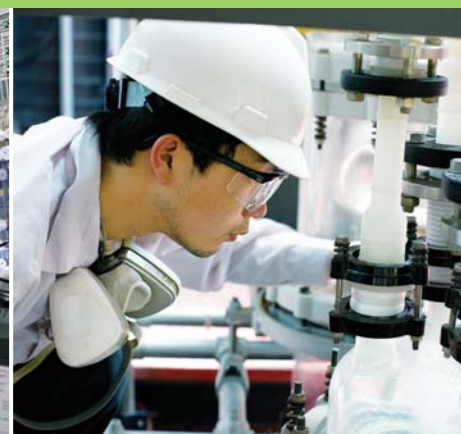
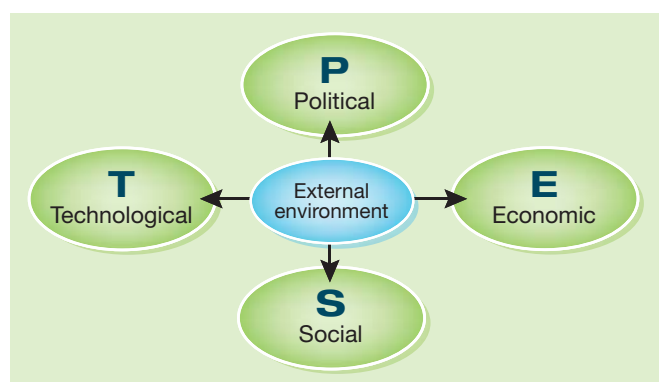


Using PEST analysis to support decision making



Introduction

Johnson Matthey is a leading global speciality chemicals company. Science and technology are embedded in everything that it does. It has operations in over 30 countries and employs around 11,000 people. It was founded in 1817 to refine and develop products using precious metals – something it still does today. As well as creating precious metal containing products, it also recycles precious metals and manufactures many other high technology products and chemicals. So, how does Johnson Matthey affect you? If you have ever travelled in a car it is likely to have been fitted with a catalytic converter to reduce vehicle emissions. Johnson Matthey produces catalytic converters for around a third of all cars manufactured in the world. This product has huge environmental and health benefits for everyone through reducing pollution.



Its products aim to have a positive impact on society and the environment, values which are at the heart of Johnson Matthey's operations. It creates catalysts which help to control pollution in oil refining processes. These catalysts speed up refining processes and help reduce the sulphur content of petrol, as sulphur is a major pollutant. It also produces tiny components in medical devices like pacemakers and cutting-edge technology such as technical ceramics. In addition, it produces the active ingredients for a variety of pharmaceuticals to benefit the healthcare industry.

Johnson Matthey operates in an industry driven by advancements in technology. To remain competitive the company needs a highly skilled workforce to establish new and more efficient ways of meeting the challenges faced by the industry. To be at the forefront of technological innovations the company requires people with skills in STEM subjects (Science, Technology, Engineering and Maths) as well as skills in other areas. Johnson Matthey offers many highly rewarding career opportunities for people that share the company's commitment to sustainability and the creation of a positive impact on society through its products. It offers first rate training and development opportunities enabling employees to grow their careers with the company.

This case study demonstrates how Johnson Matthey uses a PEST analysis to monitor changes in its external environment that will have an impact on its operations. The findings of this analysis are used to form future business strategies to remain competitive in its fast-paced industries.





Political

Changes in the political arena influence many organisations. For Johnson Matthey, which operates globally, changes in laws and taxes in these countries can have a range of impacts on the company's operations and strategies.

Since the 1970s more and more countries have passed laws to control air pollution. Poor air quality affects peoples' health, is bad for the environment and has other knock-on effects. For instance, poor health costs the economy money directly through increased healthcare costs and indirectly in days missed from work. The amount of potentially harmful emissions rises as the number of vehicles on the roads increases. Governments set limits to reduce emissions from vehicles and to control what pollutants are legal, putting pressure on car manufacturers. This means new technology is required to improve the efficiency of catalytic converters. Johnson Matthey's highly skilled research and development (R&D) teams develop this technology. Its converters use chemistry to convert harmful pollutants in exhaust fumes into less harmful gases.

