Toyota Operational Excellence - Management Model

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Abstract— The Japanese Car Industry is growing to take market segment in all regions of the world. The major manufacturers operate on all continents with production facilities spread across the world. They have expanded throughout the past 20 years through a combination of Greenfield Investments, Joint Ventures and Acquisitions. Even though technology and design are still major factors in competitive advantage there is a much greater level of cooperation from the top Japanese manufacturers with European and US firms. Most Japanese automotive firms lean towards a multinational structure, with manufacturing, sales and admin occurring in geographic areas, but usually with Japanese top management brought in from Head Office. The Japanese have famously brought new work practices into the car industry such as quality circles and JIT, which have influenced other commercial institutes. Culture has been a key success factor for many Japanese firms, with a trend towards team working. This has proved extremely successful in manufacturing sectors.

Not all Japanese firms have been pervasive; Nissan has been 'acquired' by Renault structurally. How this will affect the strategy and impact on production and design remains to be seen. As two different organizations, the resulting hybrid will surely have a distinct character. As major player in the industry, Toyota has a large and almost indistinct structure but has been proactive in improving quality, cutting costs and building a team orientated culture. It is committed to improving motivation of the workforce to improve the standard of the product, a truly Japanese work ethic. In truth the Japanese car industry is slowly becoming a global industry of organizations that were once Japanese with headquarters in Japan, but with other functions being carries out around the world. [1]

The purpose of this paper is to examine Toyota Operational Excellence journey, and its success at entering the global marketplace. An environmental study, including the use of a PLEST and SWOT analysis has been done to analyses the situation that is faced by the Toyota as they attempt to gain a greater proportion of the world market. Trade theories' including Vernon's Product Life Cycle and New Trade Theory has been studied to explain why the Toyota has been so successful. This will be coupled with a discussion of the entry strategies Toyota can employ when entering foreign markets such as Licensing and Foreign Direct Investment, along with an assessment of each ones value to Toyota.

A more specific stance will then be taken to assess the actual strategies and structures of the producers and will look at key success factors. A conclusion as to the main determinants of the Toyota's success will finally be formulated. In support of this document it was also considered in the ever more global world to consider the impact of culture upon Toyota and the countries into which it enters. An analysis using Hofstede (1984) will be undertaken to help support the rationale for the producers' success.

Index Terms— Lean Manufacturing, change management, best practices, continuous improvement, empowerment, lean human resource management, standardization, Kanban, JIT, product life cycle, lean product development



1 Introduction

ver since its establishment during the year 1933 as a part of that Toyoda Automatic Loom Works, Toyota has advanced from plain field, by means of several well-known creative lean management principles and techniques. The management approaches include manufacture setup time reduction; decentralizing the accountabilities of recognizing and fixing faulty components to the whole team at the time of assembling; devising Kanban system on which the highly effective Just-In-Time inventory concept greatly depends; resourcefully arranging suppliers by involving them into Toyota's value chain long term association development; forming unique distribution and consumer relation with emphasis on developing long term links with the customers and incorporate their views on quality, prices,

styling and other features into the company's design and manufacturing procedure. Through these distinct lean management concepts Toyota has attained remarkable benefits in manufacturing costs, product quality, and huge range of vehicle types on a restricted range of platforms. Moreover, the company intends to lead the way of mobility, improving lives worldwide with more responsibilities and safest means of moving individuals. Through its commitment towards quality, continuous innovation and value for the planet, Toyota aims to go beyond the expectations and be admired with a smile. The company intends to meet its challenging goals through engaging the passion and talent of individuals, who believe there is at all times a better way

