Employee Training and Development at Motorola

"Few companies take their commitment to employability of people more seriously than Motorola."
- Sumantra Ghoshal, Christopher A Bartlett & Peter Moran in Sloan Management Review.

"Training and a strong learning ethic are embedded parts of Motorola's culture...The corporation learned some time ago that dollars spent on training programs not only empowered their employees but provided the necessary skills for the company's marketplace dominance."
- James Borton, Columnist, Asia Times.

TOP TRAINING COMPANY IN THE WORLD

For nearly eight decades, the US based Motorola Inc. (Motorola) has been recognized as one of the best providers of training to its employees in the world. Motorola began training its employees' right in 1928, the year of its inception, on the factory floor as purely technical product training. Training, at that time, just meant teaching new recruits how to handle the manufacturing equipment to perform various predetermined tasks assigned to them. But by the 1980s, Motorola had emerged as a model organization in the corporate world for employee education, training and development.

The innovative training programs of Motorola turned training into a continuous learning process. In the 1980s, the training initiatives of the company culminated in the setting up of the Motorola Training and Education Center, an exclusive institute to look after the training and development requirements of Motorola's employees. The institute was later elevated to the status of a university - Motorola University - in 1989. These training experiments became such a resounding success that employee productivity improved year after year and quality-wise Motorola's products became synonymous with perfection. Leading companies all over the world visited Motorola's headquarters to study the high-performance work practices of the company. They discovered that Motorola's success was built on the strong foundations of corporate-wide learning practices and that Motorola University was the cornerstone of corporate learning.

2 At the time of writing the above mentioned article (1999), Sumantra Ghoshal was a strategic leadership professor at the London Business School; Christopher A. Bartlett was a professor of business administration at the Harvard Business School; and Peter Moran was an assistant professor of strategic and international management at the London Business School.
In recognition of its excellent training and development practices, the American Society for Training and Development (ASTD) named Motorola the 'Top Training Company' and conferred on Robert Galvin (Galvin), the former CEO of the company, its 'Champion of Workplace Learning and Performance Award' for the year 1999. Speaking on Motorola's training initiatives and Galvin's contribution, Tina Sung, President and CEO of ASTD, said, "Galvin is a true champion of employees being an integral part of the organizational success. He set the corporate standard for investing in education and has demonstrated that training and development pay off in productivity, performance and quality."\(^5\)

**BACKGROUND NOTE**

Motorola was founded in 1928 when the Galvin brothers, Paul and Joseph, set up the Galvin Manufacturing Corporation, in Chicago, Illinois, USA. Its first product was a "battery eliminator," which allowed the consumers to operate radios directly using household current instead of batteries. In the 1930s, the company successfully commercialized car radios under the brand name "Motorola," a word which suggested sound in motion by combining "motor" with "Victrola."\(^6\) In 1936, Motorola entered the new field of radio communications with the product Police Cruiser, an AM automobile radio that was pre-set to a single frequency to receive police broadcasts.

In 1940, Daniel Noble (Noble), a pioneer in FM radio communications and semiconductor technology, joined Motorola as director of research. Soon, the company established a communication division followed by a subsidiary sales corporation, Motorola Communications and Electronics in 1941. The Motorola trademark was so widely recognized that the company's name was changed from Galvin Manufacturing Corporation to Motorola Inc. in 1947.

Motorola entered the television market in 1947. In 1949, Noble launched a research & development facility in Arizona to explore the potential of the newly invented transistor. In 1956, Motorola became a commercial producer and supplier of semiconductors for sale to other manufacturers. The company began manufacturing integrated circuits and microprocessors in a bid to find customers outside the auto industry. In 1958, Motorola opened an office in Tokyo, to promote customer and supplier relations with Japanese companies.

By 1959, Motorola had emerged as a leader in military, space and commercial communications. It had built its first semiconductor production facility, and was emerging as a growing force in consumer electronics. Motorola expanded into international markets in the 1960s, setting up sales and manufacturing operations around the world. During the period 1967-1978, Motorola expanded its international presence by adding plants in many countries including Australia, France, West Germany, Hong Kong, Israel, Mexico, South Korea, Taiwan and the UK.

In the 1970s, Motorola faced stiff competition from Japan, especially in consumer electronics. The company shifted its focus from consumer electronics. It began to manufacture watch batteries, and the first Motorola microprocessor was introduced in 1974. Early customers were from the automotive, communications, industrial and business machines sectors. In the 1980s, the company moved into communications and devoted huge amounts of time and money to the development of cellular phone

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4 Founded in 1944, ASTD is the world's largest association dedicated to workplace learning and performance professionals.
6 Victrola is a brand of gramophones made by the Victor Talking Machine Company.
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technology. The efforts resulted in the introduction of DynaTAC, the 28-ounce handheld phone, in 1984. It also developed a range of increasingly smaller and more efficient pagers.

