Knowledge Management at Shop Floor Level in Japanese Multinationals — A Case Study of Honda and Sanyo and Their Joint Ventures in India

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Various techniques and tools built by the Japanese in their management system are outlined. This system is centred on 'elimination of waste' which could be in the form of large amounts of inventory, defective products and operational time. The techniques pursued for eliminating wastes are: 'Just in time', 'Total quality control' and 'Continuous improvement'. Knowledge harnessing in Japanese multinationals has been presented through the suggestion system and quality circle in operation at Honda Japan and Sanyo Japan and their venture operations in India. Two case studies have been presented — one of Honda Japan and the Hero Honda and the other of Sanyo Japan and BPL-Sanyo. It has been concluded from these case studies that in Japan knowledge management in the form of knowledge harnessing is taken care of by virtue of implementation of Japanese techniques. In Honda Japan, the practice of sharing of acquired knowledge through annual conferences has helped the company not only is spiraling knowledge from bottom but also in disseminating it to other regions. In India, on the other hand, managers are yet to realize the importance of knowledge management. The knowledge management exists in a very limited manner in the form of explicit knowledge management.

The twentyfirst century has in store a mixed basket for all of us — Challenges, promises, threats, stiff competition and opportunities. Propelling the industrial world into this century will be knowledge and success would only be theirs who can implement knowledge plans with alacrity. Knowledge management can be traced to age-old apprenticeship under which an individual acquired skill and knowledge by working with the master craftsman. As industrialization progressed and operations of companies became complex, it was found that while knowledge existed at various levels or was in practice, in certain pockets successfully, it was not being harnessed appropriately for the benefit of the entire organization.

Addressing the issue of managing knowledge, the academic world pursued its search from two different standpoints. One group of researchers — the more ‘technically-inclined’ — looks to the computer to provide answers to the problem. Their aim is to make machines that think like humans. The other group is of those researchers who come from the management domain and are interested in knowledge management because they perceive knowledge as a huge corporate asset.

But, even among the latter group, there is a difference in perception of the term “knowledge”. Most western managers comprehend knowledge as quantifiable data that can be mechanistically processed and thus can be stored and retrieved at will. This according to Ikujiro Nonaka happens because, “most western managers hold a too narrow view of what knowledge is and what companies must do to exploit it. They believe that the only useful knowledge is ‘hard’ (read: quantifiable) data. And they see the company as a kind of machine for ‘information processing’”. The Japanese companies on the other hand, developed management practices, which drew on tacit and often subjective insights, intuitions and ideas of employees. This kind of knowledge, though nebulous, is indispensable for lasting competitive advantage in the industrial world.

The Japanese management system though centred on “elimination of waste” had inadvertently come to manage knowledge through various techniques and tools that they built into the system. Japanese firms identified waste in the form of large amounts of inventory, defective products and operational time. Some of the techniques pursued for eliminating waste are:
JUST IN TIME (JIT): It means producing the right quantity at the right time. JIT essentially takes care of inventory waste by matching production to sales. This is achieved by cellular manufacturing unit, rapid die change and the kanban system. This technique necessitates the flow of information, or explicit knowledge, between departments. It also requires management of tacit knowledge. The famous story of bringing down the time required for die change from an hour to twelve minutes in the Toyota shop floor is a case in point. Here the shop floor workers worked towards bringing down the time by initially innovating on the die machine and then undergoing training to do it in the shortest possible time through synchronized movements. Though the objective was to take care of operational time wastage, the system also enhanced knowledge management in terms of flow and extraction of idea.

TOTAL QUALITY CONTROL (TQM): Apparently quality control takes care of defective waste, but when quality is defined in terms of customer needs, it also takes care of waste in the form of stocks that are redundant because of no demand. In taking care of quality, the Japanese system moved the issue of quality from the quality department to the shop floor. They developed the concept of treating the next person/department in the production line as the customer. Once companies made this move, they required the shop floor workers to be equipped with the knowledge to check the product for any defect and also to rectify the defect originating in his station.