Even though, Toyota had unsuccessful experiences when

establishing an independent manufacturing subsidiary within California with the aim to get hold of the small vehicle market within the USA, the firm improved in quality to match the local conditions and in effect made a triumphal turnaround within the United States market during the late 1960s [3]. Additionally, following the rise in oil price unpredictably increased the demand for Toyota's vehicles that are fuel saving and light. Since that time, the global exporting trade of Toyota has seen a sound growth. To deal with the import barriers like local content rules and import quotas, the company formed a 50/50 joint venture i.e. New United Motor Manufacturing, Inc. with General Motor within USA during 1983. It also formed a wholly owned production unit in the UK during 1989 and another in France during 1997. Toyota also formed a 50/50 joint venture along with French automaker Peugeot within the Czech Republic during 2002. Moreover, bold strides have also been taking place in China; at present the globe's fastest growing vehicle market. Currently, Toyota has turned out to be the biggest car producer worldwide offering employment opportunities to over 320,808 individuals. As of 2010, the company had 52 production units located in 26 distinct countries apart from in Japan, about 12 product designs as well as research and development units in 7 nations. [3]

2 TOYOTA INDUSTRIAL ENVIRONMENT BEST PRACTICES

Toyota has big business throughout the world, and the environment in which it takes place is ever changing, below is a short synopsis of both a full PLEST and SWOT analysis. The PLEST has been piloted in relation to the industry environment as a whole and also with respect to the Japanese environment, whereas the SWOT is specific to Toyota and been generated in the Toyota Production System. [1]

2.1 PLEST Analysis

Toyota has seen various forms of barriers restricting both entry from new competitors into the industry and also trade between countries, such as tariffs and duties, which have in times past slowed down Toyota. It is at risk to many of the economic dilemmas that other industries experience such as recession and high inflation, but also has to more specific problems such as oil crisis. [2] With Europe and the United States being large markets, cultural concerns become evident; consumer tastes and management styles vary throughout the world and must consequently be considered by Toyota when they enter markets. Another important factor is technology; which is extremely important in the automobile industry, many of the competitors are highly technologically innovative. An analysis of these factors can be viewed briefly below.

Table 1: Brief PIEST Analysis of Automotive Industry

Political-Legal

- · Host governments may protect infant/own industries
- Barriers to trade such as tariffs, making it cheaper to buy home country's cars i.e. more
 expensive to buy Toyota.

Economic

- Price of oil (which is ever-rising) may impact how likely people are to buy new cars/drive at all
- Low growth in GDP in several of manufacturers target markets
- High cost of capital and resources and instability of Yen
- The car market formed by Japan, the United States and Europe has matured and competition
 has become increasingly intense

Socio-Cultural

- Concerns about the environment may be a threat as people may be more aware about fuelefficiency and more environmentally friendly cars (lower emissions)
- Cultural differences in management styles and other areas
- · Japanese team working

Technological

- Better public transport systems may be a threat to private transport as a whole
- Automotive industry is technology driven
- Need to safeguard some technologies and intellectual property which affects manufacturer's entry strategies.

Note: Above Analysis done for research purpose

2.2 SWOT Analysis

Toyota has achieved a high market share of the world's automotive industry, and this is predominantly down to the fact that Toyota's production techniques are as good as any in the world. [16]

Table 2: Brief SWOT Analysis of Toyota

Strengths

- Reputation for quality and reliability
- Innovative Culture
- · Strong brand portfolio, Brand reputation valued at \$30 billion
- The leader in "green" cars development

Weaknesses

- Has "uninteresting" car designs
- Reliance on imports may affect distribution
- Large recalls
- Weak presence in the emerging markets

Opportunities

- Opportunity to develop the diesel market
- Relaxing entry barriers is opening up more markets for entry
- Positive attitude towards "green" vehicles
- Growth through acquisitions

Threats

- US and European rivals copying business models etc
- Environmental awareness of consumers may in time reduce demand for new cars.
- New emission standards
- Rising raw material prices
- Natural disasters
- Appreciating yen exchange rate

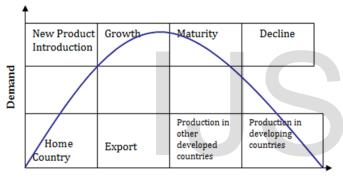
Note: Above Analysis done for research purpose

