Teaching Note

Knowledge Management Practices at Toyota Motors

This teaching note was written by N. Ruchi Chaturvedi, under the direction of Sanjib Dutta, IBS Center for Management Research.
Knowledge Management Practices at Toyota Motors

TEACHING NOTE

CASE SUMMARY:

The case discusses the various Knowledge Management (KM) practices at Toyota Motors, the world’s most profitable automobile company. It also describes how Toyota enables wide knowledge sharing not just within the organization but also across its supply chain. It details the practices that make Toyota a true learning organization. It further explores the role of traditional organizational practices in the company’s KM efforts. The case concludes with a discussion on how KM has contributed to Toyota’s exemplary performance.

IMMEDIATE ISSUES:

The case is designed to help students understand and appreciate the application of knowledge management in an organization.

Internationalization issues in Knowledge Management

Toyota had plans to emerge as the largest automobile manufacturer in the world. This effort implied that KM practices at Toyota have to be percolated to new geographies and bred in people who may not be aware of the Japanese culture or practices thus depriving Toyota of the benefit it enjoyed due to its home country culture where learning per se is given a significant focus. Will Toyota be able to replicate its KM practices across geographies is a matter of concern.

KM as a Competitive Advantage

Generally KM is viewed as a competitive advantage and so as a corollary, organizations are not interested in dissemination of know- how to its partners like those in the value chain, let alone to pass the advantage to them. Toyota’s practice has been an exception. It had adopted a learning culture long before companies in the West woke up to the power of intellectual capital and KM became a buzzword. Toyota had been confident all along and had shared its knowledge with not just partners but with competitors as well. Toyota demonstrates the aspect of human involvement not just at the individual level but at the group, partner and competitor level as well. Its joint venture with GM was an opportunity to learn about the American market. Toyota is now firmly established in US and beats sales of GM in its home country. However, knowledge sharing with competitors in light of its competitive goals is a cause for concern.

BASIC ISSUES:

Importance of human aspect of knowledge management

Many people view only the software/hardware side of KM and tend to ignore that any system implementation could fail without the support of the people. They ignore the fact that human aspect is important to successful knowledge management. Toyota practices KM without boundaries involving not just the individual but at the group level as well. It had built communities
Knowledge Management Practices at Toyota Motors

of practice in the form of supplier associations since long. It did not have to implement a separate KM effort like many companies in the west, it was an inbuilt mechanism and thoroughly institutionalized. Toyota helps to rectify the view that Technology is the focus of KM. It demonstrates pretty well that it is just a tool.

**Overcoming human behavioral challenges in knowledge transfer**

The study of Toyota’s practices reveal how knowledge transfer barriers like the free rider problem can be handled with the help of a supportive culture. It also demonstrates the success of an unconventional approach of sharing most of its knowledge even with competitors, with the trust that the company was capable enough to generate new knowledge continuously.

**Knowledge creation**

Organizational hierarchies and non tolerance of failure hinders knowledge creation substantially. Toyota demonstrates the alternative approach and its benefits. Toyota was the first to launch a vehicle in the area of hybrid technology; its lean manufacturing practices were also widely adopted by companies across the globe. It demonstrated the successful use of the experimental mode of knowledge creation and recognized the value of each individual in the process of knowledge creation right from the lowest level worker to the highest level employee.

**HIGHLIGHTS:**

**Implications of Toyota’s KM practices:**

- Adoption of KM practices by a large and successful company with the learning paradigm
- Areas of application of KM and the benefits it can confer
- Role of organizational culture (especially trust) in the success of KM efforts

**LEVEL OF ANALYSIS:**

This case is intended for use in MBA/MS level programs. It is also suitable for short Executive Development Seminars/Programs.

**SUGGESTED STUDENT ASSIGNMENT:**

- To what extent does Japanese culture contribute to KM at Toyota?
- Compare Toyota as a learning organization with another Japanese automobile company – Honda. What does the analysis reveal?
- Compare Toyota as a learning organization with any other US company like GE or 3M. What difference do you find in the approaches of the two companies towards knowledge management?

