



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

FACULTY OF ENGINEERING

DEPARTMENT OF INDUSTRIAL AND MANUFACTURING ENGINEERING

Master of Engineering in Manufacturing Systems and Operations Management

MANUFACTURING STRATEGY

TIE 6211

First Semester Examination Paper

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This examination paper consists of 15 pages

Time Allowed: 3 hours + Thirty (30) minutes reading time

Total Marks: 100

Special Requirements: Case Study XEROX- THE BENCHMARKING STORY

Examiner's Name: S Mhlanga

INSTRUCTIONS

1. Answer **all** questions in **Section A** which carries **40 marks**
2. Answer any other **three (3)** questions **Section B**, each carries 20 marks.
3. Use of calculators is permissible
4. **Appendix A: XEROX - THE BENCHMARKING STORY**

MARK ALLOCATION

QUESTION	MARKS
1.	40
2.	20
3.	20
4.	20
5.	20
6.	20
TOTAL	100

Section A: CASE STUDY: XEROX - THE BENCHMARKING STORY

Questions 1

- a) Explain the circumstances that led Kearns to adopt the 'Leadership Through Quality' program. [3]
- b) In the backdrop of Kearns' initiatives to retain Xerox's global competitiveness, comment on the rationale behind the decision to implement benchmarking practices at the company. [3]
- c) Define benchmarking and discuss the various types of benchmarking. [3]
- d) Explain the steps involved in the implementation of a typical benchmarking process. [3]
- e) Describe Xerox's benchmarking model. [3]
- f) How did Xerox go about implementing benchmarking practices in the company? [3]
- g) What benefits did Xerox derive from the implementation of benchmarking practices? [2]
- h) Why do you think benchmarking initiatives sometimes fail to give companies the expected benefits? [6]
- i) Explain how you would go about ensuring the success of the benchmarking initiatives undertaken by the company. [6]
- j) Discuss briefly how benchmarking fits in the competitive performance objectives. [8]

Section B

Question 2

- a) Explain what could be the causes of some manufacturing companies, delisting from the Zimbabwe stock exchange. [10]
- b) Discuss using operations strategy, recommendations on how you would improve one study company of your choice on the Zimbabwe stock exchange. [10]

Question 3

- a) Discuss briefly the Competitive Performance Objectives (CPOs), productivity in relation to Balance Scorecard. [10]
- b) Discuss how performance measurement tools used in your organization influence their position in the market. [10]

Question 4

- a) Flexibility has an influence on other Competitive Performance objectives. Explain this in terms of importance, significance and dimensions. [10]
- b) How can management improve their ability to respond to change? [10]

Question 5

- a) Briefly describe the operations strategy that Swift is applying to be in the position they are currently in now in year 2025? [10]
- b) Discuss TQM, ISO 9000 and Six-Sigma in relation to manufacturing strategy in the context of your company or case-study company. [10]

Question 6

- a) Discuss how Agile Manufacturing contributes as a strategy to the competitiveness of a manufacturing company in the market. [10]
- b) Discuss how Lean Manufacturing contributes as a strategy to the competitiveness of a manufacturing company in the market. [10]

END OF EXAMINATION

Appendix A: XEROX - THE BENCHMARKING STORY

The case examines the benchmarking initiatives taken by Xerox, one of the world's leading copier companies, as a part of its 'Leadership through Quality' program during the early 1980s. The case discusses in detail the benchmarking concept and its implementation in various processes at Xerox. It also explores the positive impact of benchmarking practices on Xerox.

"Benchmarking at Xerox is still very much a matter of competitive advantage. It is used to keep Xerox's edge razor-sharp, to discover where something is being done with less time, lower cost, fewer resources and better technology."

- *Warren Jeffries, a Customer Services Benchmarking Manager, Xerox, in 1999.*

BACKGROUND NOTE

The history of Xerox goes back to 1938, when Chester Carlson, a patent attorney and part-time inventor, made the first xerographic image in the US. Carlson struggled for over five years to sell the invention, as many companies did not believe there was a market for it. Finally, in 1944, the Battelle Memorial Institute in Columbus, Ohio, contracted with Carlson to refine his new process, which Carlson called 'electrophotography.' Three years later, The Haloid Company, maker of photographic paper, approached Battelle and obtained a license to develop and market a copying machine based on Carlson's technology.