The 1990s saw a period of rapid growth for Motorola. Faced with increasing competition, the company formed the Messaging, Information and Media unit in 1991 for the development of a range of technologies for non-voice wireless messaging and multi-media products. The company's handsets became very popular due to the mobile communications boom. However, during the late 1990s, the sales of the company were affected by problems in the Asian economies. Therefore, starting 2000, the company entered into alliances and joint ventures to achieve a global presence.

By 2005, Motorola had emerged as a comprehensive communication services provider offering wireless, broadband and automotive communications technologies and embedded electronic products. The company's business segments were Personal Communications, Global Telecom Solutions, Commercial, Government and Industrial Solutions, Integrated Electronic Systems, Broadband Communications, and Other Products. Cellular products made up nearly 40 per cent of Motorola's sales, and the company became the world's third largest manufacturer of semiconductors. Motorola had operations in over 40 countries, and more than 50 per cent of its sales come from outside the US. For the fiscal ending December 31, 2004, the company posted total revenues of US$ 31,323 mn and net income of US$ 1532 mn.

TRAINING AND DEVELOPMENT INITIATIVES

Motorola had started training its employees way back in the 1920s, and the importance of training continued to grow. Till the early 1980s, Motorola had its own standard employee development activities in which training was the key element. During those days, when people were recruited for manufacturing, the company looked for three essential qualities in the employees - the communication and computational skills of a seventh grader; basic problem solving abilities both in an individual capacity and as a team player; and willingness to accept work hours as the time it took to achieve quality output rather than regular clock hours.

The quality of the output was the primary consideration for Motorola, and employees were expected to make full efforts to achieve quality. Most of the employees learned their job through observing the seniors at work and learning through the trial and error method. The training lessons imparted to them involved techniques to improve their communication skills and sharpen their calculation skills. Employees were hired to perform set tasks and were not required to do much thinking. If they had a problem with one of the machines, a trouble-shooter was called to fix it.

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7 A cellular phone is a hand-held mobile radiotelephone for use in an area divided into small sections (cells), each with its own short-range transmitter/receiver.
8 A pager is an instrument or appliance which is a non-speech, one-way personal calling system and has the capability of receiving, storing and displaying numeric or alpha-numeric messages.
9 Multimedia is the combination of several forms of media in the communication of information. These various forms include audio, video, text, graphics, fax, and telephony.
10 Some of the major mergers and acquisitions included the merger with General Instrument Corporation in 2000 for producing innovative products in the multi-media market; the acquisition of RiverDelta Networks, a provider of carrier-class broadband routing, switching, cable modem termination system and service management solutions in 2001; the acquisition of NetPlane Systems, a developer of networking protocol software for the control plane in 2003; the acquisition of Winphoria Networks, a core infrastructure provider of next generation packet based mobile switching centers for wireless networks in 2003; and a strategic investment in Aligo, a global leader in mobile software solutions in 2004.
However, after World War II, technologies changed and so did manufacturing practices. Competition too became more intense. During the 1970s, Motorola’s human resource (HR) department began to realize that the rules of corporate training and education had to be rewritten in tune with the changing times. Employees performing their defined tasks meticulously was no longer enough for the company. The employees needed to understand their work and the sophisticated equipment they handled in more detail. The senior management’s role now was no longer limited to supervision; they had to learn new skills and techniques and exemplify them to subordinates.

Before modifying Motorola’s employee training practices, the HR department conducted a corporate-wide study in 1978 and tested the skills of employees. The tests revealed the astonishing fact that a majority of the workforce was incapable of doing simple arithmetic calculations like percentages and fractions; some of them could not even understand the product-related instructions on the package but identified the product by colour of its package and dealt with it according to the established procedure.

These discoveries made the HR department think of going beyond improving the working skills of employees to enter new areas of education that had never been touched upon earlier. Instead of only technical skill instructions, training was now made two-pronged – teaching the 10th grade school basics at the fundamental training level, and introducing new concepts of work, quality, community learning and leadership at the development level.

Gone were the days of calling an expert every time a machine developed a minor problem. Even if the services of the expert were unavoidable, the workers were at least expected to describe the failure clearly with all technical details. Apart from maintaining a high quality of work, the employees were also expected to understand their equipment, anticipate and analyze breakdowns in equipment, and begin the troubleshooting process before the expert arrived.

In 1979, Galvin asked the HR department to design a five-year old training plan to upgrade the skills of its employees. However, the plan focusing on new tools, technologies and teamwork did not produce the desired results. New and sophisticated equipment was deployed, but the plant managers did not change their working style.

Galvin also established the Motorola Executive Institute, borrowing faculty from leading universities across the world, to take a course on management subjects to 400 executives in four weeks. The top management was trained in international business issues such as economics, personnel and international relations. The participants learnt a great deal but failed to implement what they learnt, and the ultimate result of the program was disappointing.