In fact TPS has been set as a standard procedures or best practices in service and manufacturing sectors. Toyota has struggled however, to really become dominant in Europe, and have even had their designs branded as "uninteresting". The relaxation of legislation and trade barriers has and indeed will allow Toyota to enter more markets more easily than was previously possible. Of course the firm must beware of competitors attempting to imitate their vehicles, after all this is how the Japanese entered the market initially. They must also take care

not to ignore the growing environmental awareness of consumers and keep up with fashion. [4]

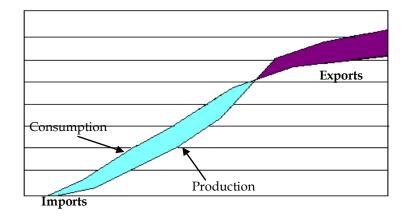
Toyota started in 1933 as a division of Toyoda Automatic Loom Works devoted to the production of automobiles under the direction of the founder's son, Kiichiro Toyoda. It sold around 8 million units globally in 2008; Toyota's sales surpassed General Motors, making Toyota number .one in the world. As this market expands, Toyota concentrates more on a close relationship with its customers rather than viewing size as key to survival. [2] Raymond Vernon's, the product lifecycle theory searched for an explanation why many new products were developed and sold first in the U.S during the 20th century. However, as demand increased for the products, competitors entered the market and the original firm was forced to try and cut costs. Together with demand for the product increasing abroad, this often meant the firm would set up production abroad, taking advantages of factors such as lower labour costs. In years to follow, the U.S would end up importing the very product it invented. [6]





Time and Location

This theory in terms of the automobile industry becomes a well proven practice in automotive, aerospace, healthcare and other sectors. The US were firm leaders of the market until the Japanese adapted ideas from the British and American car producers in the 1960's, and then offered a superior yet cheaper product. This is why Japan used to import so many automobiles yet now has more of an advantage on exportation. The graph below shows a rough portrayal for developed country, such as Japan, on how, regarding a new product, consumption and production rates develop. [8]



Within the automobile industry, absolute advantage was evident through the US being the innovators of the product lines, yet Japan, with collectivism and a manufacturing focussed employee, succeeded to improve on American techniques. This is why Japan has such a significant share of the market. The new trade theory emerged from a number of economists during the 1970s. [7] It argues that specialisation in the production and export of certain goods is not due to underlying differences in factor endowment but because the world market only has the capacity to support a limited number of firms in some industries. As Toyota moved into the automobile market internationally, quick adaptations of strategy meant that they were successful as early entrants. Economies of scale and learning economies are the first-mover advantages that discourage new entrants into the market, after Toyotas impressive entrance. Regarding competitive advantage, this theory looks at the four characteristics in figure below. Porter states that these characteristics of a nation mould the environment in which local firms compete. They may either promote or impede the notion of competitive advantage. As illustration in figure 5 [1,2]

Figure 3: Porter's Diamond Theory

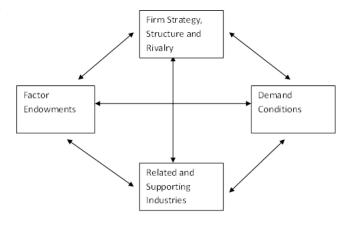


Figure 2: Advanced Countries Product Life Cycle

Table 3: Porter's Theory in Toyota



Note: Above Analysis done for research purpose

3 Cross-Cultural Differences and Styles of Management

Corporate culture can be said that collective behaviour and assumptions that are taught to all the organizational members and this particular culture has an effect on the people and groups, stakeholders etc. it is important for all companies developing a corporate culture to bind the organization, its philosophy and the employees together. Toyota is no exception. As Toyota is a very big company and they keep expanding internationally. [9] They set up their units and headquarters in different parts of the world. So it is important for the company to have an in-depth understanding of the world cultures. According to Hofstede (1984) Culture is "the collective programming of the mind, which distinguishes the members of one category of people from another". As we can see from Figure 8.1 there are several determinants to what culture is and how norms and value systems are developed. Hofstede, through his research into culture, developed his 5 indices to define culture. The key points are outlined below: [1]