CONTINUOUS IMPROVEMENT: The Japanese system revolves around the idea of kaizen better known as continuous improvement. Here, the focus is on how to perform better. Each employee is required to reflect upon how to contribute to the well-being of the company. This is possible when a dynamic environment is provided within the company, which allows for spiraling of information. This Ikujiro Nonaka described as the high-density field of interaction.

These techniques essentially required a flow of information between various departments as also between individuals to enable smooth operations. The flow of explicit knowledge was dealt by establishing a system that ensured collection and dissemination of data from the source of origin to the end user with minimum barriers. Over time, with advancement of information technology, access to this knowledge within an organization became rather easy. The flow of tacit knowledge, which originates at individual level, due to original experience is hard to source, and in turn, difficult to crystallize and implement. This is because it is highly subjective, nebulous and difficult to formalize. In order to nurture this kind of knowledge, which is basically hunches, perceptions, beliefs and mental models, Japanese companies came up with various management tools to create an environment where frequent and intensive interaction between employees ensured that knowledge originating in some pocket found recognition and implementation at the level of the organization.

The Japanese managers realized early on that knowledge of shop-floor workers working on machinery and machine tools was significant to reduce cost as well as improve quality. To harness this knowledge, two systems in operation at most leading companies are the suggestion system and the quality circle. The suggestion system is used to harness knowledge at individual level and the quality circle uses teams at work in the shop floor on quality issues to capture and disseminate knowledge.

Knowledge harnessing in Japanese multinationals can be better understood by looking at the suggestion system and quality circle in operation at Honda Japan and Sanyo Japan and their joint venture operations in India. This case-study attempts to describe (1) management of two organizational systems, namely, suggestion system and the quality circle in harnessing dispersed knowledge assets in Japanese organizations; and (2) the transferability of such a system of knowledge management to another system and culture of managing knowledge.
The case of joint venture provides for a weak foundation since the control exercised by the Japanese partner ensures success of a potential transplantation, and it also provides for a strong foundation since an effective transplant would at least ensure the possibility of transfer of knowledge management practices under certain restricted conditions.

A Case Study of Honda Japan and Its Joint Venture — Hero Honda India

The Honda Japan story began in 1948 with a single factory in the city of Hamamatsu. In 50 years, Honda has become a global corporation manufacturing and marketing automobiles, motor cycles and power products. Honda owes its worldwide success to the efforts put in by its founder, Sochiro Honda, and his partner, Takeo Fujisawa. Sochiro Honda was a man of determination who, in his zeal to succeed, pushed his employees hard. He was basically an inventor, who since his early childhood dreamt of making cars. Sochiro Honda is said to have had a mercurial temperament and a big ego. He was known for his lack of formality and disinterest in political matters. He was a perfectionist and focused on making his products equal to the best in the world. While his genius was undoubted, Sochiro Honda was hardly the right man from the public dealing point of view. His partner Takeo Fujisawa complemented him by providing a more conservative and practical face to the business. He took upon himself to look after the finance and marketing aspects of the company. In his own words, his (Fujisawa’s) mission was to build “a successful company (that) would provide a resource base to pursue his (Sochiro Honda’s) grandiose dream”. The Honda-Fujisawa combination worked. Honda, as a company, gained prominence in the global community through ceaseless innovation and commitment to servicing the needs of the market. In fact, Honda has always attempted to provide the world with high quality products at low prices.

This policy has translated itself into the corporate philosophy of “bringing joy to the buyer by inculcating joy in producing and joy in selling among the employees”. Honda’s unique corporate culture and groundbreaking approach to developing new technologies enabled the company to develop new products that add to the quality of life, comfort and convenience. Honda first tested the waters abroad when it started exporting to America in the 1960s. Gradually, the export business reached Europe and then the rest of the world. Unlike many Japanese companies, which started their export conquests from the South East Asian markets, Honda concentrated on North and South America. Honda started setting up plants for assembling knockdown motorcycles way back in the 1970s. By the 1980s, the company had factories for assembling cars in America and Europe. Subsequently, proximity of South East Asia attracted Honda to export to these countries as well. As South East Asia prospered, the market for motorcycles grew exponentially and it proved profitable for Honda to establish many transplants and joint venture companies in the 1970s.

