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# e-track

## business of future

# e-track

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## *Thought for the quarter*

**Don't tell people how to do things, tell them what to do and let them surprise you with their results.**

***George S. Patton***

## From the editor

*Dear Readers,*

Knowledge plays an increasingly vital role in technological advances and the transformation of organizations. The transformation of organization has largely been brought about as a result of the accumulation and increasingly sophisticated exploitation of knowledge. In today's networked and seamless world, where data and information is available in abundance, it certainly does create a chaos in an organization if the knowledge resources are not handled in a proper and smarter manner. Knowledge management, therefore, looks at a wide range of issues that involves information management, knowledge sharing, organizational culture, knowledge acquisition and organizational learning. Innovation and knowledge management are no longer luxury items, but rather necessities and a means of sustaining technological development and competitiveness. This e-track issue primarily focuses on innovation and knowledge management, the role of knowledge management practices in innovation and vice versa.

Dr. Sahu's article in line with theme of the issue informs "The challenge before the banks is how to develop and share the organizational knowledge on continuous basis for the business development". While Ms. Srivatava's article is very pertinent as she discovers how a Data warehouse system could be very handy for knowledge management in Insurance Sector.

Ms. Pathak's research paper in this issue is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

Ms. Sahai, through her article touches upon ubiquitous computing - a post-desktop model of man-machine interaction in which information processing has been thoroughly integrated into everyday objects and activities.

Last but not the least , On behalf of our editorial team , I would like to convey my heartfelt greetings to all of our readers on the auspicious occasion of this Happy New Year 2011 and expect that the New Year may bring all sorts of joy and happiness to you and your family members.

***Happy Reading……...***

**Pramod Dikshit**

## Contents

## From the Director's desk

# KNOWLEDGE MANAGEMENT

Knowledge management is about using information that creates value and in the process enhances organisational knowledge though sound practices of information management and organisational learning. Information System of a company comprising of Transaction Processing Systems (TPS), Management information System (MIS), Decision Support System (DSS) and Strategic Information System (SIS) is a critical resource that makes timely availability of information for effective performance of managerial functions. However all information accumulated and provided by IS does not always directly convert to knowledge. Organisational knowledge gets created when while working on the available information, tacit knowledge possessed by individual workers is externalized into objective and explicit knowledge which then is used by everybody in the organisation.

Some organisations stand out amongst the rest in terms of success and of these some distinctively have a purpose way beyond maximizing profit. The difference lies in their value systems, employees' commitment, vision and such subjective elements that enable creation and management of organisational knowledge.

The companies at times may undervalue the creation and capture of knowledge, lose or give away or inhibit sharing of the knowledge they posses i.e. they may under-invest in both using and reusing the knowledge they have. This may sometimes be due to the fact that they often do not know what they know. This is especially true for tacit or unarticulated knowledge i.e. the knowledge that is generally in the heads of individuals and teams and is lost when such individuals and teams leave the company.

From the term Knowledge Worker first used by Peter Drucker in 1959 in his book Landmarks of Tomorrow and introduction to the term of Knowledge Management and Intellectual Capital by Thomas A Stewart in Fortune magazine in 1991, a lot of interest has been generated amongst management educationists, practitioners and corporates alike in the field of Knowledge Management. Realization has sunk in that Survival of the Fittest will continue to be true, albeit along with management of men, material and money, Knowledge Management becoming an integral part of the Fittest Organisation.

**P K Malhotra**
(Director)
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# CASE FOR KNOWLEDGE MANAGEMENT IN BANKS

*-Dr. Sada Bihari Sahu*

Advent of information and Communication Technology, Cybernetics, and Internet have led to a knowledge revolution that needs to be tamed and directed towards attainment of board objectives of civilization and development in general. In particular, an efficient management of unlimited knowledge strewn around can be a differentiating feature for an organization that may be singled out as a distinctly superior entity in comparison to its competitors. This on-going knowledge revolution has given unprecedented scope, growth and competition to the banking and financial sector also. Further, the universalisation of banking operation driven by BASEL Committee has reduced banking boundaries. Today the challenge before the banks is how to develop and share the organizational knowledge on continuous basis for the business development. Here, knowledge has emerged as the most important ingredient for success of any organization or individual and continuous learning has become an imperative for any organization or individual to survive and prosper.

## What is Knowledge Management?

Knowledge Management (KM) simply means management of knowledge. Different organizations have defined KM in a different manner. It may be defined as "the process of increasing organizational intelligence through involvement and participation in the organization's knowledge capital, for creating business value and generating a competitive advantage.

According to Jennifer Rowley " Knowledge management is concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the organization's objectives.

Further, it can be defined as 'the systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use and exploitation.

To put it more succinctly, KM addresses business issues in the respect of products and services, enhancing customer relationship and improving work processes.

## Objectives of Knowledge Management:

While the objectives of KM differ from organization to organization, the following basic points emerge:

- How an organization will manage its knowledge better for the benefit of the organization and its stakeholder. It must consist of a goal and purposes, guiding principles, and proposed action plans and monitoring mechanism.
- It should assimilate and disseminate relevant and high-quality knowledge by organization to stakeholders and to other users.
- It should enhance learning process: knowledge capture and sharing within the organization.
- To enable adoption of new technology for diversification and growth.
- To achieve service excellence.

## Functions of KM:

While every organization's objectives and requirements are different, basic KM functions includes- abstracting, making meaning to explicit knowledge/information and deconstructing

information into nodes and relationship to represent knowledge etc- are common to all business environments. These functions can be categorized as follows:

- Finding, mapping, gathering and filtering information.
- Creating and developing new knowledge.
- Converting personal knowledge into shared knowledge resources.
- Understanding, learning, acquiring or extracting knowledge value.
- Adding value to information to create knowledge
- Enhancing performance and management.
- Consistent improvement in knowledge sharing mechanisms and processing of the same.
- Delivering (Transferring) knowledge
- To develop a sound and well-integrated technical architecture which is appropriate to the processing needs of the organization.