Galvin realized that the training programs were not yielding desired results because the top management was learning new things but was unwilling to change its old ways. He believed that the top management would lead the change only if they felt a compelling need to change, and if this need was also felt through all the levels in the company. It also meant that training was required not just for executives but for workers as well. To carry out these training programs, an employee education department named Motorola Training and Education Center (MTEC) was established in 1980. The twin objectives of this programs were: to expand the participative management process11, and to help improve the quality of products tenfold in the coming five years. The programs were intended to educate Motorola’s people as well as to be an agent of change. Initially, MTEC analyzed the existing jobs profiles and

11 Participative management process means the process of involving those who are influenced by decisions, in making decisions.
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tried to anticipate how they might change in the near future so as to train people accordingly. A five-part curriculum was designed with a thrust on product quality (Refer to Exhibit I for highlights of the five-part curriculum).

However, this elaborate program meant that at a typical plant with 2,500 workers, the MTEC was using 50,000 employee hours—a lot of time away from the job for a training program which many skeptics called highly 'esoteric'\(^{12}\). The company initially considered the time worth the investment, but soon the skeptics were proved right. Later evaluations showed that people attended the program, took the burr., went back to their jobs and reassumed their old attitudes.

When the course was designed, the HR department thought that the people at whom it was aimed at would sign up enthusiastically. However, the experiment showed that people resisted formal classroom training. Therefore, MTEC developed self-help material which employees could take home. But this attempt, too, failed as the workers did not consider the homework packages as real training. They took home the study material and never bothered to open it. The employees did not seem to consider training necessary, whether it was imparted in a formal classroom or as a learn-at-home package.

The HR department was now in a fix. It was not a case of people not being able to learn but a situation where they were not willing to learn. So, now the challenge was to motivate the people to overcome their complacency and make them learn. Motorola had always emphasized employee loyalty and in its early days, people were hired for life. After ten years of service, they became entitled to membership of the Service Club, which meant that they would not be terminated except on the grounds of poor performance or dishonesty. The management felt that the time had come when people had to be told that 'poor performance' included unwillingness to change. They made it clear that everybody would be retrained on new technologies. If anybody refused to retrain, they would be dismissed.

Another challenge for the HR department was the conflicting behavioral patterns of different levels of management. The top management always insisted on meeting the deadlines; whereas the workers, who had been taught quality improvement techniques, were eager to implement them, sometimes resulting in late deliveries. Workers wondered why they were not being given time to implement the new quality improvement techniques and the top management wondered why quality was not improving in spite of training. The middle management was caught between the conflict between the top and bottom cadres.

By 1984, the department was disheartened by the discouraging results of the training program. It decided that training was required for the top as well as the bottom management levels, and that these two programs needed to be integrated so that both levels would be aware what training was being imparted to the other level. The HR officials wanted the different management levels to realize that better quality could be achieved within the stipulated time by integrating efforts across various levels. The top management was taught that simply meeting the deadlines was useless unless quality standards were met; and the workers were taught that production was a time-bound process and they could not work for indefinite periods to achieve perfect quality. This way both parties understood that quality and deadline were equally important and that absolute quality was to be achieved within the prescribed time constraints.

In 1985, Motorola established a new cellular manufacturing facility in Arlington Heights, US. The workforce in that plant had improved quality ten-fold in the first five years of training. Since they were about to be given the greater responsibility of

\(^{12}\) Hard to understand, obscure, intelligible only to those with special knowledge.
taking the company's products globally, a quick math test was conducted to assess the need for further training. The result was shocking. Only 40 per cent of the employees knew 10 was what percent of 100. The reason for this was that the immigrant workforce found it difficult to comprehend English. It meant that despite the improvement in quality, basic communication and arithmetic skills\textsuperscript{13} of the workforce needed to be sharpened, and the employees needed remedial elementary education to meet the business needs. However, MTEC was not equipped to provide remedial education. They decided to ask some community colleges and other local institutions to help out, but were surprised to find that the community colleges were not equipped to meet their training requirements. The course content often did not commensurate with the title.

After various experimental training programs, the HR department came to the conclusion that occasional training programs and tie-ups with educational institutions and universities would always leave learning gaps. Therefore, the company decided that only a full-fledged educational institution of its own would be able to cater to the training and development needs of the employees in the light of company's global business strategy. The Motorola University was born in 1989 to serve this purpose.

THE MOTOROLA UNIVERSITY

After conducting various training experiments that spanned a few decades, Motorola came to understand that training involved more than designing and implementing one particular program for a set of employees. To keep improving performance, training should be a continuous learning process involving each and every person in the organization. Normally, training was an ad hoc measure, whereas education gave the recipient a vision. Education was viewed as an investment rather than a cost. Therefore, Motorola decide to elevate MTEC to the status of a university in 1989.

Motorola's objective in having its own university was to provide education relevant to the company, to the job and to the individual. Therefore, Motorola University could not operate on the same lines as regular universities. It designed its own courses and method of imparting training, and maintained absolute autonomy. It was decided at the time of the launch of the university that it would operate with its own board of trustees who were general managers of the company. Their duty was to understand the training requirements of the company, design a course to meet those requirements and impart training to employees to re-define their responsibilities in accordance with the changing times. The responsibility of the university was not just to educate people, but to operate as a change agent. It served as the link between employee education and the company's business strategy, whether the objective was reducing costs in operations, improving product quality or accelerating new product development.