In 1986, it partnered with the Hero Group, the largest manufacturer of bicycles in India. Today as Honda begins to reap the benefits of its international outlook, it has divided its worldwide production into four regions. Honda’s entire global strategy is now based on the four–region model. Consequently, the company’s Japanese operations are undergoing a major transformation from the traditional world headquarters to an international hub for information management and resource coordination. As the world moves toward the twenty-first century, Honda’s focus is to develop a revolutionary clean engine technology in its continuous quest to be a leader in the automobile industry. New products include ultra low emission gasoline vehicles, as well as natural gas vehicles.

Honda Japan’s achievement has been attributed to innovative thinking in all functional areas. Honda has often derived slogans to help departments focus on a particular area (The making of Honda City model in automobiles is one of them). More importantly, they have practised the Japanese management techniques — JIT, TQM, Kaizen in their factories from its initiation zealously. Honda Japan has therefore always favoured implementation of these techniques in their subsidiaries.
In India, Hero Honda Motors Ltd (hereafter referred to as Hero Honda) is a joint venture between Honda, which holds a 26 per cent minority stake and the Hero group that holds 46 per cent. The remaining stake is with the public. With its fuel-efficient, low pollution motorcycles, Hero Honda has a unique, sharply-differentiated position in the Indian motorcycle market. The collaboration between the two partners is both technical and financial. The joint venture is dependent on Honda’s superior product technology for creating consumer pull for the motorcycles. Given this dependence on Honda, the Hero group has followed business practices that build trust and work towards keeping its partner happy. Hence, Honda Japan has maintained a friendly distance from the day-to-day operations of the company.

Hero Honda started its operation with a motorcycle assembly plant in Dharuhera about 68 km from Delhi in 1986. As the two-wheeler market boomed in the nineties, a new state-of-the-art plant was set up in Gurgaon in 1996 with the help of Honda Japan. Today, Hero Honda’s motorcycle manufacturing capacity stands at 570,000 units per annum. The Hero group has also collaborated with another Japanese company to produce ancillary parts for motorcycles. With about fifteen Japanese personnel from Honda stationed in the headquarters of Hero Honda and at least five in each of the factories, Honda’s Indian presence is significant. The Gurgaon plant resembles a plant site of Japan. The plant design, air-conditioning and machinery have all been brought from Honda or made according to Honda specifications. Honda technical staff is placed in the factory to extend full support in case of any problems.

Hero Honda boasts of the best operational efficiency in India. Munjals, the Indian partners, are well known for trying out new management ideas. In fact, they were one of the pioneers in applying the ‘Just-in-Time’ concept of inventory management at their Hero cycle unit. The Dharuhera plant was set up with little knowledge of management in 1984-85 and people, rather than system, dominated the management. This negatively affected the work environment and an attempt to recover was made from time to time. Therefore, when the Gurgaon plant was being set up, the top management, having learnt from their experience, planned the operations very carefully. It was important to have systematic communication channels to relay messages pertaining to change of design, safety, quality and discipline. All these parameters were deemed important for higher productivity. The Hero Honda management also introduced ‘Total Quality Management’, and during induction training all employees were given lectures on the concept and its applicability. The shop floor workers were repeatedly told that quality of the product lay in their hands. The PDCA cycle is followed which ensures the practice of Kaizen. Hero Honda has set its frame assembly line in a mass production format and its engine assembly line in a flexible production format for convenience. In fact, the Hero Honda management is enthusiastic about using new tools in order to obtain a work culture that would set an example for the industry.

