# UKS31374

*by* Uks31374 Uks31374

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# QUALITY MANAGEMENT: ASSIGNMENT–PART 2

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## Introduction

The business functions such as manufacturing, supply chain management, and assembly need to be thoroughly reviewed and quality checked to assist sustainable business proceedings. The objective of the present study is to evaluate the possible quality management tools and techniques for Jaguar Land Rover and suggest one suitable strategy. The quality management aspects of the business are already strong, but the study looks to find ways to make it even more sustainable for future operations as the electrification of vehicles is a major trend in the automobile space.

## Task 1: Critical evaluation of the quality management tools and techniques for Jaguar Land Rover

There are a handful of quality management tools available for application within Jaguar Land Rover to add merit to the products and manufacturing processes. As mentioned by Abbas (2020), quality management helps a business become sustainable and construct the environmental, social, and governance framework effectively. The Quality management tools also assure a less disruptive operational flow in the business. Hence, investments in quality management tools can be made to secure a better future for the company in a competitive business field such as the automobile industry. As per present reports, the Charge+ programme is launched by the company as a measure of ensuring that responsible spending is done to make raw material purchases efficient, improve budgeting tactics, and save time to maximise the value for the business stakeholders (Jaguar Land Rover, 2023). On this note, the collaborations made by a business to foster a digital culture in the business are also representative of the fact that it is willing to put quality and research and development as core business functions to gain sustainable competitive advantage in a saturated market. As an example, National Automotive Innovation Centre (NAIC), near Warwick University invites the business to do research with an ample degree of data and tie up with high-quality technology units and suppliers. This tends to accelerate the quality control and innovation measures in the business.

The planning of quality measures, quality assurance, continuous improvement, and internal control are variables that shape a defined quality management protocol for a business. The autonomous, connected and shared mobility aspects of the business offer credibility to stay quality driven for lengthier operational periods. As stated by Fattoruso, Barbati, Ishizaka and Squillante (2022), certain aspects of quality management enable to structure of the quality standards in a business seamlessly. The inclusion of key performance indicators (KPIs) in automobile companies helps the auditing process and ensures better internal control in the business. Ethical sourcing of materials from the suppliers stands as one of the major KPIs

required to be validated by quality management standards. As witnessed in the case of Jaguar Land Rover, 75% of the suppliers that work with the company fall under the Achilles data management system, thereby referring to the suppliers as authentic and ethical. Additionally, the engineering headquarter in Gaydon UK adds value to the operations of the automobile business as it could easily use the advanced facilities over there to optimise the assembly process, save overhead costs, and automate different aspects of the value chain in the business. As discussed by Suárez-Barraza and Rodríguez-González (2019), Pareto charts and fishbone diagrams are known as popular quality management tools in projects and businesses that help add a merit-driven workflow. This kind of tool allows businesses to quickly establish the cause-and-effect relationship between the variables that remain part of the business operations. In an attempt to solve problems, and predict better solutions, these quality management tools are helpful. As evident from the case of Jaguar Land Rover, the possible application of these quality management tools can assist in forecasting the breakdown of operations in the company and thereafter take initiatives to assure that those factors causing the event are dealt with effectively.

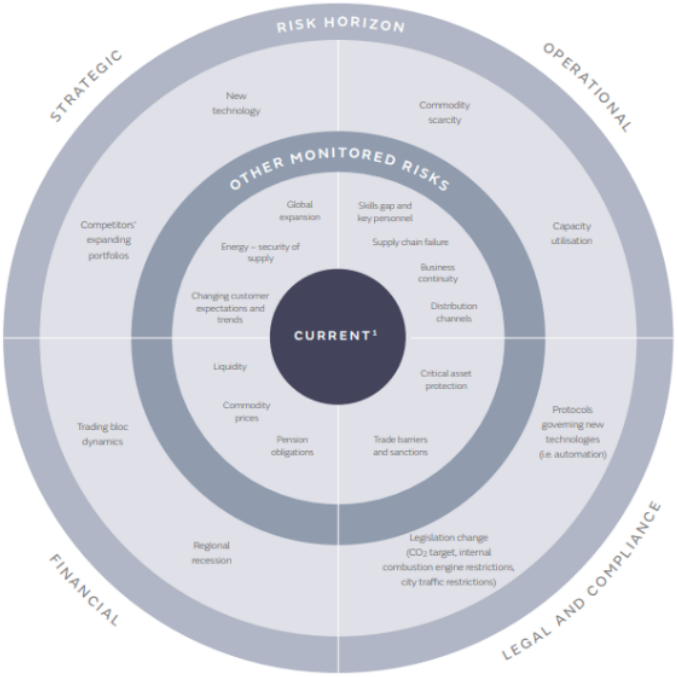


**Figure 1: Strategic measures in Jaguar Land Rover**

(Source: Jaguar Land Rover, 2021)