Haloid later obtained all rights to Carlson's invention and registered the 'Xerox' trademark in 1948. Buoyed by the success of Xerox copiers, Haloid changed its name to Haloid Xerox Inc in 1958, and to The Xerox Corporation in 1961. Xerox was listed on the New York Stock Exchange in 1961 and on the Chicago Stock Exchange in 1990. It is also traded on the Boston, Cincinnati, Pacific Coast, Philadelphia, London and Switzerland exchanges. The strong demand for Xerox's products led the company from strength to strength and revenues soared from \$37 million in 1960 to \$268 million in 1965.

Throughout the 1960s, Xerox grew by acquiring many companies, including University Microfilms, Micro-Systems, Electro-Optical Systems, Basic Systems and Ginn and Company. In 1962, Fuji Xerox Co. Ltd. was launched as a joint venture of Xerox and Fuji Photo Film.

Xerox acquired a majority stake (51.2%) in Rank Xerox in 1969. During the late 1960s and the early 1970s, Xerox diversified into the information technology business by acquiring Scientific Data Systems (makers of time-sharing and scientific computers), Daconics (which made shared logic and word processing systems using minicomputers), and Vesetec (producers of electrostatic printers and plotters).

In 1969, it set up a corporate R&D facility, the Palo Alto Research Center (PARC), to develop technology in-house. In the 1970s, Xerox focused on introducing new and more efficient models to retain its share of the reprographic market and cope with competition from the US

and Japanese companies. While the company's revenues increased from \$ 698 million in 1966 to \$ 4.4 billion in 1976, profits increased five-fold from \$ 83 million in 1966 to \$ 407 million in 1977. As Xerox grew rapidly, a variety of controls and procedures were instituted and the number of management layers was increased during the 1970s. This, however, slowed down decision-making and resulted in major delays in product development.

In the early 1980s, Xerox found itself increasingly vulnerable to intense competition from both the US and Japanese competitors. According to analysts, Xerox's management failed to give the company strategic direction. It ignored new entrants (Ricoh, Canon, and Sevin) who were consolidating their positions in the lower-end market and in niche segments. The company's operating cost (and therefore, the prices of its products) was high and its products were of relatively inferior quality in comparison to its competitors. Xerox also suffered from its highly centralized decision-making processes. As a result of this, return on assets fell to less than 8% and market share in copiers came down sharply from 86% in 1974 to just 17% in 1984. Between 1980 and 1984, Xerox's profits decreased from \$ 1.15 billion to \$ 290 million (Refer Exhibit I).

In 1982, David T. Kearns (Kearns) took over as the CEO. He discovered that the average manufacturing cost of copiers in Japanese companies was 40-50% of that of Xerox. As a result, Japanese companies were able to undercut Xerox's prices effortlessly. Kearns quickly began emphasizing reduction of manufacturing costs and gave new thrust to quality control by launching a program that was popularly referred to as 'Leadership Through Quality.' As part of this quality program, Xerox implemented the benchmarking program. These initiatives played a major role in pulling Xerox out of trouble in the years to come. The company even went on to become one of the best examples of the successful implementation of benchmarking.

ABOUT BENCHMARKING

Benchmarking can be defined as a process for improving performance by constantly identifying, understanding and adapting best practices and processes followed inside and outside the company and implementing the results. The main emphasis of benchmarking is on improving a given business operation or a process by exploiting 'best practices,' not on 'best performance.'

Simply put, benchmarking means comparing one's organization or a part of it with that of the other companies. Companies can adopt one or more of the following types of benchmarking -

- **Strategic Benchmarking:** Aimed at improving a company's overall performance by studying the long-term strategies and approaches that helped the 'best practice' companies to succeed. It involves examining the core competencies, product/service development and innovation strategies of such companies.
- **Competitive Benchmarking or Performance Benchmarking:** Used by companies to compare their positions with respect to the performance characteristics of their key

products and services. Competitive benchmarking involves companies from the same sector.

