

Case study on chevron

Business



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Operations: upstream Chevron's OLL and gas exploration and production operations are primarily In the US, Australia, Nigeria, Angola, Astrakhan, and the Gulf of Mexico. As of December 31, equivalent net proved reserves. Daily production in 2010 was 2.

763 million barrels per day (439. 3 thousand cubic meters per day). In the united States, the company operates approximately 1 1 , OHO oil and natural gas wells in hundreds of fields occupying 4, 000, 000 acres (1 6, 000 km) across the Permian Basin, located in West Texas and south eastern New Mexico.

In 2010, Chevron was the fourth largest producer in the region. In February 2011, Chevron celebrated the production of its 5 billionth barrel of Permian Basin oil.

The Gulf of Mexico is where the company's deepest offshore drilling takes place at Tahiti and Blind Faith. It also explores and drills the Marcella Shale formation under several North Eastern US states. Downstream Chevron's downstream operations manufacture and sell products such as fuels, lubricants, additives and petrochemicals.

The company's most significant areas of operations are the west coast of North America, the U. S.

Gulf Coast, Southeast Asia, South Korea, Australia and South Africa. In 2010, Chevron sold in average 3. 1 million barrels per day (490×10^3 mm/d) of refined products like gasoline, diesel and Jet fuel. The company operates approximately 19, 550 retail sites in 84 countries. The company also has

interests in 13 power generating assets in the United States and Asia and has gas stations in Western Canada.

Chevron is the owner of the Standard Oil trademark in 16 states in the western and southeastern U.S.

S. To maintain ownership of the mark, the company owns and operates one Standard-branded Chevron station in each state of the area. Additionally, Chevron owns the trademark rights to Texaco and Caltech fuel and lubricant products. Merck & Co.

, Inc. Doing business as Merck Sharp & Dohme, MS outside the United States and Canada, is an American pharmaceutical company and is one of the largest pharmaceutical companies in the world.

Merck headquarters is currently located in Whitehouse Station, New Jersey, though in 2013 the company announced it would be relocating to Kenilworth, New Jersey by 2015. The company was established in 1891 as the United States subsidiary of the German company now known as Merck KGaA. Merck & Co. was confiscated by the US government during World War I and subsequently established as an independent American company.

It is currently one of the world's seven largest pharmaceutical companies by market capitalization and revenue.

Merck has a long and rich history of working to improve people's health and well-being. Through the years, the researchers at Merck have helped to find new ways to treat and prevent illness – from the discovery of vitamin B1, to the first measles vaccine, to cold remedies and antacids, to the first statin

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to treat high cholesterol. Their scientists also have helped develop many products to improve animal health, including vaccines and antibiotics.

Economic Theories: Natural resource economics: it deals with the supply, demand, and allocation of the Earth's natural resources.

One main objective of natural resource economics is to better understand the role of natural resources in the economy in order to develop more sustainable methods of managing those resources to ensure their availability to future generations. Resource economists study interactions between economic and natural systems, with the goal of developing a sustainable and efficient economy. The resource concept is a complex one because the concept of resource is complex and changed with the advent of new technology (usually more efficient recovery), new needs, and to a lesser degree with new economics (e. G. changed in prices of the material, changes in energy costs, etc.).

On the one hand, a material (and its resources) can enter a time of shortage and become a strategic and critical material (an immediate exhaustible crisis), but on the other hand a material can go out of use, its resource can proceed to being perpetual if it was not before, and then the resource can become a pale resource when the material goes almost completely out of use (e. G. Resources of arrowhead-grade flint). 2. Production Function In economics, a production function relates physical output of a production process to physical inputs or factors of production.

The production function is one of the key concepts of mainstream neoclassical theories, used to define marginal product and to distinguish allocation efficiency, the defining focus of economics.

The primary purpose of the production function is to address allocation efficiency in the use of factor inputs in production and the resulting distribution of income to those factors, while abstracting away from the technological problems of achieving technical efficiency, as an engineer or professional manager might understand it.

In macroeconomics, aggregate production functions are estimated to create a framework in which to distinguish how much of economic growth to attribute to changes in factor allocation (e. G. The accumulation of capital) and how much to attribute to advancing technology. Some non-mainstream economists, never, reject the very concept of an aggregate production function. The major points of correlation with economic theories that we studied are as follows: A technological allegations between physical inputs and physical outputs over a given period of time.

Shows the maximum quantity of the commodity that can be produced per unit of time for each set of alternative inputs, and with a given level of production technology. Hence it can be said that production function is: Always related to a given time period Always related to a certain level of technology Depends upon relation between inputs Normally a production function is written as: Where Q is the maximum quantity of output of a good being produced, and L = Labor; K = Capital; I = land; R = Raw material; E = Efficiency parameter.

INTRODUCTION TO THE CASE The given case talks about how exactly computerizing and Information Technology has helped in lowering the costs of production at Chevron Corp.. And Merck & Co. Both the companies at early stages had to incur so much of monetary to their operations but with time and evolution of Technology they ended up reducing their costs and also providing better services, and lesser time to deliver their services.