**SUGGESTED QUESTIONS FOR DISCUSSION:**

1. Analyze Toyota’s efforts in terms of knowledge creation, dissemination and preservation. What are the special characteristics of KM at Toyota?
2. Examine the role of organizational culture in establishing successful KM practices at a company. How do the Toyota Way principles help KM at Toyota?
3. Debate the advantages and disadvantages of tacit and explicit knowledge management approaches. Do you think they are well balanced at Toyota?
Knowledge Management Practices at Toyota Motors

POTENTIAL USES OF THE CASE:

This case is intended for use in MBA/MS level programs as part of the Knowledge Management/ Human Resource Management/ Information and Communication Systems Management, as mentioned in the following table.

<table>
<thead>
<tr>
<th>Program</th>
<th>Course</th>
<th>Section of the Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBA/ MS</td>
<td>Knowledge Management</td>
<td>• Knowledge Creation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Human Aspects of Knowledge Management</td>
</tr>
<tr>
<td></td>
<td>Human Resource Management &amp;</td>
<td>• Organizational Learning</td>
</tr>
<tr>
<td></td>
<td>Organizational Development</td>
<td>• Implication of the nature of organizations as social</td>
</tr>
<tr>
<td></td>
<td>Information and</td>
<td>entities on Organizational Development</td>
</tr>
<tr>
<td></td>
<td>Communication Systems</td>
<td>• Role of Communication Systems in Organizational Learning</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>and Knowledge Management</td>
</tr>
</tbody>
</table>

ANALYSIS:

1. Toyota’s knowledge management efforts have been fairly broad based. They cover various aspects of knowledge dissemination, knowledge preservation and knowledge generation.

The knowledge dissemination at Toyota was facilitated by Quality Circle meetings and cross functional teams through which employees discussed production problems and the results of measures taken earlier on a regular basis. The company used a suggestion screening system where any employee could pose a question which would be made public for any other employee to answer. This was another unique system that enabled quick knowledge dissemination. Under the Sensei system, employees were coached in problem solving by an expert referred to as the Sensei. This made the knowledge transfer process very meaningful as the tacit knowledge of the expert was transferred to those interacting with him.

For the purpose of knowledge preservation, the latest software tools like the Practical Problem Solving Tool were installed; this acted as a databank of all problem solving activities across the organization. The software and databases in place supported the use of Toyota’s manual Yokoten system in which employees recorded their daily problem solving activities for future reference.

Knowledge creation at Toyota took place on account of its strong efforts to build better processes and products. The company succeeded in launching the world’s first hybrid vehicle, the Prius, through a totally in-house effort. The vehicle was developed through demanding engineering efforts based on creatively moving forward numerous ideas rather than plain incremental innovation based on a sole idea. Its world-renowned TPS system was also an effort in the same direction; the TPS included Toyota’s supply chain partners in the knowledge creation exercise.

Some distinctive characteristics of Knowledge Management at Toyota were:

- At Toyota all KM practices began with people and were linked to its people. The company ensured that the knowledge of its people was harnessed effectively to facilitate the achievement of business objectives. To enable this Toyota extracted the intuition, ideas and competencies of its employees and also built upon them continuously by motivating and mentoring its employees. The company ensured that its KM practices were driven by its employees and technology played a supportive role rather than the other way round.
Knowledge Management Practices at Toyota Motors

- KM practices were directed towards the achievement of goals of the company. The company expressed its goals in the form of a vision to generate enthusiasm and motivation towards its goals. Its KM practices were very clear and realistic to implement as the company ensured that information gathering and dissemination had a distinct purpose, that of goal achievement through continuous improvement.
- In the spirit of Kaizen, KM was not a static initiative but a dynamic one. Processes and practices underwent continuous improvement.
- The company could develop a superior knowledge base as it practiced knowledge management as a unified effort that included not just its employees but also its supply chain partners. The mechanisms used for this purpose included the formation of discussion groups among its suppliers, and between the company and its suppliers. The company took the initiative to collaborate with suppliers to solve their problems and also ensured that suppliers shared and learnt from the experiences of one another.
- Toyota did not see knowledge outflow as a threat. It made production and quality knowledge available to everyone by openly inviting its competitors to study its production system that manifested its KM practices, built through years of effort. The company was aware of the strength of its KM system and it actually made all knowledge related to the TPS freely available to competitors, and considered only design and technology as proprietary knowledge.