**QC Circle**

Honda Japan believes in effective communication at all levels and within each level and has devised small group activity, which helps increase productivity, create better work environment and encourage knowledge creation. Way back in 1971, Honda Japan started the NH circle which stands for Now, Next, New Honda. This is very similar to the quality circle and is designed to solve various problems by letting the group members freely bring forth their concerns, ideas and propositions. The purpose of this activity is to allow each employee to achieve personal development through interaction with others. Employees help each other to resolve problems they face on a daily basis, whether they relate to production tasks, commuting to the work place or facilities at the work place. A group of five employees get together and form a circle and work during off time to solve problems. This allows employees to help improve the conditions in the plant at no cost to the management. NH circle also helps in creating horizontal and diagonal links at the very bottom of the organizational pyramid. An overall view
of the NH circle with respect to the number of circles, its members and the participation rate is given below. The participation rate has hovered in the range of 90-100. The enormous success of the NH circle has led Honda vendors and overseas affiliates to introduce this system in their own organizations.

An annual world conference of units of Honda and invited joint venture members is held to discuss the various aspects of NH circle and its contribution to various units are discussed. Presentation is made by teams selected for their original and thought-provoking ideas in quality circle at this international forum. Often these ideas are then implemented in other units across the world. Thus knowledge originating in one unit say Hamamatsu Japan can be implemented in Hero Honda India.

At the Hero Honda factory they have quality circles in operation which are restricted to production activity and look towards creation of knowledge which directly contributes to the company’s profit. The quality circle at Hero Honda is a group activity where about ten employees form a group and engage in quality improvement during work hours. Though there are 32 quality circles, only 17 are active. They function within work time. At the time of visit to the Gurgaon plant the management was giving more emphasis to the suggestion system and the quality circle had been relegated to a secondary role.

### Suggestion System

Honda Japan has a suggestion system which is in operation since 1953. Honda as a company respects free expression and initiative on the part of their employees, and the suggestion system was envisaged as a method to fulfill this philosophy. The system is devised to improve an employee’s performance while allowing him to experience the joy of conceiving new ideas and putting them to work. The suggestion system serves two purposes: first, it increases productivity and second, it helps flow of communication from the bottom to the top and in effect helps in spiraling knowledge from below. Participation in the suggestion system is voluntary in nature but the participation rate is as high as ninety per cent. Reportedly, the Hamamatsu factory has no problems in implementing the system as employees voluntarily give suggestions. In 1996, with the total employees including the top management in the factories at 4075 the company received 30,392 suggestions and implemented 27,462 of them. The suggestion system in Honda Japan is effective because it has been systemized. This has ensured that tacit knowledge becomes explicit knowledge and encourages documentation of knowledge.

The suggestion originating from an employee is written in a prescribed form where he clearly states the theme and describes the suggestion. Each division has an employee who heads the suggestion system. Every year the assistant manager decides on

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Table 1—Results of NH circle activities in Hamamatsu Factory of Hero Honda

<table>
<thead>
<tr>
<th>YEAR</th>
<th>'87</th>
<th>'88</th>
<th>'89</th>
<th>'90</th>
<th>'91</th>
<th>'92</th>
<th>'93</th>
<th>'94</th>
<th>'95</th>
<th>'96</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of circles</td>
<td>389</td>
<td>391</td>
<td>405</td>
<td>387</td>
<td>405</td>
<td>411</td>
<td>340</td>
<td>369</td>
<td>380</td>
<td>344</td>
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<tr>
<td>No. of employees</td>
<td>3966</td>
<td>3998</td>
<td>4018</td>
<td>3998</td>
<td>4018</td>
<td>3620</td>
<td>3263</td>
<td>3649</td>
<td>3581</td>
<td>3397</td>
</tr>
<tr>
<td>Percentage of total employees</td>
<td>94</td>
<td>95</td>
<td>97</td>
<td>95</td>
<td>97</td>
<td>90</td>
<td>79</td>
<td>89</td>
<td>91</td>
<td>88</td>
</tr>
</tbody>
</table>

Source: General Affairs Department, Hamamatsu Plant
the employee to be chosen for this assignment. It is this person who becomes the driving force behind the success of the suggestion system within his division, and who educates and keeps an account of who are lagging in giving suggestions and coaxes them into action. Once a suggestion is received by the appointed employee, he - along with the manager - judges the suggestion on the basis of:

(a) Its effect on profit
(b) Originality of the idea
(c) Contribution towards improvement (in terms of quality).