The curriculum was designed keeping in view the requirements of the company. Emphasis was laid on participative management, empowerment, motivation, individual dignity and ethics. Employees were taught various business-related topics ranging from the fundamentals of computer-aided design to robotics, from communication skills to customized manufacturing. Training instructions were offered in three broad categories – engineering, manufacturing, sales and marketing.

\textsuperscript{13} Arithmetic and communication skills are considered very important at Motorola because in most of the factories, the work requires analyses and experiments involving extensive use of algebra. As for English, the engineering group is required to write work order changes, product specifications, and product manuals.
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Each of these three disciplines was further divided into three parts - relational skills, technical skills and business skills. Relational skills included customer satisfaction, effective meetings, effective manufacturing supervision, negotiation and effective presentations. Technical and business skills included basic math, electronics, accounting, computer operation, and statistical process control. The relational skills curriculum was designed and developed by Motorola University whereas those of technical and business skills were developed in cooperation with community colleges and technical schools.

Initially, Motorola University listed the courses in a catalogue and the employees were required to take a certain number of courses. The University had appointed a Chief Learning Officer whose role was to provide employees the required courses in a cost-effective manner. However, this model changed in the 1990s, and apart from the three basic categories of instruction, the University began to offer several other minor courses. Such course material, textbooks and other instructional materials were offered to Motorola employees and to outsiders who made a payment. The minor courses took a short time to complete. For instance, courses like “Managing the Software Development Process” took four days, “Short-Cycle Manufacturing” took just one day (Refer to Exhibit II for the list of some of the courses offered by Motorola University).

Instructions were also tailored to meet the unique needs of the company. Most of the instructors in the university were not regular professors. Instead, the company relied on outside consultants including engineers, scientists and former employees of the company. Their responsibility was to guide the employees in their thinking processes as well as helping them remember what they had learnt. The instructors were also specially trained and certified so that each instructor would not follow his/her own method of teaching but would stick to Motorola’s method of participative instruction and learning. Commenting on this, William Wiggenhorn, Corporate Vice-president for training and education and the President of Motorola University in the early 1990s said, “We don’t want them to teach their version of, say Effective Meetings, we want them to teach ours. Not everyone can deliver on those terms. For example, few academics can do it our way. They’re used to interpreting material independently, so after the first page, it tends to take on their own particular slant. It may make a fascinating course, but we can’t have 3,000 people learning 35 different versions of Effective Meetings.”

Learning at Motorola University did not mean employees reading countless manuals; nor was it a monotonous and unilateral technical presentation by the instructor without entertaining any discussion among the participants. The instructions delivery was highly interactive, and the participants learnt by inventing and developing their own products as well. While all other corporates offered some form of training to employees, Motorola University’s role was to synergize employee education with business targets. For instance, the company would set a goal to reduce product development cycle time; then it would ask the university to develop a course on how to do it. Retired employees teaching at the university would know how to teach such a subject with a practical orientation. Employees would attend the course and develop their own methods and implement them. This way, the training would be completed by achieving tangible results for the company.

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Another unique feature of training at Motorola was that while most of the corporates imparted training to selected employees such as the top management or technicians, Motorola extended training to all its employees spread across the globe. Employee training had become so deeply ingrained at Motorola that every employee – from top management executive to factory worker – had to identify courses he/she wanted to study each year. Each employee, including the CEO, had to undertake a minimum of 40 hours of formal coursework each year (Refer to Exhibit III for the executive education profile of Motorola in the 1990s).

If supervisors spotted performance deficiencies for a particular employee at annual performance reviews, a special remedial plan was set up for him/her immediately. The effectiveness of all the training programs was measured by using traditional Kirkpatrick Level 1 and Level 3 measures (Refer to Exhibit IV for a brief note on Kirkpatrick evaluation levels). However, the most important test was ‘whether the problem was solved or not.’ After the completion of remedial training, the supervisor evaluated the performance of the employee to determine whether the earlier deficiencies had been dealt with. In some cases, if the deficiencies persisted even after the remedial training, the employee would be placed in a different job that matched his/her skills. Terminating the services was not resorted to except in extreme cases since employee loyalty was the touchstone of Motorola’s HR practices.

During the mid-1990s, Motorola introduced the ‘Individual Dignity Entitlement’ program which required all supervisors to discuss, on a quarterly basis, with their team members about their training requirements. The discussion required the employees to answer six questions. Then some follow-up action was designed based on the answers. The same questions were asked 90 days after the implementation of the training program for evaluating the progress (Refer to Exhibit V for more information on Motorola’s Individual Dignity Entitlement program).