Countries often seek new investment to help their economies grow. As a result of the greater demand for catalytic converters, Johnson Matthey needed to expand production in Europe. Its options were to expand existing sites or build a new plant. After considering all the key factors such as the cost of land, availability of transport links and skilled labour, closeness to customers and tax rates, Macedonia was chosen for the new site. A similar new American plant was built to serve the US market, with production beginning in 2009. Countries use many strategies to attract new investment and it is vital that businesses understand these and respond to them. The right partnership of industry and country will bring benefits to both.

One way to attract investment into a country's economy is through the level of tax that it requires companies to pay. Countries have different tax rates and systems to determine the amount of tax payable. They also have different ways to levy tax – for instance, on income, fuel or business profits. Governments can set tax to

encourage certain businesses or types of business to operate in their country. In the UK the government encourages innovation in technology-focused businesses. Tax credits are given to businesses that invest in R&D to create new products and techniques, many of which can be exported around the world. Johnson Matthey benefits from tax savings from its R&D, whilst the UK benefits from having a company that develops, makes and exports leading, innovative products. Johnson Matthey continually invests in R&D to remain competitive in the marketplace. It spent over £135 million globally on R&D in 2012, a large proportion of which was in the UK.

Economic

The world's economies affect most organisations to a certain degree. For Johnson Matthey there are three main areas where economic factors influence its operations. These are the global recession, economic growth in China and price changes in the precious metals market.

The 2008 banking crisis, when many major banks failed, caused a fall in growth around the world because companies could no longer obtain the loans they needed for investment. This recession meant a fall in demand for many organisations' products, including Johnson Matthey. Like many companies, Johnson Matthey looked for ways to reduce costs. One solution was to increase efficiency. The company set targets to reduce the use of natural resources and decrease waste through lean production techniques. This created a more sustainable model of production. It also focused on developing products that contained fewer rare non-renewable raw materials such as platinum. Achieving these targets meant Johnson Matthey reduced costs and became more sustainable. The benefits of this were two-fold – saving the company money whilst at the same time conserving the planet's valuable natural resources. As the world tries to emerge from recession, Johnson Matthey's focus on being more sustainable and manufacturing more efficiently has improved its position beyond where it stood in 2008.





Johnson Matthey is keen to benefit from the high levels of economic growth in China. This growth has led to a higher demand for cars in the country and a subsequent increased demand for catalytic converters. The economic growth has also created a building boom, meaning greater demand for the plastics that the company's products help to produce. Rather than transport goods to China, Johnson Matthey has established manufacturing plants in the country. Its presence in China provides a platform for further growth. For instance, increased demand for food production means increased demand for fertiliser to improve crop yields. Chemicals used to create these fertilisers are another area that Johnson Matthey specialises in.

One part of Johnson Matthey's business is linked to refining and recycling precious metals. 4% of its global sales are in this market. It mainly extracts metals such as gold and platinum from redundant products and unwanted jewellery and recycles them. The inputs in this model are the products that have reached the end of their useful life, the outputs are the precious metals obtained. The amount of inputs available, and the value of the outputs, changes as the price for these metals change. High prices mean more inputs, as customers are keen to increase their returns. If prices fall, the amount of inputs will also fall. The financial performance of Johnson Matthey's refining business is therefore dependent, in part, on the prices of precious metals.

Social

Social changes that affect Johnson Matthey's operations include changes in education, the population and environmental concerns. As sustainability and protecting the environment are high on the public agenda, the need for products that do the most good whilst taking as little as possible from the natural world increases. Johnson Matthey specialises in products that benefit society and the environment.