Figure 4: Culture Categorization

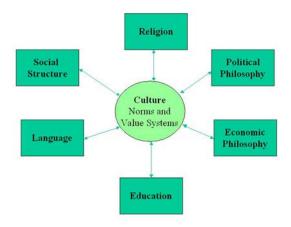
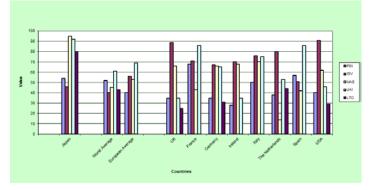


Figure 5: Brief SWOT Analysis of Hofstede's Culture Dimensions



- a. Power Distance Index (PDI) focuses on the degree of equality, or inequality, between people in the country's society. [11]
- Individualism (IDV) focuses on the degree the society reinforces individual or collective achievement and interpersonal relationships.
- c. Masculinity (MAS) focuses on the degree the society reinforces, or does not reinforce, the traditional masculine work role model of male achievement, control, and power. [10]
- d. Uncertainty Avoidance Index (UAI) focuses on the level of tolerance for uncertainty and ambiguity within the society i.e. unstructured situations.
- e. Long-Term Orientation (LTO) focuses on the degree the society embraces, or does not embrace long-term devotion to traditional, forward thinking values.

4 INTERNATIONAL BUSINESS STRATEGY

Toyotas production has declined in its home country over the past ten years; this is due to the deliberate decision by Japanese manufacturers to invest in facilities closer to their main markets. Toyota has become prominent in many countries, automobile industries over the past 20 years. In this section the potential methods of market entry will be discussed and there appropriateness examined, in relation to the automobile industry. [17]

4.1 Foreign Direct Investment [FDI]

The most common form of market entry for Toyota is Foreign Direct Investment (FDI), where a company invests directly in facilities within a foreign country to produce or market a product. In the automobile industry this is considered the most appropriate method of entering a foreign

1. Wholly Owned Subsidiary: This is where a firm owns 100% of the operations within the country it is servicing. This could be a Greenfield Investment; where a firm is established from its foundation to full working capacity, by the investor. The second way is acquisition where a firm buys an existing firm within the host country. In terms of Toyota both advantages and disadvantages. (Stockton et al , 2007)

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ISSN 2229-5518

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| Advantages and Disadvantages and Acquisition Advantages In a Greenfield Investment higher control is held over the firm. This is important for Toyota as they may technological advantages that they wish to keep secret from competition. Less threat of culture clashes due to building organisation from scratch. | Disadvantages Slower to establish, offering competition chance to enter and gain recognition through | Resource Transfer Effects: Technology, Capital, Management Employment Effects: Direct, Indirect Greater variety of products for consumers Increasing productivity and innovation Capital inflows Encouraged economic growth | Benefits: Credit to capital account due to profits Increased domestic employment "Reverse Resource Effects" |
|---|---|---|--|
| Acquisitions are quick to execute and the firm can establish a rapid presence within a market. Acquisitions are a little less risky than a Greenfield investment, as the investor buys both tangible and intangible assets such as: Buildings and managers knowledge of local business etc. Note: Above Analysis dor | clash of the company cultures. According to Hill (2000) this scenario occurred at Daimler Chrysler. Realising the synergies with the acquired firm may take longer than expected due to poor pre-acquisition analysis for example. | Costs: Often too strong competition for local firms in developing countries Detrimental to infant organisations Repatriated profits act as debit on a Host's capital account Loss of sovereignty due to power on MNE | Outflow of capital for initial investment Reduced employment levels due to production abroad Costs of exporting products from Host country to market etc |