## Why we need KM in Banks?

Knowledge management solutions are now the most important strategic technologies for large companies, according to a new report and survey of European executives by the Economist Intelligence Unit (EIU.com, 2003), sponsored by Tata Consultancy Services. In the survey, 67% of companies cite knowledge management/business intelligence solutions as important to achieving their strategic goals over the next three years. To serve customers well and remain in business companies must: reduce their cycle times, operate with minimum fixed assets and overhead (people, inventory and facilities), shorten product development time, improve customer service, empower employees, innovate and deliver high quality products, enhance flexibility and adoption, capture information, create knowledge, share and learn. None of this is possible without a continual focus on the creation, updating, availability, quality and use of knowledge by all employees and teams, at work and in the marketplace. Similarly, due to globalization, liberalization, and deregulation, the face of financial markets is changing very fast and banking is no exception to it. In such a turbulent environment, Banks have a unique opportunity and the need to succeed in this market place by doing things better than others. Therefore, some of the need of KM in Banks is as follows:

- For Better customer knowledge
- For Better knowledge of products and services
- For Better knowledge of processes
- For Skill development
- For better knowledge of people
- For better market intelligence
- For Sharing of best practices
- For Better customer service
- Prevention of knowledge walkouts

## Components of KM:

Based on actual experiences of the leading global KM case studies, the components for KM can be broadly categorized into three classes - People, Processes, and Technology (Figure 1). While all three are critical to build a learning organization and get business results from KM, a majority of organizations worldwide implementing KM have found it relatively easier to put technology and processes in place, whereas the "people" component has posed greater challenges. The biggest challenge in KM is to ensure participation by the people or employees in the knowledge sharing, collaboration and re-use to achieve business results. In many organizations, this requires changing traditional mindsets and organizational culture from "knowledge-hoarding" (to keep hidden or private) to

"knowledge-sharing", (share among team members) and creating an atmosphere of trust. This is achieved through a combination of motivation / recognition and rewards, re-alignment of performance appraisal systems, and other measurement systems. A key to success in KM is to provide people visibility, recognition and credit as "experts" in their respective areas of specialization - while leveraging their expertise for business success.

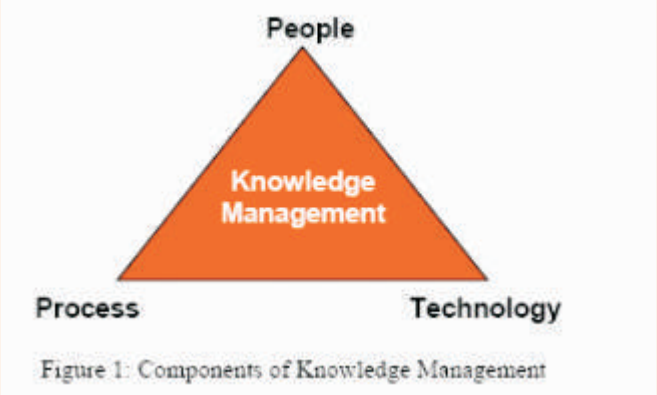


Figure 1: Components of Knowledge Management

The Process component include standard processes for knowledge-contribution, content management (accepting content, maintaining quality, keeping content current, deleting or archiving content that is obsolete), retrieval, membership on communities of practice, implementation-projects based on knowledge-reuse, methodology and standard formats to document best-practices and case studies, etc. It is important for processes to be as clear and simple as possible and well understood by employees across the organization. KM technology solutions provide functionality to support knowledge sharing, collaboration, workflow, and document-management across the bank and beyond. These tools typically provide a secure central space where employees, customers, partners and suppliers can exchange information, share knowledge and guide each other and the organization to better decisions. The most popular form of KM technology enablement is the Knowledge-Portal on the Corporate/Bank Intranet (and extranets where customers, partners and/or suppliers are involved). Common technologies used for knowledge portals include standard Microsoft technologies or Lotus Notes databases. A Bank must choose a technology option that meets its KM objectives and investment plan. While technology is a key enabler to KM, it is important to ensure that the technology solution does not take the focus away from business issues and is user-friendly and simple to use.

| Process of KM | Tasks/activities require |
|---|---|
| Knowledge identification/ discovery | Defines what knowledge the organization needs for business success and iden tifies what it has and doesn't have (as well as what it has that it doesn't need) |
| Knowledge creation/acquisition | Determines where valuable knowledge is being created within the organization and defines what the organization needs to acquire from external sources |
| Knowledge Capture /storage/codification/ retrieval | Supports the capture, storage, and codification of valuable knowledge for effective retrieval |
| Knowledge sharing/transfer/flow | Develops a sharing culture so that knowledge is transferred efficiently to where it is needed |

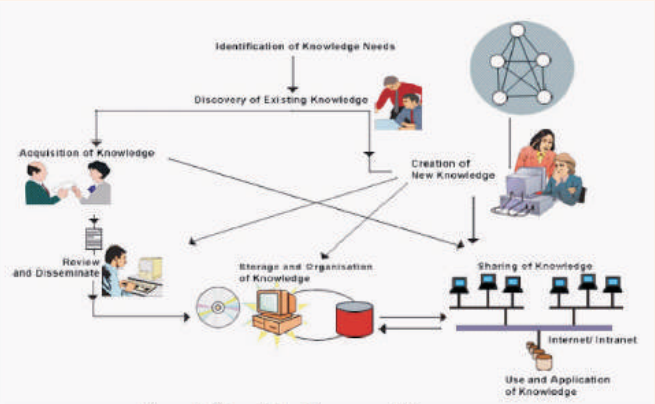


Figure 2: Knowledge Management Process
(Source: ANGLER at http://www.angleritech.com)

## Problems in implementation of KM process in Banks:

Though, the banks have recognized importance of knowledge management, they are facing problems while implementing this concept. Some of the major obstacles in this regard are as follows:

1) **Legacy:** Typical closed mindset which over a period, worked under a controlled environment.
2) **Unionism**: There are strong unions of bank employees to protect the rights of their members. However, in the process, inadvertently they also have protected inefficiencies.
3) **Attitude to "Control"**: Development of attitude to "Command" and "Control" in Banks, discourage the innovative spirit, freedom of work, openness in communication, expression of views, knowledge sharing attitude etc.
4) Resistances for change by self contended people are major block in the process of evolving KM strategies in Banks.

Apart from all these some of the most common obstacles are as follow:

- Lack of balance between knowledge provider and knowledge receiver.
- Lack of trust among themselves
- Lack of common terminology and shared understanding of key ideas.
- Diverse cultures, languages and habits
- Lack of humble acceptance of knowledge
- Organized recognition and reward systems usually do not sufficiently recognize knowledge contributors.
- Intolerance against mistakes and lack of help when there is a need
- Unorganized information
- Lack of systematic approach in dealing with information
- Poor network infrastructure for successful implementation and management of knowledge.
- Creation of a culture that supports innovation, learning, and knowledge sharing.
- Networking of internal and external experts in order to have the right knowledge at the right time at the right place or find it as quickly as possible.
- A technical infrastructure that supports knowledge work from simple knowledge support tools to entrants and ultimately more sophisticated group ware and decision support.

