

* Customer-focused

The customer ultimately determines the level of quality. No matter what an organization does to foster quality improvement - training employees, integrating quality into the design process, or upgrading computers or software -the customer determines whether the efforts were worthwhile.

* Total employee involvement

All employees participate in working toward common goals. Total employee commitment can only be obtained after fear has been driven from the workplace, when empowerment has occurred, and when management has provided the proper environment. High-performance work systems integrate continuous improvement efforts with normal business operations. Self-managed work teams are one form of empowerment.

* Process-cantered

A fundamental part of TQM is a focus on process thinking. A process is a series of steps that take inputs from suppliers (internal or external) and transforms them into outputs that are delivered to customers (internal or external). The steps required to carry out the process are defined, and performance measures are continuously monitored in order to detect unexpected variation.

* Integrated system

Although an organization may consist of many different functional specialties often organized into vertically structured departments, it is the horizontal processes interconnecting these functions that are the focus of TQM.

* + Micro-processes add up to larger processes, and all processes aggregate into the business processes required for defining and implementing strategy. Everyone must understand the vision, mission, and guiding principles as well as the quality policies, objectives, and critical processes of the organization. Business performance must be monitored and communicated continuously.
	+ An integrated business system may be modeled after the [Baldrige National Quality Program](https://asq.org/quality-resources/malcolm-baldrige-national-quality-award) criteria and/or incorporate the [ISO 9000 standards](https://asq.org/quality-resources/iso-9000). Every organization has a unique work culture, and it is virtually impossible to achieve excellence in its products and services unless a good quality culture has been fostered. Thus, an integrated system connects business improvement elements in an attempt to continually improve and exceed the expectations of customers, employees, and other stakeholders.
* Strategic and systematic approach

A critical part of the management of quality is the strategic and systematic approach to achieving an organization’s vision, mission, and goals. This process, called strategic planning or strategic management, includes the formulation of a strategic plan that integrates quality as a core component.

* Continual improvement

A large aspect of TQM is continual process improvement. Continual improvement drives an organization to be both analytical and creative in finding ways to become more competitive and more effective at meeting stakeholder expectations.

* Fact-based decision making

In order to know how well an organization is performing, data on performance measures are necessary. TQM requires that an organization continually collect and analyze data in order to improve decision making accuracy, achieve consensus, and allow prediction based on past history.

* Communications

During times of organizational change, as well as part of day-to-day operation, effective communications plays a large part in maintaining morale and in motivating employees at all levels. Communications involve strategies, method, and timeliness.

**Statistical process control**

[Statistical Process Control (SPC)](https://amp.infinityqs.com/our-capabilities/products/proficient) is an industry-standard methodology for measuring and controlling quality during the manufacturing process. Quality data in the form of Product or Process measurements are obtained in real-time during manufacturing. This data is then plotted on a graph with pre-determined control limits. Control limits are determined by the capability of the process, whereas specification limits are determined by the client's needs.

Data that falls within the control limits indicates that everything is operating as expected. Any variation within the control limits is likely due to a common cause—the natural variation that is expected as part of the process. If data falls outside of the control limits, this indicates that an assignable cause is likely the source of the product variation, and something within the process should be changed to fix the issue before defects occur.

Enter SPC (Statistical Process Control) which has been around since the 1920’s, but wasn’t always embraced by manufacturers. Many feel that SPC concepts were effectively used by Japanese companies, whose growth in the 80’s scared American and European companies into action in the 90’s.

SPC uses basic mathematics (mean, median, standard deviation) of a set of measurements and offers a work-flow process for operators to read a chart and identify visually if their process is “in control” or “out of control”. The amazing aspect of SPC for many people is that a process can be nominally “passing” a test, meaning that it’s measurements fall within its high and low limits, but that the process may be “out of control” and ask risk to fail in the short term. In these cases, SPC serves as an early warning sign.

The positives of SPC are that it is (1) very quantifiable, (2) can help manufacturers catch issues early, (3) relatively easy to implement in software and (4) easy to train an operator to use.

The negatives of SPC are that (1) it can be very difficult to determine the key process indicators ‘KPIs’ that you want to track, (2) its usefulness is limited to processes that fit inside a “normal curve”, or Gaussian distribution.