- **Process Benchmarking:** Used by companies to improve specific key processes and operations with the help of best practice organizations involved in performing similar work or offering similar services.
- **Functional Benchmarking or Generic Benchmarking:** Used by companies to improve their processes or activities by benchmarking with other companies from different business sectors or areas of activity but involved in similar functions or work processes.
- **Internal Benchmarking:** This involves benchmarking against its own units or branches for instance, business units of the company situated at different locations. This allows easy access to information, even sensitive data, and also takes less time and resources than other types of benchmarking.
- **External Benchmarking:** Used by companies to seek the help of organizations that succeeded on account of their practices. This kind of benchmarking provides an opportunity to learn from high-end performers.
- **International Benchmarking:** Involves benchmarking against companies outside the country, as there are very few suitable benchmarking partners within the country.

A typical benchmarking exercise is a four-stage process involving planning, data collection, data analysis and reporting and adaptation. The planning stage includes identifying, establishing and documenting specific study focus areas, key events and definitions. The best-practice companies are identified and appropriate data collection tools are selected and updated for use. The purpose of the data collection is to accumulate qualitative data and learn from the best practices of different organizations. Information is mainly collected through questionnaires administered to all best practice companies. This stage also includes site visits to organizations that follow best practices.

The data analysis and reporting stage involves the critical evaluation of practices followed at high performing companies, and the identification of practices that help and deter superior performance. A detailed final report is presented, which contains key findings. When these findings are discussed, best practice companies also take part through systematic networking activities and presentations. The adaptation stage includes developing an initial action plan to adapt and implement the practices followed by high performance companies.

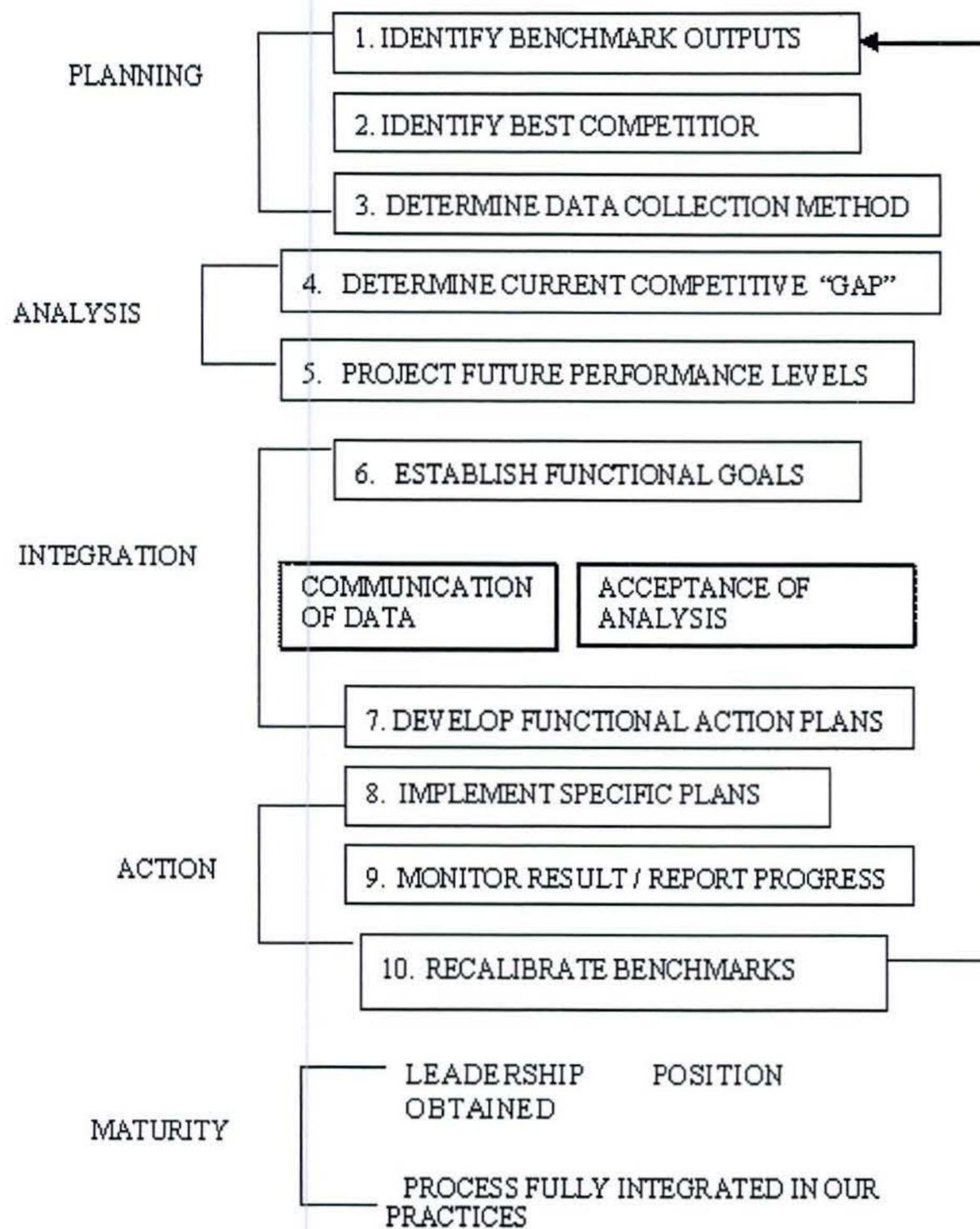
Of the total time spent on the above stages, planning takes up 30%, data collection 50%, and data analysis and reporting take up the remaining 20%. The time taken for the last stage, adaptation, depends on the scope of the exercise being undertaken by the company. The above stages comprise a series of steps that collectively complete the benchmarking process. Organizations usually customize this model or develop their own benchmarking model to meet their specific organizational needs.