## Application of KM in Banking:

The true applications of KM in Banks can be viewed by providing the customer, convenience banking on 24X7 basis by deploying core banking solution with integrated delivery channels like ATM, Internet, phone, mobile, Kiosk, call center, Anti-Money Laundering & KYC guidelines. Further, it is applied to Branch computerization, Wide Areas Networking- Networking of branches under CBS, Risk Management, Cheque Truncation, Global Treasury, Securitization, RTGS (Real Time Gross Settlement), On-line Trading, Mutual Funds, On-line Tax Accounting Systems etc. More over, it can be seen in varieties form which can broadly be divided into following points:

1) To know customers' financial standing and behavioral pattern
2) Creation of data warehouse and data mining
3) For Business Innovation
4) For Assessing Loan Risks
5) Customer Centricity
6) For Competitiveness

7) Creation of online discussion forums
8) Creation of Online Conferencing and Collaboration
9) Communities of practice
10) Web Intelligence

## Conclusion:

Managing Knowledge- whether explicit or tacit- has implications for innovation, cost cutting and improved competitiveness. Consequently, the implementation of KM as the process of generating, accumulating, sharing and using knowledge to create and restore value in Banks is increasing and maturing. It is also substantially enhancing the productivity of individual and group in Banks by allowing the use and reuse of knowledge and in doing strategic tasks such as customer relation management. In general, knowledge management initiatives in banking services fall into two main categories. First, knowledge management is seen as an integral part of overall corporate strategy, and aims to grow, extract and exploit the bank's knowledge to increase shareholder value. The second focus is on improving the knowledge necessary to carry out specific business processes and thereby improving efficiency.

The banking sector as a whole, like other sectors, has realized the importance of KM function. At the same time, they are also facing many problems in creating the desired work environment under which this function will develop properly. In a situation when Banks have no alternative except "perform" or "perish", they have to take pragmatic steps to build a knowledge chain, create knowledge wealth with the immediate implementation of KM to significantly enhance their level of performance.

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# KNOWLEDGE MANAGEMENT IN INSURANCE INDUSTRY THROUGH DATA WAREHOUSING SYSTEM

*- Anshum Srivastava,*
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**Abstract:**

Data has come to occupy a very important place in several management functions, irrespective of the domain to which an organization belongs. There has also been a growing realization that decision making based on statistical bases tends to be closer to accuracy, for obvious reasons. Lack of data also hampers steady growth of business. Particularly in a domain that has to do with large numbers and accuracy of assessment, the need for collection and generation of data-based information needs no emphasis. The importance of data for successful conduct of business cannot be over emphasized. This holds true for almost all types of businesses universally, as business decisions have to be taken considering the past experiences, present scenario and future projections. The importance of data is most paramount in the insurance industry. For insurers to generate actuarial assumptions which are so vital for such important management functions like underwriting and pricing; the quality of data is required to be of a high order viz. comprehensive, clean and meaningful. The process of collecting data; apply the standards of cleansing and storage; compiling the data and storing it in a usable form are all replete with huge costs and deployment of precious manpower resources. Insurance companies should take cognizance of this fact while creating a database.

**Introduction:**

The insurance sector has witnessed intense competition, changing market scenario and growing risks and complexities post opening up. A cautious approach to adopting technology means that insurance companies lag behind in decision support. Adopting data warehousing and data mining solutions will give a strategic advantage to insurers to provide better policies, improved appropriate pricing and better risk management.

At the industry level, data warehousing should be used as a dynamic repository of information that should be ideally accessible to all players. By applying proper techniques of mining, insurers should be capable of drawing information from the common warehouse that would eventually obviate the problems associated with adverse selection. Towards accomplishing this, all players should realize their responsibility to contribute clean and reliable data; and in time, at that. This is particularly important in a domain where there are multiple players; and also where information asymmetry continues to be a bothersome factor. The collection and maintenance of data should not be an exercise that limits itself to a mere formality or for reasons of fashion but it should be appreciated that it is a corporate need. The mechanism that is associated with data collection and analysis is bound to be expensive and there is also the possibility of early obsolescence.

As such, it is essential that organizations ensure optimum utilization of whatever resources are pooled into the process. There is also a need to ensure that the data collected is based on the needs of the organization and that it is tuned to the business requirements. A well-designed data warehouse

supported by suitable mining techniques go a long way in alleviating most problems associated with data-based management decisions. In the insurance industry, for example, it could lead to a wide range of benefits like creation of better policy types that aim at the right segments, better pricing strategies, more reliable risk assessment and underwriting etc; apart from higher efficiencies in claims settlement and other customer service activities. It should however be ensured that the data obtained is homogenous in nature and at the right level of granularity. Data warehousing and mining techniques provide the right balance for maintenance of a high level of data related accuracy.

## Insurance: A matter of choice

Insurance is defined as the equitable transfer of the risk of a loss, from one entity to another, in exchange for payment. An insurer is a company selling the insurance; an insured or policyholder is the person or entity buying the insurance policy. The insurance rate is a factor used to determine the amount to be charged for a certain amount of insurance coverage, called the premium. Risk management, the practice of appraising and controlling risk, has evolved as a discrete field of study and practice.

The transaction involves the insured assuming a guaranteed and known relatively small loss in the form of payment to the insurer in exchange for the insurer's promise to compensate (indemnify) the insured in the case of a large, possibly devastating loss. The insured receives a contract called the insurance policy which details the conditions and circumstances under which the insured will be compensated.

The customer today can choose between insuring and not insuring, between bearing the risk himself or through industry / mutual arrangements, or passing on the risk to an insurer. His choice depends on the industry players, schemes available, the nature and types of risks, the costs involved, the associated risks, the probability of occurrence, the likely impact on business and the risk appetite, approach and attitude. Insurance companies that recognize this factor; and are proactive in managing and tuning their business to customer needs will prove most successful in today's competitive environment.

## Trends of Insurance in India

With the de-regulation in Indian Insurance industry, the monopoly of public sector companies in life insurance and general insurance has come to an end. The insurance industry in India has gone through many transitions, the latest being the opening up of the insurance sector to private and international players. With this, the monopoly of the public sector nationalized insurance companies has been replaced by competition albeit in a space regulated by the IRDA, thereby giving a choice for the first time to the consumer, the insured. IRDA has the responsibility of protecting the interest of insurance policyholders. Towards achieving this objective, the Authority has taken the following steps:

- IRDA has notified Protection of Policyholders Interest Regulations 2001 to provide for: policy proposal documents in easily understandable language; claims procedure in both life and non-life; setting up of grievance redressal machinery; speedy settlement of claims; and policyholders' servicing. The Regulation also provides for payment of interest by insurers for the delay in settlement of claim.