If the suggestion is relevant to a related division, then it is sent to the respective division for comments. Opinions on the suggestion are considered before sending it to the committee. Only excellent suggestions make it to the committee, which consists of heads of the departments of the factory. The suggestion is then evaluated and points awarded. An accepted suggestion is placed on the notice board with a photograph of the suggestion maker. The suggestion is then placed for implementation. All this is done within a month of its origination. The employees collect points and money on the adopted suggestion. The money and point system, of course, takes into account the value of the suggestion to the organization. These points are then added up and different prizes are awarded according to the points received at a ceremony on the foundation day. The types of awards and the number of employees who received it are shown in the Table 2.

The suggestions whether accepted or rejected are sent back to the proposer with comments through the channel as shown in Figure 1. This exercise encourages workers whose proposal are rejected to continue to give suggestions and also gives them a unambiguous picture of why their suggestion was rejected. It encourages them not to commit a similar mistake in future. Further, the notes gives the proposer an indication of the kind of knowledge the company is focussing on.

In 1996, soon after the Hero Honda plant in Gurgaon became operational, the human resource department initiated the suggestion system scheme. They have defined and systematized the system and have set an example to other business groups in the sector.

Structurally, at the apex of the suggestion system is the steering committee consisting of all the heads of departments who take the ultimate decision about the award. This body is helped by the section coordinators. They are chosen from each department and work at various work sites within the plant. The role of the coordinator is to get suggestions, rate them and implement those selected suggestions which come under his purview. The steering committee and the section coordinator meet once a week to select the suggestion for the month. The selection is based on cost saving (50 per cent), system and quality (30 per cent), originality (10 per cent) and applicability (10 per cent). A suggestion is submitted to the section coordinator (on a standardized form) by an employee. It is then scrutinized on the basis of the above criteria. In case the suggestion is for another department then it is sent to that particular department and its eligibility considered. Once the suggestion is found eligible, the employee is notified. In the meeting of the steering committee and section coordinators, the best suggestion of the month is selected. The selected suggestion is then sent for implementation. The system is depicted in figure 2. During the visit four suggestion system

| Table 2 — Types of awards and successful employees during 1997-98 |
|------------------|--------|------------------|
| Kind of award    | Points | Number of employees |
| Honda award      | 300    | 106              |
| Record award     | 150    | 658              |
| Challenge award  | 100    | 1982             |
| Gold award       | 50     | 3611             |
| Silver award     | 30     | 3939             |
| Bronze award     | 15     | 4156             |

Source: General Affairs Department Hanamatsu Plant Honda, Japan.
section coordinators were questioned and some suggestions discussed. Two suggestions are mentioned below:

1. The first example is of a suggestion that came from a shop floor worker in the press shop. A big steel sheet was typically placed in the press machine and cut into 16 pieces. This employee had come up with a suggestion such that the same big sheet was placed in the press in a different way and 20 pieces could be fabricated. This suggestion was found original and cost reducing.

2. Tools used for cutting aluminum were found to be ineffective because aluminum dust stuck to the tools. This led to an irregular finish. Frequent regrinding of the machines was necessary. A suggestion to clean the cutting tools in sodium nitroxide...
(in which case the aluminum dust would dissolve) came from a weld shop employee. He had arrived at this solution after consulting the quality department, which had some expertise in chemistry. In this case, the solution to the problem came with the help of another department. This not only reduced cost but also enhanced quality.

In suggestions involving two or more departments, like in the second example, inter-departmental barriers are broken down and lead to flow of tacit knowledge.

After 15 days of implementation, a check on the effectiveness of the suggestion is carried out. A reassessment (and consequently marking) is done on the basis of the report, following which the employee is awarded for the suggestion made. The employee is awarded marks on the basis of the criteria and is given Rs 300 (around $7) by the chairman. All employees who make a suggestion are given gift, say a ballpoint pen. Further, the best suggestion of the year is given the annual award of cash prize and the family is allowed a plant visit along with a free lunch in the factory cafeteria.