- 2. Alternatively a firm may enter into a joint venture. Again, there are two types that this can take, contractual and equity. [1]
- 2.1 Contractual ventures as the name implies are based on contracts, however, these may be unwise in developing economies since such countries seldom have the legal foundations to deal with such issues, and therefore are less than reliable.
- 2.2 Equity joint ventures are carried out with the investing company purchasing shares in foreign companies.
- 3. Horizontal: Here, Toyota would invest in a firm within the same industry as domestic production, but in a different country. For instance Toyota may invest in Citroen. [16]
- Vertical: In this case a company will buy into a firm 4. in a different industry, in another country. This allows the investing company to broaden its product range and diversify. It can also help spread risk. This can be further broken down to:
- Backward: Here, a company from Japan would invest in a firm, in a host country, which would be suitable as a supplier for the components used in car produc-
- 4.2 Forward. This is the reverse of backward investment, where the car producer may invest in a dealership, thus providing an outlet for the company's cars in a foreign country.

4.2 Exporting

Advantages

Host

A strategy of exporting vehicles to other countries is another means of entering new markets. Toyota attempted to do in order to enter the American car industry for example; however this method was somewhat unsuccessful, due to the restrictions imposed. [14]

Table 6: Advantages and Disadvantages of Exporting

| Advantages | Disadvainages | |
|---|--|--|
| It enables the firm to avoid the expenditure concerned with establishing the manufacturing operations within the Host country By exporting the firm can gain experience of the market leading to experience curve benefits The firm can also benefit from | By exporting firms may miss out on location specific advantages e.g. low cost labour The costs of transportation may well be very high for the exporting firm Barriers to entry by means of tariff may prevent exportation to certain countries e.g. America imposed | |
| location economies If production is centralised in one country, the firm may be able to exploit economies of scale through bulk buying of supplies etc | tariffs against Japanese car manufacturers to prevent them exporting to that market thus preventing competition • The agents in acting on behalf of the exporting firm within the host country may have divided loyalties and thus not market the product as desired | |

Disadvantages

Note: Above Analysis done for research purpose

4.3 Licensing

Licensing tends to be more suitable for intangibles; a licensor grants the licensee the permission to use the intangible for example the brand name for a set length of time in exchange for royalty payments. It may be appropriate if a firm wishes to license its technology involved in car production for example. This entry form has benefits and costs as well. [13]

Table 5: Advantages and Benefits if FDT for Host and Home Countries

Table 7: Advantages and Disadvantages of Licencing

Int€

- The licensee inputs the capital, so the licensor suffers few costs and risks of development.
- Licensing is a way to negate investment barriers, set against a

This method allows for low control over manufacturing, strategy and also marketing for the licensor, therefore the potential for experience curve benefits is minimised.

The company will also be restricted due to the inability to use profits made by the licensee for other business areas.

Note: Above Analysis done for research purpose

Toyotas strategy is based on internal growth to reach critical mass. Toyota has been very aggressive: re-entering Formula One with a wholly-built car (building worldwide brand awareness), investing heavily in Europe (where Toyota was not a leader), and consolidation of leadership in other areas. The organisation has developed own-facilities (as in India) or alliances to share the cost of production. This enables better understanding of local markets, which in turn makes it possible for Toyota to serve each market's specific tastes and preferences. Consequently, Toyota is now one of the most globalized car manufacturers in the world. [12]

BEST PRACTICES IN HUMAN RESOURCE MANAGEMENT

Toyota's global competitive advantage is based on a corporate philosophy known as the Toyota Production System. The system depends in part on a Human Resources Management policy that stimulates employee creativity, empowerment, involvement and loyalty but also on a highly efficient network of suppliers and components manufacturers.

Employee Empowerment: Average Annual Results

- More than 700,000 improvement suggestions were submitted by Toyota's employees.
- That is an average of over 10 improvement suggesb. tions per employee per year.
- Over 99% of suggestions were implemented.