- The insurers are required to maintain solvency margins so that they are in a position to meet their obligations towards policyholders with regard to payment of claims.
- It is obligatory on the part of the insurance companies to disclose clearly the benefits, terms and conditions under the policy. The advertisements issued by the insurers should not mislead the insuring public.
- All insurers are required to set up proper grievance redress machinery in their head office and at their other offices.
- The Authority takes up with the insurers any complaint received from the policyholders in connection with services provided by them under the insurance contract.

## Life Cycle of Insurance

The life cycle of insurance can be viewed and analyzed from two perspectives. One is that of the consumer (insured), and the other that of the insurer. The insured is looking at risks and impact for appropriate treatment to mitigate and control losses and to obtain maximum recoupment. On the other hand, the insurer is looking at risks to develop products and address the needs of the insured and earn a fair return by way of premiums that will give him profits / surplus over and above the claims settlement. The approach of the insured is from an individual perspective, and that of the insurer from a macro perspective. Both are looking at risks and outcomes – one from the loss perspective and the other from the claims perspective. The relationship is mutual, symbiotic and interdependent. However, it also therefore envisages a better understanding of the risks, their likelihood and impact and the needs and pain points of consumers.

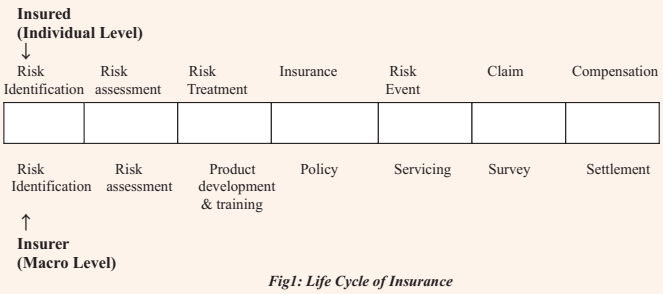


*Fig1: Life Cycle of Insurance*

## Data Warehouse & Data Marts

A data warehouse is the foundation of powerful analyses. It supports business decision making by allowing managers and analysts to examine data and perform powerful analysis easily and quickly. It facilitates measurement of the effects of various combinations of factors (geographic, demographic, rating and underwriting variables) on sales, premium, losses, loss frequency, loss severity, loss ratio, customer retention and other measures, and provides a strong platform for regression analysis and various other forms of predictive analysis.

The term "data warehouse" is often used in different contexts to mean different things. Data warehouses can be categorized in three types: Corporate Data Warehouses, Data Marts, and Operational Data Stores. Ideally, a company would like to have a "single version of the truth" in one large Corporate Data Warehouse so that all data used for reporting and analysis is extracted from it. Such a data warehouse will contain a large amount of detailed transaction-level historical data that covers multiple subject business areas brought together from multiple sources, and integrated into a convenient format for extracting information for building Data marts for individual departments and for other uses that require detailed, granular historical data. In practice, a large company may have more than one data warehouse, but not too many.

Data marts are built to address the analytical needs of individual departments. For example, while Actuarial and Underwriting areas could possibly share a data mart, Marketing may need to have a separate data mart oriented to its specific needs and the Claims Department may have

to have still another data mart. Like the larger data warehouse, data marts typically contain historical data. Selected data is summarized to a level adequate to meet the intended analytical needs, for inclusion in the data mart. For example, actuaries typically do not need many items of data that might be of interest to Claims professionals. The data for the data mart may come either exclusively from a data warehouse or certain operational systems, or both.

Many experts advise against building data marts before completing an enterprise-wide data warehouse. They also prefer to have all the data for the data mart come from the data warehouse. They fear that otherwise, data cleansing efforts will be inadequate and proliferation of independent "stove pipe" data marts will result in many inconsistent "versions of the truth", resulting in indecision and frequent and expensive efforts at reconciling data sources.

Operational Data Store, unlike the data warehouse or the data mart, contains near-real time data captured from operational systems. This data is used for tactical analysis to support on-line operations.

Data warehousing is an on-going process, rather than a "once and done" effort. As the company and the business change, the data warehouse, operational data stores and data marts need to evolve with them. New data will have to be captured, and analytical tools have to be developed and continuously improved.

## Need for Data Warehouse in Insurance

In a traditional environment, operational systems like policy management and claims management systems provide function –specific reports which can be used to extract information about a particular event. These operational reports are useful for functional staff; however they provide very little strategic insight about the overall effectiveness of company operations.

In order to assess the growth of company, management needs to assess the interdependencies and impact of several factors like product risks, geography, claims volume, customer loyalty, underwriting effectiveness, etc. on the bottom line. Such an exercise is impossible without the ability to pull together data from various operational processes and analyze the impact of one factor on the other and on the whole. One of the most difficult aspects of this, however, is comparing apples to apples as information from operational systems is rarely compatible.

Figure 2.0 highlights key areas. Getting a better handle on these key areas is necessary for an insurance company to remain competitive and achieve profitable growth. It is important to note that no single departmental application can be expected to provide an overall picture of the business. The data from multiple process areas must be combined together to get cross-functional intelligence. This central repository is called a Data Warehouse.

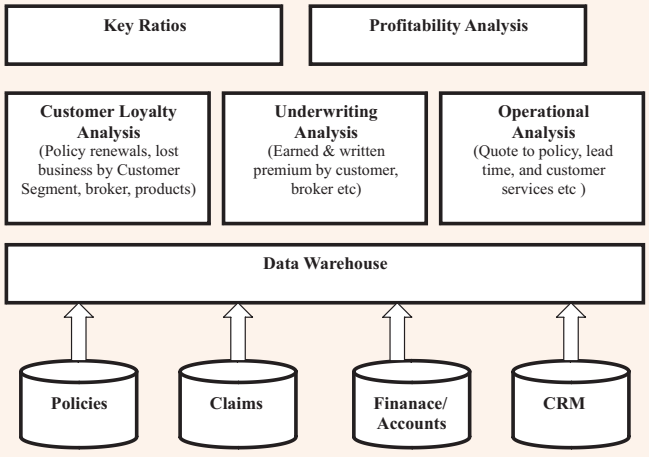


**Fig 2: Central Data Repository**

(A central data repository allows decision makers to put multiple pieces of the puzzle together and respond in a better and more timely manner).

## Implementation

The business needs are most critical in determining the contents and capabilities of the Business Intelligence system. Often such projects fail because they are built on the assumption that "if we build, they will come". Even having the right software and top management support may not provide the expected benefits unless there is buy-in from the users. The process of building the data warehouse should go hand in hand with building analytical expertise. The implementation of data mining and data warehousing for the insurance sector will necessitate adoption of OLAP – On Line Analytical

Processing – Decision Support software that allows users to analyze information into multidimensional summarized views and hierarchies. These help trend analysis, exponential fits for decision making.