The flow of suggestion system differs significantly between these two factories. In Hamamatsu factory, even in case a proposal is rejected it is sent back to the employee, with comments from the division. In Hero Honda, this practice is missing. While talking to the co-ordinators it became evident that the employees who faced rejections were reluctant to participate in this exercise. This is detrimental to the company in case it is looking forward to harnessing knowledge through this system. In fact when the management was asked about the advantage of the suggestion system, they quoted worker participation, motivation and feeling of family as the reason. Unfortunately, Indian managers were yet to wake up to the challenge of knowledge management!

The Case Study of Sanyo Japan and BPL-Sanyo

After the Second World War, the American Occupation undertook a massive restructuring of the Japanese economy. Decentralization of industries was one of them. In effect, the Occupation Author-
1970, Yuro Iue made way for his brother Kaoru Iue to become the president and he became the chairman. Kaoru Iue is remembered for his ‘one-third’ market strategy under which Sanyo diversified its manufacturing capacity into three equal sectors: manufacturing for the domestic market, domestic manufacturing for foreign markets and overseas manufacturing for additional foreign markets. This policy led to the balanced growth of the company on a global basis. This along with the shrewd and daring business acumen of Kaoru Iue saw local production activity in almost every continent. During his reign Sanyo also made a decisive move towards the high technology market so as to remain competitive in the electrical and electronics sectors. Sanyo, which had to compete with ten other competitors in the domestic market, always had to give prime importance to foreign markets and this has translated into an aggressive overseas strategy throughout its history. The search for new markets and the success of Suzuki in Maruti Udyog venture in India prompted Sanyo Japan to seek a partner in India. India did not follow an open door policy towards foreign investment during the 1980s, though it had relaxed its rules on equity participation, rationalization of taxes, delegation of approval powers, etc. This was seen by Sanyo Electric Ltd as an indication of more to come and Sanyo entered into a joint venture agreement with BPL Ltd.

Sanyo Japan is a rather conservative company and it observes a hands-off approach towards its subsidiaries. In its home operations, it practices the management techniques — JIT, TQM and Kaizen and attributes its success to disciplined implementation of these techniques. These practices they realize has not only taken care of cost and quality but has also ensured knowledge management. The managers in the factory were fully conscious of the role these techniques play in spiraling information from various centres and collating it at organisation level.

BPL Ltd was incorporated in 1963 in technical collaboration with BPL (Instrument) Ltd of UK, located initially in Palakkad, Kerala. It was later relocated at Bangalore, Karnataka. Karnataka was keen to provide a conducive climate for foreign investment. The company had the requisite infrastructure and had the necessary funds to engage in a joint venture. BPL Ltd at that time was looking for a technical tie-up with a world leader. Further, it had great plans to venture into consumer electronics and white goods in the domestic market and establish itself as the number one player. A Japanese tie-up was seen as providing the brand name with a certain assurance regarding quality and technical finesse to the consumer. This mutual consideration led to the formation of BPL Sanyo Technologies Limited in 1982 to manufacture a wide range of state-of-the-art radio cassette recorders both for the domestic and international markets. Two factories were set up — one at Palakkad and the other in Bangalore. This was followed by the creation of BPL Sanyo Limited in 1983 to manufacture video cassette players, video cassette recorders and other critical components both for the domestic markets as well as exports. Finally, BPL Sanyo Utilities and Appliances Limited was incorporated in 1989 for manufacturing a wide range of white goods. Today the equation of equity holdings has changed and only in BPL Sanyo Ltd, Sanyo Japan holds 40% of the equity. The other two have been merged into BPL Ltd. The joint venture is in the nature of technical collaboration with the understanding that a certain percentage of the product produced in BPL Sanyo Ltd would be exported under the brand name of Sanyo. BPL Ltd has come a long way by leveraging on the brand equity of Sanyo by calling itself BPL-Sanyo. As the company became a dominant market player by virtue of its quality and after sales service, its advertising campaign has less reference to Sanyo. Today, it projects itself as BPL Ltd though it continues to have a technical tie-up with Sanyo in a whole lot of products, the latest being the production of alkaline battery which was started in 1996. In the production of this product, the raw material is brought from Japan, processed and packed here, with 80 per cent of it being re-exported to Japan under the brand name of Sanyo. A close scrutiny of the package reveals ‘Made in India’ printed in small letters. The BPL Sanyo joint venture is an instance
where the host company successfully encashed on the foreign company's technical know-how and its international image.