Enter Six Sigma, on the heels of TQM, and with a goal to add more quantifiable results and processes. Six Sigma uses many of the concepts of SPC – in fact, the name itself “sigma” is the same as “standard deviation” in statistics and six is the number of standard deviations necessary to get a process to have only 3.4 defects per million. Whereas TQM had more “fuzzy” goals and tactics, Six Sigma is incredibly specific.

A commonly used example is to compare 99% quality (or one defect per 100 tries) with Six Sigma, which is 99.999966% quality (or 3.4 defects per 1,000,000 tries). A car company that is at 3.8 Sigma (99%) would have 3 warranty claims for every car produced, whereas a 6 Sigma level (99.99966%) would have 1 warranty claim for every 980 car produced.

In Summary, the three terms are all meaningful, all relevant for today’s companies, and all interrelated in how they help companies achieve better quality.

**Employees Involvement**

Involving employees, empowering them, and bringing them into decision making process provides the opportunity for continuous process improvement. The untapped ideas, innovations, and creative thoughts of employees can make the difference between success and failure. Competition is so fierce that it would be unwise not use every available tool.

Employee involvement improves quality and increases productivity, because:

* Employees make better
* Employees make better decisions using their expert knowledge of the process.
* Employees are more likely to implement and support decisions they had a part in making.
* Employees are better able to spot and pinpoint areas of  for improvement.
* Employees are better able to take immediate corrective actions.
* Employee involvement reduces labor/management friction by encouraging more effective communication and cooperation.
* Employee involvement increases morale by creating feeling of belonging to the organization.
* Employees are better able to accept change because they control the work environment.
* Employees have an increased commitment to unit goals because they are involved.

Employees involvement should not be looked at as a fad that will go away soon. It is a way of life, crucial to TQM, and it can mean difference between being competitive and going out of business. Employees not senior management, hold future in their hands. The sign over the plant entrance that says, “Through these doors pass our most important asset, our employees” does not ring true when employees have a feeling that no one really cares. More involvement might  be encouraged by the sign “No one of us knows as much as all of us.”

As organizational culture begins the process change, resistance to this change will certainly be present. Keeping people informed will reduce resistance, especially when they see the benefits. Change is an ongoing process that must occur if an organization is to continue to exist in competitive world. People do not necessarily resist change; they resist being changed, and problems arise when a person’s comfort zone is disturbed.

**Just in time (JIT)**

The just-in-time inventory system is a management strategy that aligns raw-material orders from suppliers directly with production schedules. Companies use this inventory strategy to increase efficiency and decrease waste by receiving goods only as they need them for the production process, which reduces inventory costs. This method requires producers to forecast demand accurately.

The JIT inventory system is a shift away from other [just-in-case](https://www.investopedia.com/terms/j/jic.asp) strategies, in which producers hold large inventories to have enough product to absorb maximum market demand.

**c) Intellectual Property Right (IPR)**

**Introductions, definition and its importance**

#### Definition of IPR:

In the common sense intellectual property is a product of mind. It is similar to the property (consisting of movable or immovable things) like a house or a car where in the property or owner may use his property as he wishes and nobody else can use his property without his permission as per Indian laws.

#### Function of IPR:

World intellectual property organization (1967) one of the specialised agencies of the United Nations system provided that intellectual property shall include rights relating to the following:

(a) Literary, artistic and scientific works, performance of artists, phonograms and broadcast; innovation in all fields of human endeavor; scientific discoveries; trademarks, service marks and commercial names; industrial designs; protection against unfair competition and all other rights resulting from intellectual activity in the area of industrial, scientific, literary or artistic fields.

(b) The intellectual property is protected by and governed by appropriate national legislations. The national legislation specifically described the inventions, which are the subject matter of protection and those which are excluded from a protection, for example methods of the treatment of humans or therapy and invention whose use would be contrary to law or invention which are injurious to public health are excluded from patentability in the Indian legislation.

#### Forms of Protection:

**The forms of protection are as follows:**

**(i) Patents:**

A patent is a government granted and secured legal right to prevent others from making, using or selling the inventions covered by the patent. A patent is a personal property which can be licensed or sold by the person/organisation like any other property. For example Alexander Graham Bell obtained patent for his telephone. This gave him the power to prevent anyone else from making or using or selling a telephone.