The electronic capture and storage of vast amount of data in data warehouses provide adequate data for analysis by Business Intelligence tools for strategic decision making. OLAP gives information that helps decision making, on the other hand knowledge management is itself a part of automated decision support and decision making process. Knowledge management process has six stages. These are shown in fig 3.

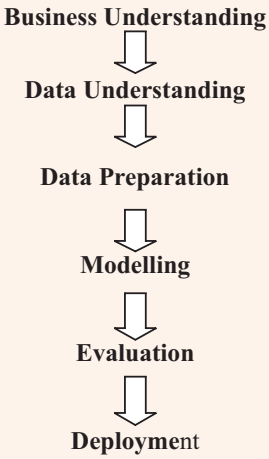


**Fig 3 : Knowledge Management Process**

## Conclusion:

Data warehouses, data marts, OLAP and predictive analytics are essential components of a Business Intelligence system. The data warehouse enables efficient separation of historical data used for analysis from transactional databases. Business needs must drive decisions about the structure and functionality of the data warehouse or data mart. The data warehouse must be well planned for the organization to realize the expected analytical efficiencies.

Visionary leadership of leading, frontline players can take advantage of the potential of the technology that data warehousing and data mining can deliver to the insurance industry capitalizing on the advantages of better designed policies, appropriate pricing; and lower risk to the insurer can ultimately lead to securitization of risk portfolios thereby providing stability, growth and great potential for the insurance sector.

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**Attitude**

The longer I live, the more I realize the impact attitude has on life.
Attitude to me is more important than facts.
It is more important than the past, than education,
than money, than circumstances, than failures,
than successes, than what other people think or say or do.
It is more important than appearance, giftedness or skill.
It will make or break a company...a church...a home.
The remarkable thing is we have a choice everyday
regarding the attitude we will embrace for the day.
We cannot change our past. We cannot change the fact that people will act in a certain way.
We cannot change the inevitable.
The only thing we can do is play on the one string we have,
and that is our attitude.
I am convinced that life is 10% what happens to me and 90% how I react to it.
And so it is with you.
We are in charge of our attitudes.

***~Charles Swindol***

# UBIQUITOUS COMPUTING

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The word "ubiquitous" can be defined as "existing or being everywhere at the same time," "constantly encountered," and "widespread." When applying this concept to technology, the term ubiquitous implies that technology is everywhere and we use it all the time. Because of the pervasiveness of these technologies, we tend to use them without thinking about the tool. Instead, we focus on the task at hand, making the technology effectively invisible to the user. Ubiquitous technology is often wireless, mobile, and networked, making its users more connected to the world around them and the people in it.

In general we can say that ubiquitous computing is making many computers available throughout the physical environment, while making them effectively invisible to the user. Ubiquitous computing is held by some to be the Third Wave of computing. The First Wave was many people per computer; the Second Wave was one person per computer. The Third Wave will be many computers per person. Three key technical issues are: power consumption, user interface, and wireless connectivity. The idea of ubiquitous computing as invisible computation was first articulated by Mark Weiser in 1988 at the Computer Science Lab at Xerox PARC.

Ubiquitous computing (ubicomp) is a post-desktop model of human-computer interaction in which information processing has been thoroughly integrated into everyday objects and activities. In the course of ordinary activities, someone "using" ubiquitous computing engages many computational devices and systems simultaneously, and may not necessarily even be aware that they are doing so. This model is usually considered advancement from the desktop paradigm. More formally Ubiquitous computing is defined as "machines that fit the human environment instead of forcing humans to enter theirs."

At their core, all models of ubiquitous computing (also called pervasive computing) share a vision of small, inexpensive, robust networked processing devices, distributed at all scales throughout everyday life and generally turned to distinctly common-place ends.

- Successful ubiquitous applications augment existing valued interactions rather than seeking to replace them.
- Successful applications use real world objects and humans at crucial points in the distribution and transmission of data, they do not insist on end-to-end digital data transfer and control.

For example, a domestic ubiquitous computing environment might interconnect lighting and environmental controls with personal biometric monitors woven into clothing so that illumination and heating conditions in a room might be modulated, continuously and imperceptibly. Another common scenario posits refrigerators "aware" of their suitably-tagged contents, able to both plan a variety of menus from the food actually on hand, and warn users of stale or spoiled food.

Ubiquitous computing is the extensive use of embedded micro-controllers and automatic id

systems in ways that are transparent to the user. Some examples are the engine control computer in your car, tivo, DVD, blu-ray players and other audio-video gear. Location dependent services on cell phones are another example.

Creating such an intuitive and distributed system requires two key ingredients: communication and context. Communication allows system components to share information about their status, the user and the environment---that is, the context in which they are operating. Specifically, context information might include such elements as:

- The name of the user's current location;
- The identities of the user and of other people nearby;
- The identities and status of the nearby printers, workstations, Live boards, coffee machines, etc.;
- Physical parameters such as time, temperature, light level and weather conditions.

The combination of mobile computing and context communications can be a powerful one Consider, for example, an employee who wants to show a set of figures to his manager. As he approaches his office, a quick glance at his tab confirms that the boss is in and alone. In the midst of their conversation, the employee uses the tab to locate the data file on the network server and to request a printout. The system sends his request by default to the closest printer and notifies him when the job is finished.

## A Ubiquitous Computing Infrastructure

Ubiquitous computing is roughly the opposite of virtual reality. Where virtual reality puts people inside a computer-generated world, ubiquitous computing forces the computer to live out here in the world with people. Virtual reality is primarily a horse power problem; ubiquitous computing is a very difficult integration of human factors, computer science, engineering, and social sciences.

Ubiquitous computing presents challenges across computer science: in systems design and engineering, in systems modeling, and in user interface design. Contemporary human-computer interaction models, whether command-line, menu-driven, or GUI-based, are inappropriate and inadequate to the ubiquitous case. This suggests that the "natural" interaction paradigm appropriate to a fully robust ubiquitous computing has yet to emerge - although there is also recognition in the field that in many ways we are already living in an ubicomp world. Contemporary devices that lend some support to this latter idea include mobile phones, digital audio players, radio-frequency identification tags, GPS, and interactive whiteboards

Attaining the goals of Ubiquitous Computing will require a highly sophisticated infrastructure. In the ideal system, a real-time tracking mechanism will derive the locations and operational status of many system components and will use that context to deliver messages more intelligently. Users will be able to choose from among a variety of devices to gain mobile, high-bandwidth access to data and computational resources anywhere on the network. These devices will be intuitive, attractive and responsive. They will automatically adapt their behavior to suit the current user and context.