In December 1986, Sanyo re-engineered its organization and management structure in preparation for the global competition by mergers. It embraced a new company logo and re-defined its scope of business and work standards. Satoshi Iue, the current chairman and CEO of the company who took over the company in 1986 has reinforced the outward looking strategy. Today Sanyo has a large number of overseas plants located in such far-flung place like Tierra del Fuego in Argentina. Though somewhat lagging in the high technology field, Sanyo nevertheless remains highly profitable in consumer electronics. With an enviable consumer network around the world, it continues its high growth rate, especially with smart office automation products off the shelf. Satoshi Iue says, “We in Sanyo Electric Co. Ltd have entered our 50th year since the start of the operation and upon making this milestone we have put together a vision for the 21st century. As we focus on these two key areas, we have established for ourselves a goal of having all manufacturing facilities be certified under ISO 14000 series of international standard for environment management system... With global awareness towards environmental protection getting stronger, Sanyo together with SUE wishes to grow together and become ‘the indispensable element in the lives of people all over’”.

BPL Ltd's mission is to achieve leadership position in all its business groups through utilization of the best and most appropriate technologies, applying the finest manufacturing disciplines and most efficiently marketing high quality products and services to continuously give its customers the best value for their money. This they plan to achieve by following total productive management which incorporates various Japanese management techniques. The plant in KAIIDB industrial area, Dobbespet, has incorporated the total productive maintenance (TPM) which was initiated in December 1996 and has been divided into introductory stage, implementation stage, full development stage and steady application stage. Through TPM productivity, quality, cost, delivery, safety, training and morale can be improved. Among the techniques, Kaizen and total quality are the most important. TPM involves different sets of operation and also includes administrative operations. The emphasis here is on cleaning, simplification of account related procedures and finally production management system. The plants that are involved in this have some top managers who have been to Japan on some course or for technical training and have a fair knowledge of how it functions in Japan. The production manager of the Noida plant who was impressed by the just-in-time concept has started it on his own initiative. Given the constraint of getting components on time because of unreliable transportation system, he has done a remarkable job. He found that work-in-progress and raw material inventory was 60 per cent of the total cost. By bringing down the stock to one day he has saved a significant amount. To facilitate a faster delivery of components from foreign country, namely Taiwan and Hong Kong, the consignments are airlifted and the maximum lead-time is of seven days. The components arriving from Bangalore have one day lead-time and packaging material which is subcontracted has two or three days. Within the plant, the work-in-progress inventory is controlled through the kanban system. There are eight cards on the pipeline and the supervisor of each division has the responsibility to notify the store who, in turn, informs the production manager. A board in the manager's room has the number of components on the y-axis and the supplier's on the x-axis. Thus, at a glance the manager is able to spot the need and also the delay in supply. Having achieved fairly good results the strategic managers at the head office are all for incorporating this into their over all programme.

However, while this production manager was replicating the JIT and enhancing flow of information in inventory management system rather successfully, not only were managers in other factories unaware of this, even the top management were unconscious...
of this activity. Clearly, knowledge management did not find a place in the organization.

QC Circle

Sanyo Japan has a wide variety of 'small group activity' which is compulsory to all employees. During the factory visit, we observed an action plan in operation for knowledge enhancement of employees. Named QPPORF ('Q- Quality, P- Practical, P-program, O- Of, R- Revolution, F- Factories'), this was supposed to touch all aspects and functions of the organization and help Sanyo reach the number one position by the start of the 21st century. All the small group activity — including QC circles — is centered around this broad theme. QC circle activities are displayed on the notice board and these boards are placed along the shop floors. QC circle activity teams are awarded once a year for their performance.