2. Toyota has created an organizational culture referred to as the ‘Toyota Way’ with a focus on its people. The Toyota Way principles have contributed immensely in making its knowledge management efforts a success.

The principle of Challenge gave employees a long term vision for the company and prevented them from becoming complacent about their current status. The principle of Kaizen also propelled the employees to continuously seek best practices and improve. These principles supported activities like problem identification and problem solving. Both the principles enabled continuous improvement and innovation, the hallmarks of any “learning organization”.

The Genchi Genbutsun principle was basically the process where individuals considered all the facts before reaching a proposed solution. This was a major contributor to employee learning at Toyota. The principle of respect ensured that there was mutual trust between employees and the common barriers to effective knowledge sharing like ego clashes and incomplete knowledge transfer due to mistrust, were prevented. The LAMDA method that the company adopted ensured that errors were learning experiences rather than just mistakes. Events like the Idea Expo also carried forward the learning spirit at Toyota; in the Expo, learning was fun as employees were given the freedom to design vehicles on their own for the contest.

Teamwork also facilitated the culture of discussion for decision making. This refined its processes further and created an exceptional knowledge database in the organization. The emphasis on teamwork also contributed to effective knowledge sharing and further facilitated Kaizen, ultimately leading on to the development of many innovative processes and products at Toyota.

Toyota fostered a culture of long term employment and the use of mentoring and coaching in the experimental mode. Employees were free to learn on their own with expert guides helping them learn their way to a solution rather than being provided with a readymade answer. The practice of ‘Hansei’ also promoted reflection on errors and a resolve to prevent repetition of mistakes. This made the learning process very accountable and motivated employees internally.
3.

The major advantages and limitations of the tacit and explicit approaches are discussed below:

The tacit management approach is easy and less costly than the explicit management approach. It avoids the practical problems that arise in case of explicit management. For example, a tacit approach protects an individual employee’s sense of power due to his exclusive right over the knowledge he possesses. It also might increase motivation in the organization as individuals with knowledge are recognized for their superior knowledge. It also helps prevent knowledge outflow to competitors as it is not explicitly available in the form of documents etc. The major shortcoming of the approach is that it limits the speed and accuracy of knowledge transfer due to the human factor. Also moving employees for the purpose of knowledge transfer could be inconvenient and costly. This approach may in fact lead to loss of knowledge if the employee leaves the organization. Moreover, the organization may not be in a position to assess the status of its actual knowledge base.

The major advantage of the explicit KM approach is that it tackles the limitations of the tacit approach. It is difficult to start and demands more time and costs than the tacit approach but is more advantageous in the long term. It enables quick knowledge dissemination when knowledge takes a concrete form of documents / charts / descriptions etc. With the help of technology, an organization can make its knowledge base available to employees on a round-the-clock basis across global locations. The most vital benefit of the approach is that it helps the firm in the assessment of its knowledge base and helps it to take actions for removing deficiencies and preparing itself for future challenges. The major limitation is that it may have to face organizational resistance initially and may create problems of knowledge leakage.

Knowledge Management at Toyota was definitely well balanced as the company regularly questioned the suitability of a particular approach for a situation. The establishment of the Global Production system (explicit approach) was a clear move to refine its earlier process of sending expert employees for training to a new plant (tacit approach). With the rapid support of technology and its increasing global scale, it embraced the explicit approach but did not totally abandon the tacit approach. It frequently used a combination of the two approaches to optimize benefits. For example, Toyota was able to convert the explicit knowledge of its experts by facilitating the interaction of the expert with the learner for a real production problem where the worker could absorb the tacit knowledge by observation. Discussions between employees also facilitated the surfacing of tacit knowledge, which would not have been possible if the company had used only the explicit approach e.g. only the use of manuals or initial training for employees.