Not many companies invested as heavily in employee training as Motorola did. During the initial days of Motorola University (when it was called MTEC) nearly 1.5 per cent of payroll was spent on training. The amount increased to 2.4 per cent very soon and by 1999, the company laid out nearly five per cent of its payroll for training, far above the one per cent average invested by the American industry. According to Galvin, in the mid-to-late 1980s, training came to have the greatest single impact on the quality and competitive performance of Motorola.

Each training program helped employees achieve a certain level of expertise. People who earlier viewed the training programs with skepticism, too, changed their perception. The HR experts around the world were of the opinion that training was fast becoming the strongest variable contributing to higher returns for the company. Motorola’s performance proved that continuous learning may be one of the smartest investments, employers should ever make.

In a decade since 1987, Motorola reduced costs by US$ 10 bn by training its workforce to simplify processes and reduce waste. For the five-year period ending 1998, productivity measured by sales per employee increased 139 per cent. Studies showed that in the plants where senior managers and workers were trained in quality tools and process skills respectively, the company was getting a return of nearly US$ 30 in three years for every dollar spent on training, including the cost of wages paid while people took time off for the training sessions.

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Payroll is the total amount earned by all employees for a pay period.
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Though initially the university concentrated solely on training Motorola's employees, soon it started to utilize the in-house skills for profit-making enterprises like the sale of course material to outsiders, offering consulting services, translation services, conducting seminars to teach other companies how to start their own corporate universities, and evaluation services where a team of experts measured how effective a company's training and education program was.

In the era of fast changing technology in the late 1990s and early 2000s, Motorola was compelled to train its employees in quick time so that they could produce new, better quality products faster. Meeting the challenge of producing technologically advanced products on a continuous basis required employees to be more knowledgeable and efficient. However, this could no longer be achieved solely with formal classroom training programs. Therefore, since the late 1990s, Motorola University placed greater emphasis on e-learning where education was imparted to the employees across the globe through the Internet and other digital media.

FOCUS ON E-LEARNING

Motorola University created a new internal institute named College of Learning Technologies (CLT) to develop educational delivery systems through satellite, Internet and virtual classrooms. This department was responsible for providing innovative learning via virtual classrooms, online experiences, use of CD-ROMS and through multimedia such as video and satellite conferences.

The university placed a large selection of courses and training materials on its intranet, available around the world at any time to its employees. These included interactive courses that could be downloaded directly to an employee's laptop computer, lectures broadcast by experts and an online library of reference materials.

By 1998, training was available on 23 servers across the globe.

E-Learning came to play such a significant role in the training process that by the end of 2001, Motorola employees received nearly 35 per cent of the educational solutions exclusively via web-based learning process, while the remaining 65 per cent percent was through instructor-led classroom training and mixed solutions that combined the best of both modes. Commenting on the role of e-learning in future, Fred Harburg, Chief Learning Officer and President, Motorola University, said, “In the future, the percentage may not dramatically increase. What will increase is a percentage of all the courses will go to e-learning. You ought to leave to the classroom what can best be done when you collect people together and leave to the computer the passing of pure information that can be done most efficiently that way.”

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16 The Virtual Classroom is a chat facility within Blackboard, which allows staff and students to conduct synchronous communication online.
17 CD-ROM stands for Compact Disc Read-Only Memory. A small plastic disk, similar to audio compact disks, used for storing information in digital format. The information is read from the disk by a small laser beam and displayed on a computer screen.
18 Intranet is a private network inside a company or organization, which uses similar software as used for the Internet, but is for internal use only, and is not accessible to the public. Companies use Intranets to manage projects, provide employee information, distribute data and information and so on.
After the introduction of e-learning, employees were no longer required to undergo the compulsory 40 hour training every year. Commenting on dispensing with the traditional practice, Jill Brosig, Director of Learning and Development of Motorola University, said, “That rule was very appropriate at the time because it showed we invested in our people. But now, with the advent of new e-learning technologies, including mobile learning, training is based on ‘relevance,’ not hours. For us it’s not important that you finish a class. What’s important is did you get the learning you needed?” To ensure that the necessary learning was taking place, employees were required to sign a ‘personal commitment’ each year that was reviewed by their managers on a quarterly basis. The commitment included a ‘strategically driven’ educational plan that was directly tied to an employee’s performance review.

E-Learning was shaped as a self-directed learning process to enable employees fulfill their specific and unique learning needs. The benefit of this method was that rather than having a group of 20 employees sit through the same three hours of training session to get to know the 10 minutes of learning that applied to each one at an individual level, the learners could spend more time specifically on what they needed to learn. As a result of this, the training session met the specific needs of each employee besides saving company time. Instead of completely staying away from the course, now the employees had the option of excluding the parts of the course they did not require (Refer to Exhibit VI for the highlights of Motorola’s self-directed learning program).

