

General Motors Operations Analysis

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### Operations Analysis of General Motors

General Motors (GM) is a symbol of the American automotive industry and culture. It is known for an exceptional quality of manufactured automobiles as well as a high level of competitiveness and significant impact on both national and global vehicle markets. GM was founded in 1908. Since then, it has expanded operations to more than 30 countries around the globe. Nowadays, it employs more than 250,000 workers. What made the company such a successful and influential manufacturer is the focus on innovating its processes and operations and the stress on reducing the negative impact on the natural environment. As a result, there are no objectives that GM could not reach and customer needs it could not satisfy. Therefore, its experience can be used as a guideline for both competitors and new companies regardless of the industry and region of operation.

#### **Specificities of General Motors Operations Management**

Operations are at the heart of any company's performance and success. In this way, the only strategy to become productive is to develop effective operations management. In the case of General Motors, there are several main characteristics that make its operations management remarkable and efficient. First and foremost, GM senior management recognizes the criticality of constant improvement of operations. As a result, the stress is laid on the continuous introduction of the newest technologies and the deployment of the so-called green technologies in achieving operational performance objectives. In addition, special attention is paid to cooperating with suppliers that share the same philosophy. Another peculiarity of GM operations management is the focus on employees' safety reached by high levels of processes automation. Finally, the company is known for strict planning, controlling,

and monitoring systems, which make the conducted operations defect-free and efficient.

### **GM Transformation Processes**

The key to General Motors' success is the stress on transformation processes as the foundation of performance improvements. This objective is commonly achieved by introducing innovations and modifying processes based on the newest technologies. The most outstanding example of such transformations is the implementation of smart bolts at one of its factories in the USA. The technology is special because it helps to detect slightest defects during all stages of manufacturing automobiles (Paula, 2013). The so-called track-and-trace technology collects all information regarding defects so that all of them can be easily removed in case of necessity.

### **Six Sigma and Lean Management as the Foundation of Process Improvement**

Six Sigma is a generally acknowledged tool for operational performance improvement. It is based on five interrelated stages. In the case of GM, the method is deployed to eliminate defects of manufactured automobiles. The whole process of applying the technique is as follows:

1. *Define*: detect the problem (ignition defects);
2. *Measure*: collect data necessary for determining the main cause of the problem (failing to control the work of assembly lines);
3. *Analyze*: identify ways to eliminate the defect (introducing Speak Up for Safety initiative);
4. *Improve*: transform currently deployed processes (implementation of quality control measures);

5. *Control*: constant updates on the defect (launching website aimed at collecting customer feedback related to ignition defects).

Initially, the lean philosophy was designed by Toyota. However, it has become popular and widely used by companies that operate in different industries and regions. The foundation of the approach is the use and allocation of currently available resources more effectively, which helps to operate successfully in the case of lacking them. In the history of GM, there was only one experience of using lean techniques – NUMMI plant (Hozak, 2012). It was a joint venture with Toyota. As for ignoring lean management, senior management explains its position by having enough resources (Carraciolo, 2014). From this perspective, there is no need for developing strategies for re-allocating them.

### **Project Management Strategies**

In General Motors, project management is a combination of three dimensions: projects themselves, planning, and controlling initiatives. The first dimension is associated with the constant improvement of processes, thus making projects more innovative. In this way, preference is given to IT and R&D projects. Speaking of planning and controlling initiatives, they are based on training efforts, leadership, meeting internal and global standards of operations, and attention to cooperation with high-skilled employees (Iamratanakul, 2013).

### **GM Supply Chain Management**

In General Motors, the main focus is made on satisfying needs of customers. In most cases, these needs are associated with receiving the final good of an exceptional quality as soon as possible. In order to meet such customer requirements, GM paid special attention to developing effective supply chain management in order to speed up all necessary processes. Nowadays, the stress is

laid on compliance with global standards of safe automobile manufacturing (General Motors, 2016). As for the supply chain itself, it involves the following elements: raw materials suppliers, contributors (investors), logistics system (dealers), and web-enabled systems (Yu & Bauer, 2014). See Figure 1 below for details.

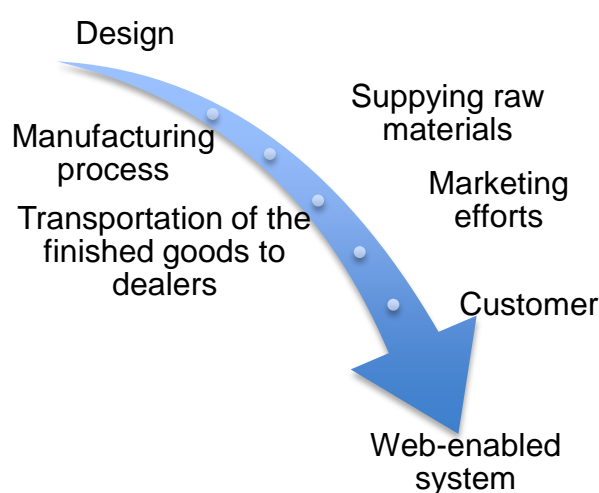


Figure 1. GM supply chain

### **Capacity, Scheduling, And Location Planning at General Motors**

Planning is another core factor leading to the success of General Motors. It can be explained by the fact that the company is significantly affected by the developments in the global economic environment – both positive and negative. The foundation of planning is the estimation of potential output and demand as well as major market fluctuations. Based on them, all planning activities are conducted. Therefore, capacity and location planning is connected to the forecasted changes in demand. As for scheduling, it is associated with internal planning and allocation of human resources. The main specificity is the development of online schedules available to all employees.