By the early 1990s, many Fortune 500 companies and other major companies were implementing benchmarking to reap the benefits it promised. Benchmarking also became a key criterion for winning the Malcolm Balridge National Quality Award¹ⁱ. According to research conducted by the International Benchmarking Clearinghouse, a division of American Productivity & Quality Center (APQC)²ⁱⁱ, in 1995, over 30 companies reported a \$76 million payback approximately in the very first year of their benchmarking implementation. Some of the companies that derived the benefits of benchmarking included Ford, AT&T, IBM, GE, Motorola and Citicorp. However, the pioneering efforts of Xerox in the field of benchmarking have undoubtedly been the most talked about and successful of such initiatives.

BENCHMARKING AT XEROX

The 'Leadership through Quality' program introduced by Kearns revitalized the company. The program encouraged Xerox to find ways to reduce their manufacturing costs. Benchmarking against Japanese competitors, Xerox found out that it took twice as long as its Japanese competitors to bring a product to market, five times the number of engineers, four times the number of design changes, and three times the design costs.

The company also found that the Japanese could produce, ship, and sell units for about the same amount that it cost Xerox just to manufacture them. In addition, Xerox's products had over 30,000 defective parts per million - about 30 times more than its competitors. Benchmarking also revealed that Xerox would need an 18% annual productivity growth rate for five consecutive years to catch up with the Japanese. After an initial period of denial, Xerox managers accepted the reality.



Following this, Xerox defined benchmarking as 'the process of measuring its products, Services, and practices against its toughest competitors, identifying the gaps and establishing goals. Our goal is always to achieve superiority in quality, product reliability and cost.' Gradually, Xerox developed its own benchmarking model. This model involved tens steps categorized under five stages - planning, analysis, integration, action and maturity (Refer Figure I for the Xerox benchmarking model).

The five-stage process involved the following activities:

- **Planning:** Determine the subject to be benchmarked, identify the relevant best practice organizations and select/develop the most appropriate data collection technique.

- **Analysis:** Assess the strengths of competitors (best practice companies) and compare Xerox's performance with that of its competitors. This stage determines the current competitive gap and the projected competitive gap.
- **Integration:** Establish necessary goals, on the basis of the data collected, to attain best performance; integrate these goals into the company's formal planning processes. This stage determines the new goals or targets of the company and the way in which these will be communicated across the organization.
- **Action:** Implement action plans established and assess them periodically to determine whether the company is achieving its objectives. Deviations from the plan are also tackled at this stage.
- **Maturity:** Determine whether the company has attained a superior performance level. This stage also helps the company determine whether benchmarking process has become an integral part of the organization's formal management process.