Motorola’s e-learning training program was made accessible to more than 150,000 employees across the world. The computer network enabled the employees to access as many programs as they considered necessary. Later, the internal review showed that because of e-learning, the cycle time for learning had fallen by a third, actual training times were reduced by 50 per cent and the distribution of training materials was done virtually in real time. With over 100 offices in 24 countries in 2005, Motorola University delivered over 100,000 days per day of training to employees, suppliers, and customers. Through personal digital assistants, Motorola employees could contact their personal coach, read tips of the day, learn about collaborative team events and read news clippings all customized to the employees’ needs.

Commenting on the learning process at Motorola University, Richard Durr, Director at Motorola University in Florida, US said, “A company’s mission is to make money. A University’s mission is to make the world a better place. Motorola University’s mission is to make the world a better place to make money.”

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Employee Training and Development at Motorola

Questions for Discussion:

1. Motorola has been adjudged as one of the top training companies in the world. Comment on the employee training and development practices at Motorola. Why do you think the company received an international recognition for its training and development practices?

2. Motorola University was established in 1989 to fulfill training and development needs of employees at Motorola. Study the training programs offered by Motorola University and how it benefited the target audience.

3. Critically comment on the e-learning initiatives of Motorola. What are the benefits and drawbacks of e-learning in employee training and development? Explain.

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Human Resource Management

Exhibit I

Highlights of the Five-Part Curriculum

The five-part curriculum is designed to help improve the product quality by teaching the employees various aspects of the work processes at a manufacturing unit.

Quality Control: This is a management function in which control of the quality of (a) raw materials, assemblies, produced material, and components, (b) services related to production, and (c) management, production, and inspection processes, is exercised in order to prevent undetected production of defective material or the rendering of faulty services. It involves the following steps: (1) evaluate actual quality performance, (2) compare actual performance to quality goals, (3) take action on the difference. Thus, quality control is the process of measuring quality performance, comparing it with the standard, and acting on the difference.

Industrial Problem Solving: This involves techniques and processes which are most effective in troubleshooting practical process problems at a manufacturing unit. Employees are taught different problem-solving techniques by following basic steps like define the problem, collect information regarding the issue in question, determine the possible options to solve the problem and decide the most optimum solution by keeping a backup plan in case something goes wrong with the earlier plan.

Presenting Conceptual Material: This course is particularly designed to help an hourly worker to present a technical solution to an engineer. During the 1970s when training program was being revamped, the workers were expected to present the technical details of the machinery breakdown and other problems relating to the equipment to the troubleshooting engineers. This required the articulating skills of the workers to be very sharp. Earlier workers restricted themselves to mechanical tasks and were not able to communicate the problem easily and clearly. This course is designed specially to help them present the technical details of the machinery in a clear and professional manner to experts like engineers.

Effective Meetings: This course is intended to promote the participative management process, the key feature of employee training at Motorola. This course aims to promote interaction between the participants, right from factory workers to the CEO, in all meetings so that each participant can understand and appreciate the thought processes of the other. Senior management is taught on how to be patient and receptive to the opinions of the workers and to value their suggestions; and the workers are taught how to present their case in an effective way to make their voice heard by the top. This course aims to make a meeting a discussion forum for exchange of ideas from various levels of the organization.

Goal Setting: This course aims to teach each and every employee the importance of goal setting, both at the corporate level and the individual level. The employees are expected to reach certain common goals as a team and each employee is to reach either product or personality related goal in his individual capacity. This course teaches employees how to choose a goal/objective, how to define it in realistic terms, describe in writing the course of action to be followed for realizing such goals and how to measure the progress towards achieving the goal.

Compiled from various sources.
## Exhibit II
### List of Courses Offered by Motorola University
#### Primary Programs

<table>
<thead>
<tr>
<th>Full course title</th>
<th>Type of course</th>
<th>Durat.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vice Presidents Institute</strong></td>
<td>Leadership Development</td>
<td>4 Days</td>
<td>For new vice presidents. Faculty includes Motorola Chairman/CEO, COO, two former Chairmen, other senior officers, as well as outside experts. Held in Schaumburg only.</td>
</tr>
<tr>
<td><strong>Asian Impact for Motorola</strong></td>
<td>Leadership Development, Business Acumen Development</td>
<td>15 days</td>
<td>Designed for potential general managers in the Asia/Pacific region. Held in Asia only.</td>
</tr>
<tr>
<td><strong>Semiconductor Products Sector GOLD Program</strong></td>
<td>Leadership Development, Business Issue Problem Solving</td>
<td>13 days</td>
<td>Designed for high potentials in the semiconductor business. Sessions held in North America, South America, Europe, and Asia.</td>
</tr>
<tr>
<td><strong>Communications Enterprise GOLD Program</strong></td>
<td>Leadership Development, Business Issue Problem Solving</td>
<td>11 days</td>
<td>Introduced in 1999. Currently held in Schaumburg only.</td>
</tr>
<tr>
<td><strong>Semiconductor Products Sector Global Leadership</strong></td>
<td>Curriculum of several courses: Leadership, Business</td>
<td>1 to 3 days each</td>
<td>Separate tracks for executives, mid-level, and first-level managers. Portions are run in North America, Asia, and Europe.</td>
</tr>
<tr>
<td><strong>Building World-Class Leaders through Coaching Executive Seminar Series</strong></td>
<td>Coaching Skill Development</td>
<td>2-3 days</td>
<td>Introduced in 1999. Offered world-wide</td>
</tr>
<tr>
<td><strong>Executive Topic Awareness</strong></td>
<td>Coaching Skill Development</td>
<td>0.5 - 1 day</td>
<td>Business Models for the Digital Economy, Building Alliances and Partnerships, and Understanding Generational Diversity. Offered in North America and Europe.</td>
</tr>
</tbody>
</table>

