

The commodity chain essay samples

[Business](#), [Manufacturing](#)



Production processes have been revolutionized by technology. This is because technology has shaped the way products, processes and goods are produced. Technology has enabled people to simulate designs of very complex engines, aircraft models, combustion components and control centers of large ships. Though very complicated, such processes have been understood by carrying out an analysis of the product's commodity chain. This helps in understanding the production and development of the product. Commodity chain refers to a chain of activities that consist of the labor and production activities, aimed at producing a finished product (Bair 2). These key areas work independently to form a finished product. Such commodity chains can illustrate how automobiles are manufactured. An automobile is a type of vehicle that has the capability to move by itself. This type of vehicle is made up of components designed to work independently. The body is mainly the metal sheets, roof, panels, and the interior including the seats that have been fixed to form a meaningful form. The chassis is the part that supports the entire body, mainly rests at the bottom and supports the entire vehicle. Products pass through stages that are dependant and heavily rely on raw materials to complete each stage. These raw materials include copper, rubber products, plastic, glass, steel and other petroleum products. The automobile manufacturing process also relies on raw materials produced through combustion processes. These processes produce toxic substances, however the environment is protected through stipulated environmental statutes and laws. This includes the clean air act to reduce the emission of harmful substances, such as mercury that is dangerous to human life. Steel as a material is largely produced in countries like China, due to massive

amounts of raw materials used in steel production. It plays an important role in the production of the chassis of most automobiles. Steel manufacturing occurs in stages, with iron ore being the main raw material in the steel production process. The process occurs by heating coal to very high temperatures and passing the resulting product to an iron melting furnace. In this furnace, iron, coke, air and limestone are added and heated to produce heat and carbon for the production process. It is then passed to the blast furnace, where high amounts of purity oxygen help to remove impurities. The combustion process results to molten iron, which is further directed to a furnace containing basic oxides. In this area, further refinement occurs producing steel. Steel is then packed and shipped in small steel sheets to various markets, where they are shaped depending on the required shape. Plastic as a raw material is formed by the process of polymerization, during which oxidants, pigments, and other chemical additives are added to form molten plastic, which is then molded into some shape. Another important element in an automobile is the lighting and coordination system, composed of copper that forms the conduit linking the lighting systems, such as the bulbs to the battery. Copper, largely produced by countries like Chile due to extensive availability of large copper mines, is produced by sulfates and carbonates, through a froth flotation method where the powdered ore is mixed with oil to form gangue. The process undergoes a leaching process that helps to convert compounds of copper into copper, which are further purified through electrolysis to form pure copper. Rubber, on the other hand, produced by countries such as Malaysia due to large industrial resources, is an important material used in the manufacture of tyre and wiper pads. It is

manufactured through polymerization process, with raw materials mainly being petroleum products. During the polymerization process, compounds of sulphur and other additives such as silicates are added to enhance durability, to which afterwards, a molding process produces rubber. Glass also as a raw material is also used in manufacturing the windscreen, side, and the rear windows. It is manufactured by mixing broken pieces of glass, and heating them to very high temperatures. The result is then directed to the float bath to produce a uniformed glass in length and width (Jones 453). The glass is also coated to give it optical properties, after which it is inspected on quality, wrapped and packed using papers into small chunks for shipping to various markets. This includes well-developed countries such as the US and Japan, specifically in Tokyo where large automobile assembling sites are located. The manufacturing process of most vehicles consists of three main stages. These include the development, product technology, and the production stage. The development stage is the heart of the manufacturing process. This is because it helps in developing innovative designs in-line with technology, and focuses on the future. This section is further composed of planning, visual design and technical design. The planning section is mandated with creating models in visual forms through computer aided design. This technology generates new designs using computer technology, simulation in which new models are produced through visualization, a process that brings a model of the automobile into a real picture. On the other hand, the visual design stage is used to produce highly refined and accurate, three-dimensional digital image of the desired automobile.

The simulated design is further reviewed, refined, and the final blueprint produced and directed to the mainstream production line. At the production line, the simulated design is tested for movement in order to review the coordination aspects of various sections of the vehicle. In this section, each component is further envisioned, applying the appropriate designs and style to suit the manufacturing conventions. The production line consists of various sections, which handle framework, welding, wiring, painting and body shots. The resulting figure undergoes the major manufacturing process to produce an automobile. This consists of automatic pressing, load configurations and a blanking process. The blanking process is used to produce small sheets, which are then transferred to the stamping lines, where body parts are joined together. In this section, major welding processes are also carried out on side frames, roof panel and other interiors using welding robots. The side frames are joined to the roof panel and the interiors of the automobile. The output is highly automated, in which it is mounted onto the chassis to produce the body frame. The completed frame is then passed to the paint section, where the application of paint depends on the magnitude and design of the automobile. Small automobiles may be hand sprayed, or automated in instances where large automobiles are being manufactured. In the paint section, several layers of the paints are added on to the vehicle, to produce a glossy and an attractive finish depending on the desired color. The paint is applied on all sections including the interior and exterior sections of the vehicle. The other sections such as the bumper, dashboards, and interior seats are produced separately and mounted on the painted vehicle.

On finishing, several points are joined together, the electrical segments, main engine system, tyres and the windows. This process is manually done with specialized tools such as the automatic electrical driven screwdriver, to join the sections together. The engine is fitted in its place and connected with the transmission system of the vehicle. A transmission system assists in the transmission of power (Rajput 462). This transmission system consists of the steering module, gear box and the entire propeller shaft. On the steering part, both the front and rear tyres are mounted on the shaft. Windows on the other side mounted, and each side mirror placed and configured at the desired angle. The interior and exterior lighting is then fixed, and other signaling components connected for proper steering and coordination. The final output of the automobile is then tested and inspected for any hidden fault and mis-configuration using computerized testing techniques. The testing techniques also include road test for a given distance, or by an external body to ascertain the level of compliance to industry standards. Upon testing, the automobiles are shipped to various parts of the world, either through sea or air, to various company outlets or dealers who mainly sell to consumers and help in brand penetration. At the destination, the vehicles are marketed through various channels such as the internet, newspapers, magazines and other mainstream communication channels such as television and radio. On the other hand, social networking platforms help in brand awareness, where positive brand reviews are posted. These strategies depend on manufacture-dealer relationships, or manufacture relationship with consumers, who depend heavily on service reliability and performance of a given vehicle. Every finished product undergoes a sudden

change, conversion where several inputs are added to produce a product. Commodity chains, as well known helps us understand the nature of processes that lead to the production of various products, as well as enable us to appreciate how human factors and technology relate in the production process.

Works Cited

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