Xerox collected data on key processes of best practice companies. These critical processes were then analyzed to identify and define improvement opportunities. For instance, Xerox identified ten key factors that were related to marketing. These were customer marketing, customer engagement, order fulfillment, product maintenance, billing and collection, financial management, asset management, business management, human resource management and information technology. These ten key factors were further divided into 67 sub-processes. Each of these sub-processes then became a target for improvement. For the purpose of acquiring data from the related benchmarking companies, Xerox subscribed to the management and technical databases, referred to magazines and trade journals, and also consulted professional associations and consulting firms.

Having worked out the model it wanted to use, Xerox began by implementing competitive benchmarking. However, the company found this type of benchmarking to be inadequate as the very best practices, in some processes or operations were not being practiced by copier companies. The company then adopted functional benchmarking, which involved a study of the best practices followed by a variety of companies regardless of the industry they belonged to. Xerox initiated functional benchmarking with the study of the warehousing and inventory management system of L.L. Bean (Bean), a mail-order supplier of sporting goods and outdoor clothing.

Bean had developed a computer program that made order filling very efficient. The program arranged orders in a specific sequence that allowed stock pickers to travel the shortest possible distance in collecting goods at the warehouse. This considerably reduced the inconvenience of filling an individual order that involved gathering relatively less number of goods from the warehouse. The increased speed and accuracy of order filling achieved by Bean attracted Xerox. The company was convinced it could achieve similar benefits by developing and implementing such a program.

Similarly, Xerox zeroed in on various other best practice companies to benchmark its other processes. These included American Express (for billing and collection), Cummins Engines and Ford (for factory floor layout), Florida Power and Light (for quality improvement), Honda (for supplier development), Toyota (for quality management), Hewlett-Packard (for research and product development), Saturn (a division of General Motors) and Fuji Xerox (for manufacturing operations) and DuPont (for manufacturing safety).

BENCHMARKING IMPLEMENTATION AT XEROX

Benchmarking was implemented at Xerox in the following manner:

SUPPLIER MANAGEMENT SYSTEM

Xerox found that all the Japanese copier companies put together had only 1,000 suppliers, while Xerox alone had 5,000. To keep the number of suppliers low, Japanese companies standardized many parts. Often, half the components of similar machines were identical. To ensure part standardization, Japanese companies worked closely with their suppliers. They frequently trained vendor's employees in quality control, manufacturing automation and other key areas. Cooperation between the company and the vendor extended to just-in-time production scheduling, i.e. delivery in small quantities, as per the customer's production schedule.

In line with the best practices, Xerox reduced the number of vendors for the copier business from 5,000 to just 400. Xerox also created a vendor certification process in which suppliers were either offered training or explicitly told where they needed to improve in order to continue as a Xerox vendor. Vendors were consulted for ideas on better designs and improved customer service also.

INVENTORY MANAGEMENT

Xerox's efforts to improve inventory management practices drew inspiration from the innovative spare parts management practices of its European operations. Traditionally, technical representatives decided the level of spare parts inventory to be carried; little information was available on the actual usage pattern of the spare parts. Xerox's European operations developed a sophisticated information system to get around this problem. Actual usage, rather than mere withdrawal from the stocking point, was used to determine inventory levels. In the late 1980s, Xerox replicated the system in the US and saved tens of millions of dollars in the process.

The stocking policy followed by Xerox branch managers was to hold fully finished, fully configured products near to the customer. Because of this policy, they carried vast amounts of inventory, some of which was not even sold during a given period. The company changed the above setup by asking branch managers to match the stocking policy to the customer's

installation orders, which considerably reduced the inventory holding time. As a result, working capital cycle time was cut by 70% leading to savings of about \$200 million.

Another innovative strategy, followed by Xerox to minimize inventory-carrying costs, was to delay the assembly of the product into the final configuration as much as possible. According to a Xerox executive, Graham Scout, "Some finished goods are language sensitive, software sensitive, voltage sensitive and cycle sensitive for different worldwide markets. We will build it to a level where it's generic and then configure it and finish it when we have an order for it. We may have to hold a little more work-in-progress inventory back in the plant but we can certainly avoid holding lots of finished products out in the field."

Xerox thus built different machines for US and Canadian markets. Inventories were held in Canada for Canadian machines and in the US for US machines. After assembling of the machines, the only real difference between the two types of machines was in the type of labeling required. Xerox redesigned the manufacturing process and made all the parts the same. Customization was done only at the time of shipment. Such process modifications helped it minimize the number of unique stock locations.