Chevron Corp.. Once used to shell out anywhere around \$2 million to \$4 million each to drill 10 to 12 exploratory wells before finding oil.

Today, Chevron on the other hand finds oil once in every five wells it drills. The reason for the cost savings in exploration and development of oil fields was because of the advancement in their technological techniques through which they used to find out the likely oil and gas deposits. The new technology enabled Chevron in displaying three-dimensional graphs that would locate the probable locations to the oil and gas fields.

Apart from this, the new processors with better processing skills allows Chevron to do more calculation- intensive simulation modeling.

Using only the seismic data as inputs, the company can now find out or to be precise model how the oil and gas deposits will shift themselves and flow as a known field is being pumped out. This leads to locating the secondary wells accurately in a known oil field. As a result of the advancements, the overall production costs have shrunk by 16% industry wide since 1991. On the other hand, Merck a pharmaceutical based company at early stages used to do extensive, time consuming research and conducted a long series of experiments before finding a cure or a medicine for a disease.

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The Drug industry basic research always starts with ODL-chemical or Elegantly Mellon AT ten Leases mechanism. In the past, when the mechanism for Hodgkin disease or pancreatic cancer was understood, the researchers at Merck and other drug companies experimented on known active compounds one by one in a time-consuming chemical trials. Later on, successful therapies emerged only after human trials. The total time to introduce a new pharmaceutical was longer than a decade.

Nowadays due to advancement in technology, drug companies perform the same basic research as it used to be before but the latter stages have now boosted up as machine controlled and automated by Scripps perform thousands of reactions at once and tally the results.

The total time taken to discover has been cut by more than two thirds, and all attendant costs have declined sharply. PROBLEMS Chevron Corp.. Was facing problems in two aspects 1. The company had to do a large number of drills in wells before finding the oil reserves which used to cost about \$2 million to \$4 million.

Normally, they had to drill up to 12 wells at an average to find the oil reserve. 2. Secondly, it was a time consuming process as it used to take up much time in drilling up the wells and it was very tedious task to find the geographical locations of these oil and gas reserve sites. At times, as the efficiency of finding a reserve was less as the probability of making an error in the calculation part played a major role in time consuming activities to locate the reserves. Merck & Co.

To conduct research and extensive experiments to find cures for the diseases was a time consuming process as it used to take almost up to a decade to find efficient cures that too after human trials.

Due to the time consuming process the cost also used to be high. Every drug based industry always had to start with biochemical or genetic modeling of the disease mechanism. Once the mechanism is in place the company's team of researchers conducts experiments to find the active compounds one-by-one, which used to be time consuming process.

So major two aspects were affected at that time, time to find the cure and then, the attendant cost was high. SOLUTIONS At Chevron Corp..

Due to the enhanced analytical and R&D capability provided by computers and information technology (IT) systems the company started finding the oil reserves by drilling up only 5 wells at average instead of 12 wells previously. They loud now with the help of exploration and development of oil fields were able to display three-dimensional graphs of the likely oil and gas deposits. Apart from this, new processors allowed more calculation-intensive simulation modeling I. . Only using ten select data as Inputs, concern now could model now deposits will shift and flow as a known field is being pumped.

ten 011 Ana gas Whereas, at Merck & Co. Due to the technological advancements in R & D capability as well as increased analytical methods have helped the company and the drug industries as a whole to save time and cost efficiently. Now the research and the extensive experiments that

were conducted by humans are now done by high speed processors that instantly do thousands of experiments and compare the results.

This has enabled in finding the cures for the diseases by the researchers in a better and efficient manner. Economic Theories: 1) Production Function: The Production function shows a technical relationship between the physical inputs and physical outputs of the firm, for a given state of the technology.

$$Q = f(a, b, c, \dots)$$

Z) where a, b, c . . . Z are various inputs such as land, labor , capital etc and Q is the level of the output for a firm. If labor (L) and capital (K) are only the input factors.

The production function reduces to. Production Function is 1 .

The tool of analysis used to explain the input-output relationship 2. Describes the technological relationship between inputs and outputs in physical terms 3. It tells that the production of a commodity depends on specific inputs 4.

It represents quantitative relationship between inputs and output 5. It represents the technology of a firm, of an industry, or of the economy as a whole 1 . Short term: Time when one input (say, capital) remains constant and an addition to output can be obtained only by using more labor. 2. Long run: Both inputs become variable.) I nee law AT variable proportion: It states Tanat IT ten Input AT one resource Is increased by equal increments per unit time while the inputs of other resources kept constant, total product (output) increases, but beyond certain point the resulting output is increases with reducing rate.

Assumptions: 1 . Constant technology: The law of variable proportions assumes constant techniques of production. The reason is that if the state of the technology changes then the marginal and average product may rise instead of diminishing. Short run: The law is specially operates in the short run because here some factors are fixed and the proportion of the other factors has to be varied. It assume that one factor is varies while the others are fixed 3. Homogeneous factors: The law is based on the fact that variable resources are applied unit by unit, and each factor unit is homogeneous in amount or quality 4.

Variable input factors: The law supposes the possibility of the ratio of the fixed factors to the variable factors being changed. In other word, it is possible to use various amounts of variable factors with fixed factors of production.