Although one can speculate about the design of a future system, unfortunately the components needed to build such an infrastructure have yet to be invented.

# FUTURE DIRECTIONS FOR TOTAL QUALITY MANAGEMENT

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## Abstract

Total Quality Management is a management style based upon producing quality service as defined by the customer. TQM is defined as a quality-centered, customer-focused, fact-based, team-driven, senior-management-led process to achieve an organization's strategic imperative through continuous process improvement. TQM principles are also known as total quality improvement, world class quality, continuous quality improvement, total service quality, and total quality leadership.TQM is not a complete solution formula as viewed by many – formulas can not solve managerial problems, but a lasting commitment to the process of continuous improvement.

The main objective of this research paper is a method by which management and employees can become involved in the continuous improvement of the production of goods and services. It is a combination of quality and management tools aimed at increasing business and reducing losses due to wasteful practices.

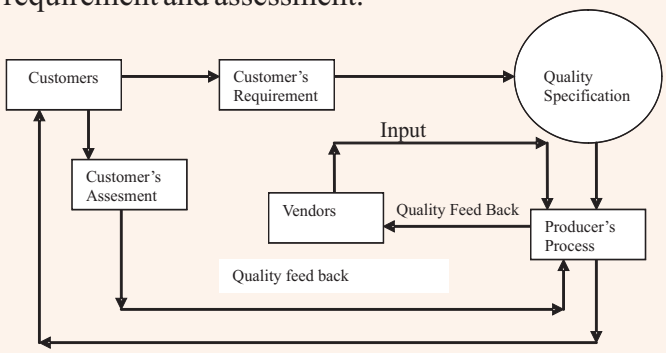
## 1. Introduction

### 1.1 Definition of Quality

Quality is a term which has a very wide range of meaning depending upon situation and circumstances. It is a relative term. The quality is good or bad is decided with respect to the some contrary ideal one. It has been listen many times that the particular item or component failed due to the poor quality and particular item or component is having a very long life due to its good quality. The quality of a product may have greater or lesser importance depending upon the need or requirement of customer or user. Some of the important definitions of Quality are as under-

- It is the degree to which the product meets the requirement of Customer.
- It is the fitness of product or services for it's intended use.
- The Quality of a product is it's reliability in respect of it's various characteristics of shape, make, dimensions, finish, utility, durability and ease in use to the customer.
- Quality is the totality of features and characteristics of product and services that bear on its ability to satisfy a given need. (As per American Society of Quality Control i.e. ASQC, Standards A3 – 1987, Glossary and table of SQC)

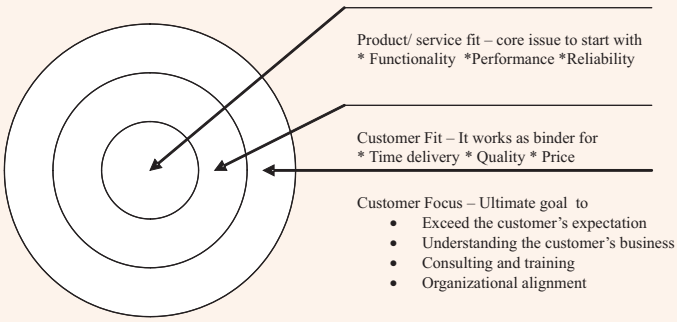
The determination of quality is being done by customers itself. Following is the model for determination of quality by customer where customer determines the quality in two ways i.e. by requirement and assessment.




### 1.2 Goal of quality

Quality always spins arround the customers.

The core issue to start with is that the product and service should be fit in functionality, performance and reliability. It should also be to customer fit in respect to on time delivery, quality and price. At the same time goal of quality should be customer focused. The ultimate goal of quality is the customer focused as given in following models.




**Goal of Quality Figure-2**

## 1.3 Total Quality Management (TQM)

### 1.3.1 Definition-

The word "total" in Total Quality Management means that everyone in the organization must be involved in the continuous improvement effort, the word "quality" shows a concern for customer satisfaction, and the word "management" refers to the people and processes needed to achieve the quality.Total Quality Management is not a program; it is a systematic, integrated, and organizational way-of-life directed at the continuous improvement of an organization. It is not a management fad; it is a proven management style used successfully for decades in organizations around the world. TQM is not an end in itself; it is a means to an organizational end. Total Quality Management must not be the primary focus of an organization; it should merely be the means to achieve organizational goals.

Total Quality Management differs from other management styles in that it is more concerned with quality during production than it is with the quality of the result of production. Other management styles have different concerns. Some major styles are compared with TQM as follows.

**Management-by-Objectives (MBO)** emphasizes achieving specified objectives, under the control of individual managers. This approach works against multi-functional process performance and interferes with teamwork and quality. TQM is not objective-oriented, except for its one goal of achieving continuous quality improvement.

**Management-by-Results (MBR)** is management by viewing past results as an indication of future results. It has been compared to driving an automobile in a forward direction while looking in the rear view mirror. In today's fast-paced, quick-changing business environment, managers cannot rely on past results as a predictor of future performance. In contrast, TQM is only concerned with current results and ways to improve them.

**Management-by-Exception (MBE)** is management by identifying specific targets for management attention and action. It produces short-term results by reacting to immediate problems, but there is no analysis of the processes that produced the problems, so long-term benefits are lost. On the other hand, TQM is more concerned with correcting processes that produce problems than it is with responding to individual problems.

### 1.3.2 History of TQM-

Total Quality Management was developed in the mid 1940s by Dr. W. Edward Deming who at the time was an advisor in sampling at the Bureau of Census and later became a professor of statistics at the New York University Graduate School of Business Administration. He had little success convincing American businesses to adopt TQM but his management methods did gain success in Japan.After World War II, General Macarthur took

200 scientists and specialists, including Dr. Deming, to Japan to help rebuild the country. While working on the Japanese census, Dr. Deming was invited by the Japanese Union of Scientists and Engineers to give lectures on his statistical quality techniques. One of the attendees was a past professor to many of Japan's CEOs. After attending the lectures, the professor told his CEO students that, if they wanted to turn Japan's economy around in five years, they should attend Dr. Deming's lectures on using statistics to achieve quality at a reduced cost. Many of the CEOs took the professor's advice and attended the lectures.

### 1.3.3 Advantages of TQM-

Short-term and long-term advantages are present in any management style. Total Quality Management has few short-term advantages. Most of its benefits are long-term and come into effect only after it is running smoothly. In large organizations, it may take several years before long-term benefits are realized.Long-term benefits that may be expected from Total Quality Management are higher productivity, increased morale, reduced costs, and greater customer commitment. These benefits may lead to greater public support and improvement of an organization's public image. Eliminating errors and doing things right the first time saves time and resources. The savings may then be used for expansion of services or made available to employees in their efforts to increase service quality.