**SUGGESTED TEACHING APPROACH:**

The students can also be given a pre-discussion assignment where in they have to go through the case and list down the basic issues that are addressed in the case that need to be discussed in the classroom. The additional readings and references given at the end of the teaching note will help the students to get a good idea about various issues in knowledge management.

The moderator (instructor) can initiate the dialogue with the recent focus on intellectual capital and the emergence of knowledge management as a discipline. The class can be divided into groups. The groups can discuss these issues and the case discussion questions among themselves. The analysis of the discussion questions can be presented by a group, followed by an interactive session. The moderator can lead the discussions and then conclude with a summary of the highlights of the case.
Knowledge Management Practices at Toyota Motors

PROPOSED SESSION PLAN:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction of the case – overview of knowledge management</td>
<td>05 min</td>
</tr>
<tr>
<td>2.</td>
<td>Class discussion to identify the immediate issues of the case</td>
<td>10 min</td>
</tr>
<tr>
<td>3.</td>
<td>Class discussion on the basic issues of the case</td>
<td>10 min</td>
</tr>
<tr>
<td>4.</td>
<td>Class discussion on the key issues of the case</td>
<td>10 min</td>
</tr>
<tr>
<td>5.</td>
<td>Case discussion for question 1</td>
<td>15 min</td>
</tr>
<tr>
<td>6.</td>
<td>Case discussion for question 2</td>
<td>15 min</td>
</tr>
<tr>
<td>7.</td>
<td>Case discussion for question 3</td>
<td>15 min</td>
</tr>
<tr>
<td>9.</td>
<td>Guidance on follow-up assignment questions</td>
<td>05 min</td>
</tr>
<tr>
<td>10.</td>
<td>Wrap-up and Conclusion</td>
<td>05 min</td>
</tr>
<tr>
<td></td>
<td>Total expected session time</td>
<td>90 min</td>
</tr>
</tbody>
</table>

Proposed whiteboard plan

During the case discussion, the whiteboard may be used as depicted below:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Left</td>
<td>Center</td>
<td>Right</td>
</tr>
<tr>
<td>Basic issues</td>
<td>Immediate issues</td>
<td>Highlights</td>
</tr>
</tbody>
</table>

FEEDBACK:

The case was discussed by a group of students at the IBS Centre, Hyderabad, India. The group appreciated the Knowledge Management (KM) practices being followed at Toyota Motors (Toyota). It identified that the internationalization challenges facing KM at Toyota Motors was the immediate issue facing Toyota. The participants pointed out that the handling of human aspects of KM was uniquely brought out through the case. The members of the group were eager to explore practices at other Japanese Automobile companies like Honda. They were keen to precisely identify the reasons for KM not being so successful at other companies when compared with Toyota. The group also discussed at length the role of culture in building KM practices and the Western approach to it. Other features observed to be uniquely captured through the case were the issues of how Toyota solved the free rider problem and implemented the concept of co-optition and shared its knowledge freely with not just its suppliers but also with competitors. The participants also appreciated that the employees at Toyota were internally motivated to follow the company’s KM practices. It was felt that any challenging situations that Toyota faced regarding the transfer of practices at other plants outside Japan could have been added to give a holistic feel to the case.
Suggested Additional Readings & References:

7. Steven Spear and H. Kent Bowen, Decoding the DNA of the Toyota Production System, HBS Working Knowledge, October 12, 1999.
Knowledge Management Practices at Toyota Motors

24. www.kmworld.com
25. www.toyota.com
26. www.gm.com
27. www.daimlerchrysler.com
28. www.jdpower.com
30. www.jama.org
31. www.mckinseyquarterly.com