It has been reported that the first patent was granted to Filippo Brunelleschi in the Republic of Florence of the Italian city states in 1421 on the discovery of special hoisting gear used on barges. An ordinance issued in a vential law in 1474 on patents. Later, in England, during 1533-1603, minister.

Lord Burghley (1520-1598) in the ministry of Elizabeth granted a series of patents with a view to inculcate and encourage inventors working in England. In India, the basics of intellectual property rights were first introduced by enacting the Act on protection of inventors in 1856 which was based on British Patent Law of 1852. Later, series of patent legislation established as shown below.

**International and national agreements and treaties were founded as given below:**

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As far as International and Regional agreements/treatises in Intellectual Property Rights are concerned, it began from 1883 with Paris convention for the protection of Industrial Property; Berne convention for the protection of Literacy and Artistic works (1886); Madrid agreement for Repression of false or deceptive indications of source of goods (1891); Hauge agreement concerning the International Deposit of Industrial designs (1925); Nice agreement concerning the International classification of Goods and services for the purposes of the Registration of Marks (1957); Lisbon agreement for the protection of appellation of origin and their International Registration (1958); Rome convention for the protection of performers, producers of phonograms and broadcasting organizations (1961); Locarno Agreement establishing an International classification for industrial designs (1968); Patent cooperation treaty (PCT in the year 1970); Strasbourg agreement concerning the International Patent Classification and Geneva convention for the protection of producers of phonograms against unauthorized duplication of phonograms (1971); Vienna agreement establishing an international classification of the figurative elements of marks (1973); Brussels convention relating to the distribution of programme carrying signals transmitted by satellites (1974); Budapest treaty on the International Recognition of the Deposit of Microorganisms for the purposes of patent procedures (1977); Nairobi treaty on the protection of Olympic symbol (1981); Protocol relating to the Madrid agreement concerning the International Registration of Marks (1989); Trademark law treaty and trademark related Intellectual property Rights (TRIPS) 1994; Community Trademark (1996), Documents for the diplomatic conference on certain copyrights and Neighbouring Rights (1996), WIPO Copyright Treaty WCT) and WIPO Performance and Phonograms Treaty (WPPT).

In India, the Controller General of Patents Designs and Trademarks (CGPDT) functioning under the Department of Industrial Development Control grant the patents, designs and trademarks. The Ministry of Human Resources and Development is in-charge of copyright board.

**(a) Conditions for patentability:**

An invention or process is patentable if it is new, involves an inventive step (i.e. it is not obvious) and is industrially applicable.

**(b) Test of novelty of patents:**

Patents specifications should be made before the date of filling of the application with complete information. Any other document published in India or elsewhere before the date of the filling of the applicants complete specifications. This will cover forcing specifications whether publishing in India or not and text books and periodicals published any where related to the art in question. The only limitations being that they should be published before the date of the filling of the applicants complete specifications.

The economic and competitive position of a fermentation process depends on several factors such as yields, research costs, and size of the market, profit potential, and patent or secret, process position of the fermentation process or product. Patents are granted to inventors in return for a public disclosure of their inventions.

This disclosure and the knowledge of the respective art help to advance the state of that art. The patent in terms gives the inventor the right to exclude others from making, using or selling his particular invention as disclosed in the “claims” of the patent. Obviously, in case of certain inventions secrecy is difficult to maintain, for example in the process of fermentation.

The individuals working in an industrial research laboratory or any laboratory in which fermentation process of potential economic value are under study should know about how to read a patent in order to be able to determine the points of the invention which are actually protected by the patent.

He should also understand the types of information’s that are required for filling a patent application so that research can be directed towards obtaining information. As we shall see claiming too little or too much about the process or product can be disastrous. Guidance in these problems can be obtained from a qualified patent attorney.

**(c) Composition of a patent:**

A patent consists of three parts, the grant, specifications and claims. The grant is filled at the patent office and is not published. It is signed document and is the agreement that grant patents right to the inventor. The specifications and claims are published as a single document which is available to the public at a minimum charge from the patent office.