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59
### China Accelerated Management Program
- **Type of Course:** Leadership Development, Action Learning, Rotation
- **Duration:** 18 days
- **Description:** Designed to accelerate the development of new managers in China. Offered in China only.

### Leadership Accelerated Program
- **Type of Course:** Leadership Development, Action
- **Duration:** 20 days
- **Description:** Designed to accelerate the development of new managers in India. Offered in India only.

### OPEN-ENROLLMENT PROGRAMS
- Project Leadership, Management & Communications
- Achieving Results through People
- Essentials of Motorola Management
- Listening and Feedback
- Telecommunications Principles for Project Managers
- International Project Management
- Skillful Conversations: a Journey to Dialogue
- The Transcultural Academy

*Source: [www.businessweek.com](http://www.businessweek.com)*

### Exhibit III
**Executive Education Profile of Motorola in the 1990s**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>1998-99</th>
<th>1993-94</th>
<th>% CHANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of executive non-degree programs (excluding multiple sessions of the same program)</td>
<td>10</td>
<td>7</td>
<td>42%</td>
</tr>
<tr>
<td>Number of executives attending above programs (not including EMBA or part-time degree programs)</td>
<td>1280</td>
<td>995</td>
<td>28%</td>
</tr>
<tr>
<td>Percent of attending executives who live within 45 miles of the school</td>
<td>40%</td>
<td>50%</td>
<td>-20%</td>
</tr>
<tr>
<td>Percent of attending executives who live or work overseas</td>
<td>15%</td>
<td>10%</td>
<td>50%</td>
</tr>
<tr>
<td>Total participant days (total participants x total length of programs)</td>
<td>6670</td>
<td>5075</td>
<td>31%</td>
</tr>
<tr>
<td>Percent of professors with at least 5 years full-time corporate experience</td>
<td>60%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Number of custom programs run</td>
<td>10</td>
<td>7</td>
<td>42%</td>
</tr>
<tr>
<td>Percent of participants from organizations with whom school has done business for three or more years</td>
<td>99%</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

*Source: [www.businessweek.com](http://www.businessweek.com)*
Employee Training and Development at Motorola

Exhibit IV
A Brief Note on Kirkpatrick Evaluation Levels

The four-level model developed by Donald Kirkpatrick (1994) is one of the most popular methods of assessing the effectiveness of training programmes. In Kirkpatrick's four-level model, each successive evaluation level is built on information provided by the lower level. According to this model, evaluation should always begin with level one, and then, as the time and budget allows, should move sequentially through levels two, three, and four. Information from each prior level serves as a base for the next level's evaluation. Thus, each successive level represents a more precise measure of the effectiveness of the training program.

Level 1 Evaluation - Reactions

Evaluation at this level measures how participants in a training program react to it. It attempts to answer questions regarding the participants' perceptions - Did they like it? Was the material relevant to their work? This type of evaluation is often called a "smile sheet". According to Kirkpatrick, every program should at least be evaluated at this level to provide for the improvement of a training program. In addition, the participants' reactions have important consequences for learning (level two). Although a positive reaction does not guarantee learning, a negative reaction almost certainly reduces its possibility.

Level 2 Evaluation - Learning

Assessing at this level moves the evaluation beyond learner satisfaction and attempts to assess the extent to which students have advanced in skills, knowledge, or attitude. Measurement at this level is more difficult and laborious than at level one. Methods range from formal to informal testing to team assessment and self-assessment. If possible, participants take the test or assessment before the training (pretest) and after training (post test) to determine the amount of learning that has occurred.

Level 3 Evaluation - Transfer

This level measures the transfer that has occurred in learners' behavior due to the training program. Evaluating at this level attempts to answer the question - Are the newly acquired skills, knowledge, or attitude being used in the everyday environment of the learner? For many trainers this level represents the truest assessment of a program's effectiveness. However, measuring at this level is difficult as it is often impossible to predict when the change in behavior will occur, and thus requires important decisions in terms of when to evaluate, how often to evaluate, and how to evaluate.

Level 4 Evaluation - Results

Frequently thought of as the bottom line, this level measures the success of the program in terms that managers and executives can understand - increased production, improved quality, decreased costs, reduced frequency of accidents, increased sales, and even higher profits or return on investment. From a business and organizational perspective, this is the overall reason for a training program, yet level four results are not typically addressed. Determining results in financial terms is difficult to measure, and is hard to link directly with training.