The circular economy concept of reducing, recycling, and reusing supports the quality management function within the business as it helps promote sustainable goals in the business in the long run. As an example, the company achieved a 29% reduction in the global warming potential in 2021 of the global vehicle fleet over the product plan life cycle as compared to the year 2007. Hence, quantitative evaluation of the operational data remains key for the business to become sustainable and drive meritorious work in the automobile space. Reliance on quantitative quality management tools assures a business to prioritise the quality variables in a business setting. As viewed by Zonnenshain and Kenett (2020), Statistical process control (SPC) is a quality management tool that aids in the process of maximising productivity, improving resource utilisation, increasing operational efficiency, decreasing manual inspections, reducing costs, and extensive analytical reporting. As witnessed in the case of Jaguar Land Rover, the use of SPC or similar other statistical tools and process flowcharts should help visualise the progress made by the company to manage adequate quality management standards. The technological, financial, and human resource access to a large degree offers the business plenty of flexibility to select a quality management tool and apply it according to its merit to maximise the business profits and meet sustainable objectives.

The strategic actions exercised by the company are mostly successful due to the systematic nature of the plans themselves. As an example, the Quality pillar helped in developing new processes and governance to negate quality problems and warranty spending, which has resulted in the enhancement of customer satisfaction, and reduced warranty spending to £608 per vehicle. Therefore, the total quality management (TQM) theme of assuring continuous improvements for the customers invites newer quality management tools to be deployed across business functions in the company. As viewed by Tubaro and Casilli (2019), quality management with the application of different techniques allows for evidence-based decision-making in businesses. On this note, quality management techniques help the workforce recognise failures in the business and commit extensively towards making faulty processes better. Therefore, problem-solving is an aspect that needs to be entertained in a business to execute quality management with efficiency. As stated by Malega, Daneshjo, Rudy and Drábik (2021), Plan-do-check-act (PDCA) cycle or Deming cycle is a continuous improvement cycle for modern-day businesses. This is supported by the total quality management principles to ensure that new project design improvements, betterment of processes, and verification of root causes for problems are assessed in a better way via the PDCA cycle. As evident from the case of Jaguar Land Rover, PDCA could be seen as a change management driver in the business

due to its application for planning new activities in the business and enhancing the standards of existing processes.

Define, Measure, Analyse, Improve, and Control collectively forms the DMAIC methodology. As discussed by Chaurasia, Garg and Agarwal (2019), DMAIC is recognised to be the data-driven improvement methodology placed within Six Sigma. The tool offers a wide array of benefits for businesses such as offering a greater level of efficiency to manage existing business processes. It helps detect the improvement areas in a business process, which could be essential for a better workflow for an automobile business. As an example, cost management stands out as a core concern for the business going forward, as it is already suffering from massive debt levels. However, to resolve this issue, the company has made attempts to follow a lean workforce. As mentioned by Rifqi, Zamma, Souda and Hansali (2021), DMAIC helps promote the team and organisational communication. As evident from the case of Jaguar Land Rover, training the employees has become easier in the current period for the company as the presence of the Agile Hub helped facilitated training actions with minimal disruptions.

**Task 2: Suitable quality management tool for problem-solving in Jaguar Land Rover**

DMAIC is proposed as the recommended quality management tool for the company as it shares manifold benefits. The quality, product life cycle, and customer satisfaction are positively influenced by DMAIC methodology as it helps a business take a data-driven approach to become resilient against business risks and deliver quality services. As stated by Godina, Silva, and Espadinha-Cruz (2021), several problems in the automobile business could be poor tracking, inefficient data management tools, and lack of automation. Each of these problems if present in an automobile business can be tracked with the DMAIC methodology. The define phase within DMAIC helps recognise the problem a business needs to address. As witnessed from the case of Jaguar Land Rover, this problem is the rising cost of production as a result of global semiconductor shortage and higher overhead costs due to the excessive workforce engaged at work.