Johnson Matthey employs a high proportion of staff in highly technical areas such as science and engineering. Its people are its greatest asset. However, it can be difficult to recruit people with the skills and knowledge that the company requires. To address this issue Johnson Matthey is trying to raise the awareness of young people to the excellent career prospects available to students who study STEM subjects at school or college. It uses social media to promote STEM subjects. It works closely with schools that are local to its sites, educating pupils both in what the company does and in the exciting careers it can offer. Its apprenticeship programmes combine on-the-job training with study opportunities, leading to qualifications that benefit both the apprentice and the company. It also follows more traditional routes, such as careers fairs in schools, colleges and universities to demonstrate the type of work it does.

As the world's population continues to grow, the demand for food also grows. As countries become more wealthy, the type of food eaten also changes. For instance, people eat less grains and pulses and more meat, which requires a lot more resources to produce. These social factors mean that more food and better quality food is needed, increasing the demand for fertilisers. The chemical processes that produce fertilisers are made more efficient and sustainable if catalysts are used. Since Johnson Matthey manufactures these catalysts, the increased demand benefits the business.

Catalytic converters reduce pollution by cutting down harmful emissions. This reduces illness and costs to health services. These catalysts are just one example of a product that can benefit society as a whole and the vast majority of Johnson Matthey's products bring these sorts of benefits to society. Its R&D is focused on growing the next generation of products that will bring benefits to society sustainably.





Other products bringing benefits include its range of active pharmaceutical ingredients used to make drugs to improve people's health. One of these drugs, morphine, is key to controlling pain in critically ill patients. Cleaner air and better drugs both help contribute to a better quality of life for all.

Technological

Johnson Matthey must not only try to benefit from technological change, it must also be a driver of such change. It is a world leader in R&D, led by highly skilled people recruited from STEM subject fields. Currently it is working on:

- new chemical processes that use bio-based materials, cutting down the use of non-renewable natural resources such as oil and gas
- low carbon, green power for cars and homes, based on fuel cell and battery technologies
- methods to make water cleaner and purer
- production processes based on using fewer materials and less energy and water.

Technological change could cause problems for Johnson Matthey. If, for example, a new technology replaced the internal combustion engine, catalytic converters may no longer be needed. Johnson Matthey is therefore looking at alternative technology, for instance, using catalysts in fuel cells. This is a low carbon way to produce electricity and could be an important source of power in the future. Johnson Matthey has made sure it is at the forefront of such change by working with car manufacturers on fuel cell vehicles. It is also working on better, more efficient batteries which could be used to power our cars, based on R&D advances.

Johnson Matthey actively uses new technology to reach its various stakeholders. These range from investors and customers to potential new recruits. It tailors its message to each audience using digital media. Its website is constantly being improved with

the latest technology, including a mobile friendly version. For investors, there is a tablet based app. It also uses key social media routes such as Twitter, Facebook and YouTube.

Conclusion

Johnson Matthey's values centre on health and safety and developing sustainable, environmentally sound products and processes. Johnson Matthey is focused on 'doing the right thing' with its products that aim to have a positive impact on society and the environment. Its vast range of products bring a number of gains. Cleaner air means fewer problems with pollution and health issues such as asthma. Greater efficiency in fuel use and in chemical processes means fewer natural resources are used. Its involvement in all aspects of the production process, from acquiring materials, manufacturing, refining and developing technologies means that it positively improves the environment in all aspects of its operations.

To remain a world leader in its industry, Johnson Matthey has to take account of a whole range of external factors over which it has no control. Through monitoring these factors using a PEST analysis, Johnson Matthey has been able to protect its future by making informed decisions regarding its business operations and strategies to grow the business.



1. State two benefits to a business of carrying out a PEST analysis. (2 marks)
2. Explain why STEM subjects are important to technology-focused businesses. (4 marks)
3. Analyse how a company like Johnson Matthey can use a PEST analysis of factors in its external environment to create a competitive advantage. (6 marks)
4. Evaluate which of the changes in Johnson Matthey's external environment has had the biggest impact on the business. Give reasons for your answer. (8 marks)