The QC circle in BPL Ltd is limited to the shop floor. When questioned about limiting QC circle to production line alone, the management at factory site said that quality was essential to the production line and had little relevance to the support department.

BPL Ltd has devised two plans: world class manufacturing and integrated logistics (WCML); and total production maintenance (TPM) for overall growth of the company. Factories are selected for application of either of them. The factories visited had implemented TPM.

TPM is a concept derived from the TQM concept of the Japanese management system and uses techniques like Kaizen. In the factory, QC circle was in operation on the shop floor; and one saw boards with PDCA cycle. The line supervisors and the workers worked as a team to solve problems with the help of shop floor engineers. When the issue of limiting quality circle to the shop floor was raised with the top management, they expressed that though TQM needs to be implemented in all departments to ensure a greater impact, it was difficult to implement it in support departments because of lack of understanding about the concept.

Suggestion System

The suggestion system in Sanyo Japan is voluntary with participation rate of above 90 per cent. Suggestion is addressed to the immediate boss and a committee chooses the best suggestion. The flow of suggestion is similar to that of Honda Japan but is limited to within the factory (Figure 3).

The name along with the photograph of the employee whose suggestion has been chosen is placed on the notice board. Boards simulating running track were displayed within each department and a pointer
representing each different employee of the department was placed on the track, according to the number of suggestions made. Kacho felt that visibility motivated the employee to continue to give suggestions even if some of his suggestions were not accepted. The reason given for continuing the suggestion system was that it conditioned the employee to think about better ways of doing one's work and also gave the Kacho an opportunity to talk to the employee when the suggestion was submitted. It was observed that many employees were making use of the evening recess to write a suggestion. All “small group activities” that were applicable to the shop floor were also applicable to the supporting departments like accounts, general affairs, research and development and procurement. The research and development wing has a “small group activity” which is focused on making a compressor of -150 degree Centigrade or below. Such targets, the manager felt, gave the employees an opportunity to work in a team and often dedicated employees continue their discussion on the issue beyond office hours. An employee is rewarded every month with nominal cash or a product of Sanyo for the best suggestion and at the end of the year, the best suggestion of the year is also rewarded. These rewards are insignificant in monetary terms and are seen as recognition of an employee’s effort. Sanyo has therefore worked towards providing an environment that encourages employees to put forth their ideas, thus creating a “high density field for interaction.”

At BPL Ltd, the suggestion system was not practised. Awareness of this system which helps in cost reduction, enhances quality consciousness prevailed only among the top managerial group. Since implementation required additional resources, it was not an immediate priority with the management. Knowledge management within the BPL was restricted to only explicit knowledge. Absence of a strong system that synchronizes knowledge generated at various levels and disseminates it, to the proper pockets has restricted the growth of explicit knowledge.

From both the case studies, it is evident that in Japan knowledge management in the form of knowledge harnessing has been taken care of by virtue of implementation of these practices. In Honda Japan, the practice of sharing of acquired knowledge through annual conferences has helped the company not only in spiraling knowledge from bottom but also disseminating it to other regions. In India, on the other hand managers are yet to realize the importance of knowledge management. Knowledge management exists in a very limited manner in the form of explicit knowledge management.

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References and Notes
2 During the formative years of the company, Mr Honda appeared in a costume and in an inebriated state before a group of bankers for a formal presentation requesting financial funds.

About the author
The author is an assistant professor in “cultural management” at Northern Institute of Integrated Learning in Management, Delhi. Her Ph.D dissertation titled ‘HRM of Japanese Multinationals: A case study of two industries having subsidiaries in Thailand and India’ has been submitted to Jawaharlal Nehru University. Her area of interest includes knowledge management, transferability of Japanese management practices and employee stock options. She was a recipient of Japan Foundation Fellowship during 1996-97.