Source: www.coe.sdsu.edu
During the 1990s employee retention became a major problem for many companies around the world. Studies showed that in most cases people were leaving because they felt they were stagnating in the organization doing the same job for years together without an opportunity to improve their performance and their ‘employability’. Earlier performance evaluation, done annually, proved to be not very effective. An internal survey on the employability of the employees revealed that over 70 per cent of the employees did not feel they were getting the training they needed to be successful at their jobs. Rather than resorting to stop-gap retention initiatives, Motorola wanted to lay a solid foundation that would support human performance in every way. The company made a commitment to make its training more job-relevant. It consulted employees about their needs and wants, and then revamped the entire training programme.

Motorola introduced the Individual Dignity Entitlement (IDE) programme to support its human assets by providing them with enough resources to do their best job - fair, uniform standards; continuous, useful feedback; and appropriate rewards and recognition. Six months later, the percentage of negative survey responses had been cut in half and has continued to decrease. In their relationship with each employee, the supervisors were asked to take into consideration the person’s specific needs at every point on a career development continuum that begins when a person interviews for a position and ends when he or she leaves the organization. The IDE required all the supervisors to discuss, on a quarterly basis, the training needs of each employee working under him. The supervisor asked each employee the following six questions:

1. Do you have a substantive, meaningful job that contributes to the success of Motorola?
2. Do you know the on-the-job behavior and have the knowledge base to be successful?
3. Has the training been identified and been made available to continuously upgrade your skills?
4. Do you have a personal career plan, and is it exciting, achievable, and being acted on?
5. Do you receive candid, positive or negative, feedback at least every thirty days that is helpful in improving or achieving your personal career plan?
6. Is there appropriate sensitivity to your personal circumstances, gender, and/or cultural heritage so that such issues do not detract from your personal career plan?

A negative response to any of these questions from any employee was treated as a lacuna in the training programmes of the company and immediately a remedial plan was designed. Another meeting is held 90 days later - the same questions are asked and progress on the previous quarter’s issues is evaluated.

Any employee-supervisor conflicts at Motorola, which cannot be resolved by the parties themselves, are taken to a higher level where an action plan is created. This can involve taking the issue to chairman level, if necessary. David Pulatie, senior vice-president of Motorola, said: “In a corporation of 150,000 people, in 110 countries all over the world, any issue that comes from any place in the corporation can be moved up, solved, moved back down, and everybody knows about it in 90 days.” Motorola always followed an open-door policy with regard to redressing employee grievances. Employees could walk straight to the manager’s room any time to discuss any problem pertaining to the job or personal issues. In fact every employee had direct e-mail access to the Motorola CEO in the US.

Compiled from various sources.
Employee Training and Development at Motorola

Exhibit VI

Highlights of Motorola’s Self-Directed Learning Program

The advantage of a self-directed learning programme is its ability to generate higher levels of participant motivation and enthusiasm among jaded and time-pressured employees. An organization culture that prizes learning and offers multiple opportunities for development, with the support and encouragement of the top management and HR department, is a critical requirement if self-directed learning is to flourish in an organization.

Motorola’s self-directed training system highlights three issues involved in providing and administering systems to support self-directed learning:

Infrastructure for Delivering Learning Resources: Motorola's worldwide computer information network allows its employees to access training materials directly on their desktop by simply logging in with user I.D., and a usage fee is automatically charged to the employee’s departmental training budget. A record is kept of the total number of hours employees use this system, and a roll-up report is provided to managers on the amount of employee training occurring. Another delivery platform is the Just In Time Lecture series, developed in cooperation with Carnegie Mellon University. Here, a company expert is filmed making a presentation on a topic. Then, the lecture, presentation slides if any, and a running list of frequently asked questions with answers are packaged onto a CD disk, and shipped to all those interested.

Selection and Supply of Learning Resources: To meet its unique and specific needs, Motorola, makes as well as buys learning resources. Two homegrown learning packages have already been made available to employees. One is “Motorola: Yesterday, Today, and Tomorrow,” a 52-unit review of Motorola culture, history and values. Each unit takes about 10 minutes to complete. All new employees are given easy access to this programme as part of the new employee orientation process. At the end of each unit, the learner answers questions, and is then provided with correct answers.

A second offering is the “First Time Leader’s Survival Kit,” an 80-unit instructional and performance support programme that requires 50 hours of time on the computer, plus an equal amount of time in the field. It takes nine months to complete. This programme is designed for newly appointed supervisors and includes topics like budgeting, handling meetings, planning, personnel management, and reorganization.

Effective and Easy to Use Learning Resources: Motorola customized its training to provide training materials in a format that best matched the learning preferences of each user. For example, using Kolb’s Learning Style Inventory, Motorola worked out typical profiles of engineer learning styles.

Source: www.themanagementmentor.com
Human Resource Management

Additional Readings & References:

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