Total Quality Management may create an organizational atmosphere of excitement and sense of accomplishment through the rewarding of creativity. When experimentation-oriented failures are accepted as a part of the learning process, employees feel free to use their creative energies to develop new ideas.Instead of mistakes being hidden from management or denied, and thus being allowed to blossom into larger less easily rectified problems, they are tolerated and employees are encouraged to try again. Employees begin to develop a commitment to the organization rather than looking at it as just their employer. When employees feel they are an integral part of the organization, they feel needed and enjoy work more, which may further increase service quality.

### 1.3.4 Disadvantages of TQM-

Some Total Quality Management detractors have noted that long-range plans advocated by TQM may limit an organization's flexibility and agility. TQM teaches that a long-term plan is required to achieve a complete quality transformation, but a long-term plan that has been pursued for a long period may become an end unto itself. Completion of the plan becomes the ultimate goal. Objectives the plan was designed to accomplish are forgotten; achieving the transformation becomes the most important objective. Instead of maintaining continuous change, the organization may reach a stable point and stagnate. To produce continuously high quality services, an organization must react quickly to changes in the community and not be restricted by its management style.

### 1.3.5 Adopt a TQM framework for quality management

Total Quality Management, or TQM, has been implemented in many healthcare organizations during the last decade. The teachings of industrial quality gurus, such as Deming and Juran, have established new principles and processes for managing quality. Personally, I have found that Deming provides the principles for what needs to be done and that Juran describes the methodologies or processes for getting it done.


Figure-3

Juran's quality triology is particularly important because it identifies quality planning as an integral component of TQM . We have illustrated how quality planning can be integrated with other quality management functions using the model shown in the accompanying figure [3]. This TQM framework involves quality laboratory processes, quality control, quality assessment, quality improvement, quality planning, and quality goals.

- **Quality Laboratory Processes (QLP)** refers to the policies, procedures, personnel standards, and physical resources that determine how work gets done in the laboratory. Laboratory method manuals describe the standard operating processes for producing test results.
- **Quality Control (QC)** refers to procedures for monitoring the work processes, detecting problems, and making corrections prior to delivery of products or services. Statistical process control, or statistical quality control, is the major procedure for monitoring the analytical performance of laboratory methods.
- **Quality Assessment (QA)** refers to the broader monitoring of other dimensions or characteristics of quality. Quality involves the totality of features and characteristics that bear on the achievement and satisfaction of customer needs. Characteristics such as turnaround time, patient preparation, specimen acquisition, etc., are monitored through QA activities. Proficiency testing provides an external or outside measure of analytical performance.
- **Quality Improvement (QI)** is aimed at determining the causes or sources of problems identified by QC and QA. The causes of some problems can be determined by individual analysts. Other problems may require a team of people and a team problem-solving process and team problem-solving tools (such as the flowchart, Pareto diagram, Ishikawa cause and effect diagram, force field analysis, etc) .
- **Quality Planning (QP)** is concerned with establishing and validating processes that meet customer needs. The selection and evaluation of new methods and instruments fits here, as well as selection and design of QC procedures.
- **Quality Goals** represent the requirements that must be achieved to satisfy the needs of customers. For analytical quality, the requirement is to provide test results that are correct within stated limits.

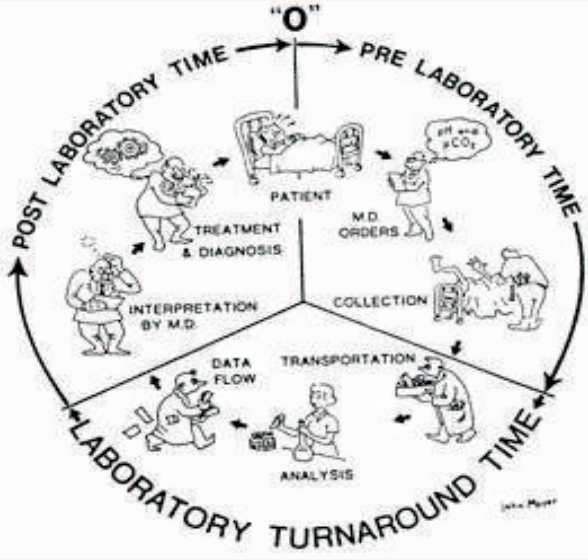
### 1.3.6 Learn the principles of quality planning from industry

Industry has learned that to guarantee quality it is necessary to specify what performance is required and how to know if that performance is achieved. An operational definition is needed to tell people what to do and how to know if they're doing it right. For example, "**answer the telephone within three rings**" tells a person what to do and how to know if they're achieving the desired performance. The important message here is that bench level

specifications are needed to assure the quality of routine operations. For analytical quality, these operating specifications must describe the imprecision and inaccuracy that are allowable for the method and the control rules and number of control measurements that are necessary for routine QC.

### 1.3.7 Utilize available quality-planning tools and technology

It is easy to see how this planning approach can be used to achieve the desired turnaround time for a laboratory test. A quality requirement can be defined in the form of an allowable turnaround time on the basis of discussions with the users. The steps in the process can be identified from the point of ordering the test, acquiring the specimen, transporting the specimen, processing the specimen, analyzing a sample, reporting the result, and receiving the result. Portions of the allowable turnaround time can then be allocated to different steps in the process, establishing specifications for each of the steps, and allowing those steps to be monitored to be sure the desired performance can be achieved.




**Cartoon by John Meyer, MD.**
**Figure-4**

For analytical quality, the translation is more difficult. Quality-planning models are used to convert quality requirements into specifications for the imprecision and inaccuracy that are allowable and the QC that is necessary. These models are developed by identifying the various factors or steps in the process, allocating or budgeting a portion of the quality requirement to that factor or step, building in a QC check to assure the desired quality or performance is achieved for that factor or step, then balancing the budget for the whole process and monitoring (or controlling) that budget during routine operation .

## 2. Conclusion

**Total Quality Management** encourages participation amongst shop floor workers and managers. There is no single theoretical formalization of total quality, but Deming, Juran and Ishikawa provide the core assumptions, as a discipline and philosophy of management which institutionalizes planned and continuous.. Improvement. and assumes that quality is the outcome of all activities that take place within an organization; that all functions and all employees have to participate in the improvement process.

## 3. Future Work

No evaluation on quality management systems would be complete without noting the potential for additional improvements. The quality process demands a push toward continuous improvement of customer focus and operational procedures. Quality is a journey, not a destination.