MANUFACTURING SYSTEM

The process of benchmarking helped Xerox revamp its manufacturing techniques. Each 'family unit' (a manager and his direct subordinates) was encouraged to identify its internal as well as external customers and to meet their needs. For instance, the group that built paper trays identified its external customer as the end user who would load the paper. Its internal customers were the assembly-line workers, who would combine the paper tray with hundreds of other components to assemble the copiers. This process significantly improved the operational efficiency of the work groups.

Marketing

Xerox introduced a Customer Satisfaction Measurement System that integrated customer research and benchmarking activities. The company sent out over 55,000 questionnaires monthly to its customers to measure customer satisfaction and record competitors' performance. It then benchmarked against those competitors that had scored high marks on specific measures of customer satisfaction. Xerox also used the vast amount of information gathered by the system to develop business plans for improving quality and meeting customer needs.

Quality

As a part of its "Leadership Through Quality" program, Xerox reformulated its quality policy. The new policy supplemented the company's benchmarking efforts. Xerox's new quality policy stated, "Xerox is a quality company. Quality is the basic principle for Xerox. Quality means providing our external and internal customers with the innovative products and services that duly satisfy their requirements. Quality improvement is the job of every Xerox employee"

(Refer Exhibit III for a comparison between new and old quality policies). Following this, the company embarked on a complete organizational restructuring exercise that focused on research and development, employee involvement and customer orientation.

Xerox also formed a transition team consisting of 24 senior managers and consultants from McKinsey & Co to help make Total Quality Management (TQM) a part of its organizational culture. The transition team took action at two levels. Firstly, it conveyed the message clearly to the world that Xerox was pursuing more widespread use of TQM, and secondly, it identified and addressed the obstacles that were likely to slow down the spread of TQM. These ranged from the corporation's function-dominated matrix structure to the need for new training programs. Consequently, the transition team also replaced the existing complex matrix by three Strategic Business Units (SBUs) - Enterprise Service Business, Office Copiers and Home Copiers. Each of these SBUs was given considerable autonomy in engineering, marketing and pricing.

By the late 1980s, benchmarking had become a day-to-day activity in every division of the company. According to company sources, Xerox's guiding principle was, 'anything anyone can do better, we should aim to do at least equally well.' In 1991, Xerox developed Business Excellence Certification (BEC) to integrate benchmarking with the company's overall strategies. This was also done to ensure continuous self-appraisal of the overall quality performance of the company. The key performance factors measured by BEC were management leadership, human resource management, customer focus, quality support and tools, process management and business priorities/results.

These factors, which were further divided into forty sub-factors, had their specific measuring targets. Each unit's self-appraisal was validated by representatives from sister divisions. BEC helped Xerox determine the causes for the success or failure of a specific quality process and identify the key success factors or obstacles for achieving a specific quality goal. It also helped the company establish key functions for removing obstacles that prevented it from reaching the set quality goals.

By the mid-1990s, benchmarking was extended to over 240 key areas of product, service and business performance at Xerox. The initiatives were also adopted, at varying levels, at Xerox units across the world. The benchmarking process encouraged Xerox's employees to learn from every situation. This new philosophy was dubbed 'steal shamelessly,' though the company used only those ideas that the best practice companies willingly gave away. The salient rule at Xerox for benchmarking was to 'ask no question of another firm that you would be unwilling to answer about your own.' This change in attitude was just the beginning of the payoffs of the benchmarking moves.

REAPING THE BENEFITS

The first major payoff of Xerox's focus on benchmarking and customer satisfaction was the increase in the number of satisfied customers. Highly satisfied customers for its copier/duplicator and printing systems increased by 38% and 39% respectively. Customer

complaints to the president's office declined by more than 60%. Customer satisfaction with Xerox's sales processes improved by 40%, service processes by 18% and administrative processes by 21%. The financial performance of the company also improved considerably through the mid and late 1980s. Overall customer satisfaction was rated at more than 90% in 1991. Some of the other benefits Xerox derived were:

- Number of defects reduced by 78 per 100 machines.
- Service response time reduced by 27%.
- Inspection of incoming components reduced to below 5%.
- Defects in incoming parts reduced to 150ppm.
- Inventory costs reduced by two-thirds.
- Marketing productivity increased by one-third.
- Distribution productivity increased by 8-10 %.
- Increased product reliability on account of 40% reduction in unscheduled maintenance.
- Notable decrease in labour costs.
- Errors in billing reduced from 8.3 % to 3.5% percent.
- Became the leader in the high-volume copier-duplicator market segment.
- Country units improved sales from 152% to 328%.