5.1 Corporate Culture

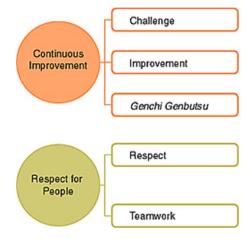
The fundamental reason for Toyota's success in the global marketplace lies in its corporate philosophy – the set of rules and attitudes that govern the use of its resources. Toyota have successfully penetrated global markets and established a world-wide presence by virtue of its productivity. The company's approach to both product development and distribution is very consumer-friendly and market-driven. Toyota's philosophy of empowering its workers is the centrepiece of a human resources management system that fosters creativity, continuous improvement, and innovation by encouraging employee participation and that likewise engenders high levels of employee loyalty. Knowing that a workplace with high morale and job satisfaction is more likely to produce reliable, highquality products at affordable prices, Toyota have institutionalized many successful workforce practices. Toyota has done so not only in its own plants but also in supplier plants those were experiencing problems. [15]

Although many car manufacturers have earned a reputation

for building high-quality cars, they have been unable to overcome Toyota's advantages in human resource management, supplier networks and distribution systems in the highly competitive car market. Much of Toyota's success in the world markets is attributed directly to the synergistic performance of its policies in human resources management and supply-chain networks.

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Figure 5: Toyota Lean Key Principles [14]



5.2 Global Forces at Toyota

5.2.1 How Toyota motivates its workers?

- Agreed to guarantee lifetime employment for employees
- b. Developed a system of internal promotion
- i. Enabled workers to rise within the hierarchy
- ii. Casual workers could receive permanent contracts
- iii. Could go on to become team leaders, foremen and even managers
 - iv. Worker can become a sort of minor manager.
- Provides a pay scale based on three components of company profitability
 - i. One bonus based on seniority - not job classification
 - ii. Another bonus payment related to team's performance
 - iii. Additional bonus payment allocated to worker's merit
- d) Wage would increase from 85% to 115% from amount allocated
- In return, Toyota employees are constantly committed to making improvements rather than just responding to problem

5.2. Relationship

- Establishing mutual trust between management and labourers to prevent slacking
 - Goal was to improve all parts of production and quality i.
 - Unit costs, Speed of assembly, delivery schedule, etc. ii.
 - b. Good relationship and team work resulted in
 - i. Devoted, enthusiastic, conscientious employees
 - ii. Increased efficiency and a higher level of production

CONCLUSION

To conclude, it can be clearly stated that Toyota has gained high acceptance and recognition all over the world. The paper effectively highlighted the concept of international business management at Toyota taking in international business encompassing International political economy of International trade, The national business systems, International business strategy and lastly, International business operations and entry strategy. International Business Management is considered as an important factor for any company intending to expand in international markets. Subsequent to properly scale the pressures for price reduction and local receptiveness, companies need to finally locate their international business strategies. With its transnational approach, [18] Toyota has been very successful in becoming the leading carmaker within the world. Nevertheless, the recent crisis imposed high pressure on the Toyota marketplace image, whereas the continuing financial crisis ever since the closing stages of 2008 has been signifying a hard external atmosphere to Toyota. In reality, more challenges are there, since the US big giants are narrowing the cost and the quality gap with Toyota. The South Korean rivals such as Hyundai-Kia has been expanding and encroaching marketplace share from the bigger companies with benefits of low cost, fuel-effectiveness, generous warranties and nice design. While, the opportunities are everywhere, with expanding market within emerging nations such as India and China, increasing global demand for more atmosphere friendly automobiles that are hybrid and more fuel-efficient. Moving ahead, Toyota began entering the foreign marketplace with exporting, lowest risk and fastest mode to launch their products and services to broad markets and generate brand recognition. Nevertheless, with issues like import restriction rules, high transaction costs and exchange rate volatility, the company changed their entry approaches to wholly-owned subsidiary, Joint venture and FDI.

ACKNOWLEDGMENT

Author would like to thank San Diego State University for giving the opportunity to investigate the operational business aspects for Toyota.

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