In future, there are four major opportunities for improvement in the quality planning process:

- Additional strategic planning initiatives
- Organizational goal setting
- Evaluation of correct performance indicators
- Development of additional internal and

external performance measures for the organization.

The next few years should prove quite exciting for organizations throughout the world. Quality thinking will play an extremely important role in changing these organizations. We are probably only beginning to understand how much we are going to change.

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**Two Brothers and the Geese**

Two sons work for their father on the family's farm. The younger brother had for some years been given more responsibility and reward, and one day the older brother asks his father to explain why.

The father says, "First, go to the Kelly's farm and see if they have any geese for sale - we need to add to our stock."

The brother soon returns with the answer, "Yes they have five geese they can sell to us."

That father then says, "Good, please ask them the price."

The son returns with the answer, "The geese are $10 each."

The father says, "Good, now ask if they can deliver the geese tomorrow."

And duly the son returns with the answer, "Yes, they can deliver the geese them tomorrow."

The father asks the older brother to wait and listen, and then calls to the younger brother in a nearby field, "Go to the Davidson's Farm and see if they have any geese for sale - we need to add to our stock."

The younger brother soon returns with the answer, "Yes, they have five geese for $10 each, or ten geese for $8 each; and they can deliver them tomorrow - I asked them to deliver the five unless they heard otherwise from us in the next hour. And I agreed that if we want the extra five geese we could buy them at $6 each."

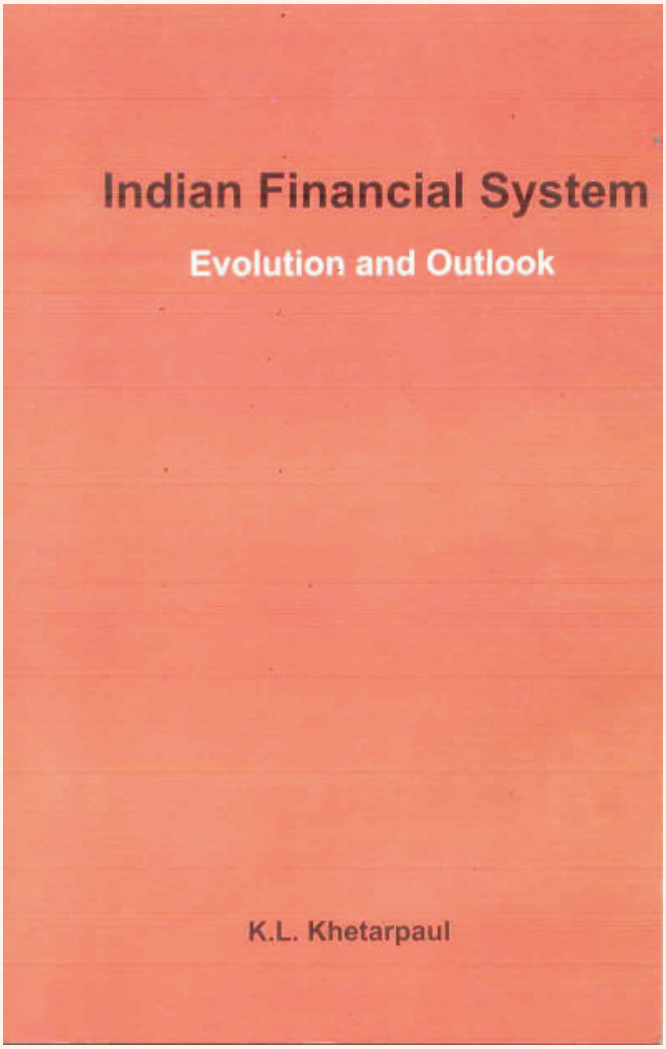
The father turned to the older son, who nodded his head in appreciation. He now realized why his brother was given more responsibility and reward.

***~author unknown***

## BOOK REVIEW

# Indian Financial System - Evolution and Outlook
# by Mr. K. L. Khetarpaul

The author retired as the Executive Director of Reserve Bank of India (RBI) and today turns out to be the leading Financial and Management Consultant in India with his new age consultancy enterprise, Khetarpaul and Associates. The book is a reflection of author's 37 years of experience of working with the regulatory body of India, its regulation and impact.




About the book : The book is an endeavour to narrate the basics of financial sector in simple terms and induct the reader to Indian Financial system's evolution, present structure and outlook. It covers India's banking sector, monetary policy, capital markets, foreign exchange and insurance sector - and the role of Reserve Bank of India in effectively guiding the sector. With 37year experience in India's banking system, the author shares a perspective of a regulator who has been involved in framing financial policy and regulation.

About the Author : Krishan Lall Khetarpaul retired as Executive Director of RBI in June 2003. He served as the Head of the Standing Technical Committee of RBI and SEBI for Capital Markets, was associated as Member of the Working Group on Consolidated Accounting and Supervision and Member of the Consultative Group of Directors of Banks/ Financial Institutions to review the functioning of their boards. He served as a nominee director on the boards of Jammu and Kashmir Bank Ltd. and Punjab National Bank and also Trustee on the board of Unit Trust of India. He was a director on the board of Deposit Insurance and Credit Gurantee corporation and a Member on the Governing Council of Indian Institute of Banking and Finance. He was the first Director of the Punjab National Bank Institute of Information Technology, Lucknow (2004 – 06)

# ADVANCED DIPLOMA IN BANKING TECHNOLOGY (ADBT) – BATCH IV

Punjab National Bank Institute of Information Technology (PNBIIT) set up by Punjab National Bank as an autonomous registered non-profit society, has been conducting various training programmes, seminars and conferences on contemporary topics for senior and middle level executives of banks and educational programmes for students for the past eight years.

Endeavoring to provide well groomed professionals to banks and IT companies supporting banks, PNBIIT launched a six month Advanced Diploma in Banking Technology (ADBT) in 2007 with focus on industry relevant core IT and inputs of banking including operational areas to serve as a bridge between academia and industry. ADBT prepares B Tech, BE & MCA pass outs with minimum 60% marks in qualifying examinations and age not more than 25 years to become techno bankers.

Out of the three successful batches of ADBT 83% students got placed from campus in following organisations -

4th Batch of ADBT commenced from 15.11.2010 and will conclude in May 2011. Details of the course curriculum and brief profile of the students of the ADBT-IV may be viewed at http://pnbiit.ac.in/placement_cell.php. While wishing them all success in their career, we invite prospective companies at the Institute for campus recruitment during 15th to 30th April 2011. For arrangements, please contact Sh. Sunil Agrawal, Chief Faculty and Placement In charge (Tel : 0522 272 1442 / 1173 / 1174, Mobile: +91 9415008868)