Xerox went on to become the only company worldwide to win all the three prestigious quality awards: the Deming Award (Japan) in 1980, the Malcolm Baldrige National Quality Award in 1989, and the European Quality Award in 1992. Xerox Business Services, the company's document outsourcing division, also won the Baldrige Award in the service category in 1997. In addition, over the years, Xerox won quality awards in Argentina, Australia, Belgium, Brazil, Canada, China, Colombia, France, Germany, Hong Kong, India, Ireland, Mexico, the Netherlands, Norway, Portugal, the UK, and Uruguay. Analysts attributed this success to the 'Leadership Through Quality' initiative, and, more significantly, to the adoption of benchmarking practices.

The success of benchmarking at Xerox motivated many companies to adopt benchmarking. By the mid-1990, hundreds of companies implemented benchmarking practices at their divisions across the world.

These included leading companies like Ford, AT&T, IBM, GE, Motorola and Citicorp. During the 1990s, Xerox, along with companies such as Ford, AT&T, Motorola and IBM, created the International Benchmarking Clearinghouse (IBC) to promote benchmarking and guide companies across the world in benchmarking efforts.

The institute offers information on various companies and best practices through its electronic bulletin board. Soon after its establishment, more than 100 companies joined IBC to gain access to extensive database. By 2001, benchmarking had become a common phenomenon in many companies across the world. Analysts remarked that continuous benchmarking helped companies deliver best quality products and services and survive competition in all businesses (Refer Exhibit for successful benchmarking guidelines).

EXHIBIT

GUIDELINES FOR SUCCESSFUL BENCHMARKING

Why do many companies fail to successfully implement benchmarking? Some major reasons are lack of motivation and inability to identify and adopt outstanding practices. Barriers related to logistics, organization structure and culture that hinder the effective implementation of benchmarking include lack of management and team commitment, limited or inadequate research, wrong choice of benchmarking partners, focus on only specific sectors, and lack of proper implementation and follow-up.

Successful benchmarking requires-

- Thorough understanding of one's own processes.
- Emphasis on industry best practices.
- Company or plant visits (these should be conducted only after research has confirmed that the companies selected are indeed the best among available sources).
- Selection of appropriate benchmarking partners and techniques.
- The benchmarking partner's willingness to share information.
- Maintaining confidentiality of critical information.
- Involvement of management and employees in the analysis of best practices.
- Emphasis on practices and processes, not on end results.
- Benchmarking should be a continuous process as the competition is always changing.
- Commitment towards adaptation and implementation of best practices.
- Selection and empowerment of benchmarking teams.
- Willingness to change as per the findings of the benchmarking study.

- The adaptability of the practices should be tested and the implementation results should be verified.
- Strict adherence to the benchmarking.

Source: ICMR

ADDITIONAL READINGS & REFERENCES

1. Baurds, Greg, Yorks Lyle, Adams Mel and Ranney Gipsiz, **Beyond Total Quality Management**, McGraw Hill Publications, 1994.
2. Bartol, Kathryn M and David C. Martin, **Management**, McGraw Hill Publications, 1994
3. **Xerox Corp.**, Wall Street Journal, November 7, 1994.
4. Miller, Alex and Gregory G. Dess, **Strategic Management**, McGraw Hill Publications, 1996.
5. **Xerox Corp.**, Wall Street Journal Europe, June 10, 1998.

ⁱ *A highly revered award given for excellence in quality in the US to businesses. It is based on seven parameters - leadership, strategic planning, customer and market focus, information and analysis, human resource focus, process management, and business results.*

ⁱⁱ *APQC is a US-based nonprofit organization supported by nearly 500 companies, government organizations, and educational institutions. It provides the tools, information, expertise, and support needed by companies to discover and implement best practices in areas such as benchmarking and knowledge management.*