The specification section is narrative description of the subject matter of the invention and of how the invention is carried out; the claims section specifically defines the scope of the invention to be protected by the patent that which other may not practice. Thus, a patent stands of falls depending upon the statements included in the claims section.

Recently, Madras High Court dismissed the petition by the Swish Pharma, Novartis challenging the constitution of Section 3(d) of Indian Patents Act. The petition was rejected. The company was seeking the patent for incremental innovations done on the decades old medicines.

The Section 3(d) of the new Patent Act stipulates that incremental innovations or any of modifications must enhance the efficacy of the drug substantially to quality for fresh patenting. There is no logic for prolonging the patent period after its expiry just on account of frivolous charges. Madras High court properly interpreted it and did not allow its approval. This will stop the exploitation by minor inconsequential modifications in the original patent.

**(ii) Copyrights:**

Copyrights broadly include literacy works, musical works, including any accompanying works, dramatics works, including any accompanying music pantomimes and choreographic works, pictorial graphics and sculptural works.

Recently an expression called neighboring rights has been added to the concept of copyrights. The expression neighboring rights is the abbreviated form of the rights neighboring on copyright.

The following three types of rights are covered by the concept of neighboring rights:

(a) The rights of performing artists in their performance

(b) The rights of producers of phonograms in their phonograms

(c) The rights of broadcasting organizations in their radio and television broadcasts.

**(iii) Trade Mark:**

A trade mark is an identification symbol which is used in the course of trade to enable the public to distinguish on trader’s good from the similar goods of other traders.

The public makes use of these trade works in order to choose whose goods they will have to buy. If they are satisfied with the purchase, they can simply repeat their order by using the trade mark, for example KODAK for photography goods and IBM for computers. Zodiac for readymade clothes, etc.

**(iv) Design:**

Design means only the features of shape, configuration, pattern or ornament applied to any article in any industrial process or means whether manual, mechanical, chemical, separate or combined, which is the finished form appeal to end or judged solely by the eye. By registration under the designs act, the features are protected as design.

Genetic information’s can also be used to cure a disease, for example using the technology of gene therapy with a specific gene vector. The direct use of proteins as therapy is well established, and these products may be patented, though we should note, in general, that medical procedures have not been patented for ethical and practical reasons.

A patented product that reaches the commercial market gives the inventors some compen­sation for the time they spent in research for the development. In the USA, the average time required for biotechnology medicine to be approved for commercial scale of food & drug administration is 21.4 months after requests of trial based on chemical tests and it should be ten years after identifying the substance.

Once a product is patented the sales can bring about high income for the company that produces it and this includes return for the inventors. The system is self sustaining; if patents are awarded, companies will invest time in research and if not, these will be less incentive for companies to do research.

Without patents it may be easy for other companies to copy the techniques soon after introducing and take a share of the commercial market, especially because they do not need to bear the cost of the long period of research for product development.

Some system of reward is required to encourage commercial research, which is responsible for a significant number of biotechnology applications. The international recognition of intellectual properly rights (patents variety rights) is thus a basic concern.

The ethical principle of beneficence can be applied here. Does commercialization of biotechnology leads to more benefits than a bar on it? The benefits should be in terms of general, medical or agriculture developments, rather than the economic prosperity of one company or country over another.

Patenting is not permitted useful information otherwise becomes trade secrets, or if plant variety rights are not recognized seeds may not be made widely available. However, property rights are not absolutely protected in any society because of the principle of justice, and for the sake of “public interest”, “social need,”; and “public-utility”, societies can confiscate intellectual property.

People arguing for patenting claim that patent laws regulate inventiveness and not commercial uses of inventions. However, there was recent controversy regarding the commercial monopoly held by the company which was able to protect the first HIV/AIDS treatment, which enable to obtain large projects while it held a monopoly.

It also meant that the drug was prohibitively expensive for developing countries. Another arrangement is that if other countries support patents, our country needs to if our biotechnology company is to compete; however, the reverse arrangement that some countries do not permit similar patents, is also used to justify exclusions.

**(v) Know-how:**

Know-how is another important form of intellectual property generated by R&D institution that does not have the benefit of patent protection. This could be in the form of an aggregations of known procedures and accumulation of data. A secret formulation or a combination of any of these know-how is often transferred together with licensing of patent.