The core business of Jaguar Land Rover is to manufacture luxury SUVs and electrify the future iterations of these vehicles. As discussed by Selvaraj (2021), capturing knowledge from the business processes is made easier with the presence of DMAIC methodology in a business. The measure phase within DMAIC tends to indicate the need for collecting data in regard to the defined problem to make informed decisions in the business. As evident from the case of Jaguar Land Rover, in an attempt to measure the causing problem it can make use of some additional tools alongside DMAIC to visualise the variables impacting business growth and sustainability. As mentioned by da Silva, Cabeça, Barbosa and Shiki (2021), Failure mode and

effects analysis (FMEA), and root cause analysis (RCA) could be applied by the businesses to determine the possible failure occurrence in any of the products, and processes. As witnessed in the case of Jaguar Land Rover, the measured causes for the problems could then be analysed with the RCA effectively. As viewed by Yadav, Gahlot, Kaswan, Rathi and Singh (2022), RCA helps in quickly identifying the problem and sharing mitigation measures instantly to avoid the causes from making widespread disruptions in operations. On this note, the company would need to use RCA to recognise the pattern of budgeting errors and make spending better along with reduction of the workforce to use digital solutions on a greater level and sustain quality. Apart from this, the DMAIC methodology would allow the company to document the problem identification process thoroughly, which would help find solutions for similar issues in a better manner.

The improvement phase within the DMAIC methodology suggests making changes in the ways by which a deal with the business functions that are scrutinised to be a cause of failure in the business. In this, the forecast of poor cost handling and distribution came across to be the central cause of problems, as company profits have not reached predictions, even after revamping the manufacturing processes. Digital transformation to a large extent fosters the sense of using modern tools and techniques in an attempt to execute actions with better time management and gain a higher success rate. As an example, the InDigital platform is an effort made from the end of the automotive business as part of the REFOCUS plans back in April 2021. Within a year, the business manages to transform into a digital centre of excellence, at the heart of Refocus. The InDigital platform as of the present day is also backed by 250 specialists that seem to handle data analytics, data science, data engineering and intelligent automation with flexibility and add value to the business. As stated by Knop (2022), digital technological tools and big data analytics assures businesses of dealing with business issues effectively. As evident from the case of Jaguar Land Rover, the InDigital platform is one of the probable solutions to isolate the issue of high operational costs as better financial forecasting could be done with it. On the other end, the company is also making efforts to optimise the spending in the business as evidenced from the Charge+ programme.

The control phase within DMAIC addresses the need for a definitive solution that would permanently neutralise the threats caused by the problems. As in this case, the possible threats remain to be poor operational cost management, rising debts, and reduced profit shares. As discussed by Despinoski (2020), systematic planning needs to be done with the full confidence of the business investors to promote solutions for the betterment of business activities. The Charge+ programme in the company is a part of the REFOCUS strategy that should help take

concrete actions against poor spending. The company has the utmost shareholder confidence in the act of reducing the employee base in an attempt to pave way for a higher level of automation across the manufacturing plants. On the other end, the Agile methodology requires the company to be flexible with the resources, Hence, the process of executing cost-cutting measures in the workforce and shifting the resources towards research and development should bring better profit margins for the business in the future. As witnessed in the case of Jaguar Land Rover, the existence of the agile methodology in the business is also another reason to consider the DMAIC methodology as both could work in a hybridised state to offer better quality control over the project actions in the business and overall operations. Furthermore, the planning possibilities for quality management measures seem to accelerate with the application of the DMAIC methodology. The structure of the business in many ways helps it find better compatibility with the DMAIC methodology.

**Conclusion**

The current findings help infer that Jaguar Land Rover could improve the quality management standards in the business with the inclusion of dedicated quality management tools. Among the many possible tools such as the PDCA, Pareto chart, fishbone diagram, and DMAIC, the company is asked to utilise the DMAIC methodology. This quality management tool has been suggested to the automobile company because there would remain the possibility to nullify any major issues that will impact the business in the long run such as the cost of operations and poor resource optimisation due to the presence of a bigger workforce. Nonetheless, it has been seen that the DMAIC methodology is compatible with the business structure which it should provide immense value to the quality management processes in future and make the business grow in a competitive space.

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