### **General Motors SWOT analysis**

SWOT analysis – the estimation of strength (S), weaknesses (W), threats (T), and opportunities (O) – is an effective tool for assessing and improving any company's operational performance. Speaking of GM, it is special because all of its peculiarities derive from the position in the global automobile market, which makes the company both powerful and vulnerable. Detailed SWOT analysis can be found in Table 1 below.

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>• Rich experience</li> <li>• Location of plants around the globe</li> <li>• Location of plants close to the suppliers of raw materials</li> <li>• Location of plants in places with the cheapest workforce and well-developed infrastructure</li> <li>• Official dealers in more than 120 countries all over the globe</li> <li>• Strong branding</li> <li>• Customer-centrism</li> <li>• Constant operations improvement by introducing the newest technologies</li> <li>• High quality of manufactured automobiles</li> </ul>	<ul style="list-style-type: none"> <li>• The use of out-of-date and old equipment at some plants, which results in the commonality of defects</li> <li>• Transition to the newest and environmentally friendly technologies is time- and resource-consuming</li> <li>• Low financial performance</li> <li>• The quality of the final product is lower than that offered by other leaders in the automotive industry</li> </ul>
Threats	Opportunities
<ul style="list-style-type: none"> <li>• Competition in the global market</li> <li>• Increasing environmental concerns</li> <li>• Transition towards green management</li> <li>• Significant impact of fuel prices on sales and manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>• The growing presence in India and China</li> <li>• Increasing capacities in the developing regions</li> <li>• Growing demand for hybrid vehicles and light trucks (both are present in the company's model range)</li> </ul>

Table 1. GM SWOT analysis

### **Conclusion**

Nowadays, General Motors' operations management is efficient. It is associated with the fact that the company pays specific attention to the improvement of operational performance. Therefore, all techniques that were deployed were effective and benefited GM. Still, it is critical to note that their effectiveness is based on thorough and detailed planning. All in all, regardless of some deficiencies and weaknesses, the company is powerful, and it can become even more influential in case of transforming its threats into opportunities. This step would make General Motors more competitive and help to restore leading positions in the global automotive market.

### **Recommendations**

Regardless of being an influential company, there are still some gaps to fill. It can be achieved by following some recommendations:

- Further focus on innovations. For instance, replace zinc phosphate with thin film pretreatment system when applying paint to decrease the volume of natural gas in vehicle manufacturing and to make the process more environmentally friendly;
- Work on designing a balanced scorecard, which is ignored. It should incorporate such constituents as learning and growth, customers, financial performance, and internal business processes. It is necessary for analyzing the company's effectiveness, thus finding ways to improve performance;
- Lay stress on ISO 14000 certifications due to the increasing popularity of green management;
- Continue collecting feedback from customers in order to improve customer satisfaction and obtain data regarding the most critical defects of the manufactured automobiles (for instance, make websites multilingual);



- Introduce lean management principles, recollecting the successful experience of NUMMI plant.
- Apply Goldratt's critical chain to improving project management: lay the major stress on creating multicultural teams.
- Introduce web-based systems for sharing information and knowledge.

## References

- Carraciolo, S. (2014, November 27). *Q&A: General Motors Brazil*. Retrieved from <http://planet-lean.com/interview-how-general-motors-do-brasil-embraced-lean-management-principles>
- General Motors. (2016). *Supply chain responsibility*. Retrieved from <https://www.gm.com/supply-chain-responsibility.html>
- Hozak, K. (2012, August 27). *Lean and Six Sigma create valuable synergies for RFID adopters*. Retrieved from <http://www.rfidjournal.com/articles/view?9823/>
- Iamratanakul, S. (2013). *Project management in Asian car companies*. Retrieved from [http://www.toknowpress.net/ISBN/978-961-6914-07-9/papers/S1\\_1-16.pdf](http://www.toknowpress.net/ISBN/978-961-6914-07-9/papers/S1_1-16.pdf)
- Paula, M. (2013). *This bolt is the key to GM's high-tech assembly line*. Retrieved from <http://www.popularmechanics.com/cars/a9959/this-bolt-is-the-key-to-gms-high-tech-assembly-line-16324897/>
- Yu, Q., & Bauer, G. (2014). *General Motors*. Retrieved from <https://scmmsublogs.wordpress.com/scm-strategies/general-motors-supply-chain/>