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**MANAGEMENT**

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**QN.1** According to John Wiley **Value chain analysis** is a process where a firm identifies its primary and support activities that add value to its final product and then analyze these activities to reduce costs or increase differentiation. It’s a tool used to analyze internal firm activities and its goal is to recognize activities that are mostly valuable to the firm and also help the firm to improve on those areas that could bring competitive advantage.

Value chain analysis also refers to the process of examining the steps involved in a company's value chain and the supporting company systems.

Michael Porter outlined those elements in his book of 1985 called “Competitive Advantage” as follows.

Inbound logistics, these are the processes that involved in receiving, storing and internal distribution of raw materials or basic ingredients of a product or service. It includes the coordination of the flow of information and goods into and out of their business. The firm or company analyze inbound logistics ways to reduce supplier costs and build strong relationships with core suppliers.

Outbound logistics, involving movement of goods and information to the buyers. It includes delivering of product and services to the customers. Delivery of goods efficiently at lowest cost is important to optimize distribution costs and timely service for buyers.

The operations step in the value chain which includes various processes of production activities. For example, production floor or production line that convert inputs of product or services into finished products. Manufacturers often focus on developing the best-quality goods at the lowest costs by optimizing labor and equipment costs and taking wasted steps out of production processes.

Marketing and sales are the ways of putting products and services in the markets and they includes research, support for customer and promotional activities like advertisement and sales that attracts customers. Companies or firms consistently review current promotional techniques and look for opportunities for improvements.

Services are all activities that keeps the value of the products or service to customers as soon as a relationship has developed based on the procurement of services and products. This is an alternative model designed for service management and organization growth.

Infrastructure relates to building up and development of buildings, equipment, supplies that support the activities within the organization that enable them to maintain its daily operations. It is in line with management, administrative handling, and financial management. Infrastructure allows organization or companies to seek ways of boosting their structures to support buyers.

Technology development, those are the activities that support the development of products and services of the organization both internal and external. The examples are, information technology (IT), innovations and improvement of new products based on new technologies. Technology allows firms or companies to seek ways of boosting their structures to support customers.

Human resources is the center of attracting, retaining and motivating top workers. It also help in developing workforce within the organization. For example, recruitment of staff, training, coaching and compensation of staff.

Procurement activities that involved in purchasing of goods and services. Purchasing departments periodically review procurement steps to seek opportunities for lower costs from suppliers or more favorable terms. Those activities includes managing relationship with suppliers, negotiating best prices, making product purchase agreement with suppliers and outsourcing agreements.

In conclusion, Value chain analysis helps Firms, Companies and Organizations to analyze value of their products and services that improve efficiency and more effectiveness to meet the needs of their customers. They use primary and support activities as building blocks to create valuable products, services and distinctiveness as explained by Porters value chain analysis book called Competitive Advantage.

**QN 2**: **Variables**: Are characteristics, numbers or quantities that increases or decreases time or takes different values in different situations. Variables are divided into two types and they includes: Independent variable is that one which takes different values and can cause corresponding changes in other variables white dependent variable takes different values only in response to an independent variable.

The following are the variable in which production personnel should zero in

Raw materials, the available of row material make production runs without delay as such the production personnel should zero in.

Tooling involves cleaning and repair of the machines available to avoid any break down of the equipment.

Environment. The place where the factory is established should be maintain and kept clean to avoid any inconveniences during production

There must be training of workers base on the responsibilities. This will enable to increase their skills hence there will be an increase in production.

Equipment. The production personnel should make sure that new and old equipment are taken care of. He/ she must check and ensure replacement of any equipment that worn out.

There are other variable which production personnel can take care of and they include the following:

Sales commission: The amount of money that an individual receives base on the level of sales he or she has obtained. The sales person is provided a certain amount of money in addition to his/ her standard salary based on the amount of sales obtained.

Direct labor cost is the total cost of employing workers that work directly on a manufacturing product. Direct labor, direct materials and manufacturing overhead comprise a company's product costs. The sum of these three **c**osts equals total inventory costs under generally accepted accounting principles. Direct labor costs are wages, benefits and insurance that are paid to employees involved in the production line. (Direct labor cos is calculated as job time x wages).

Utilities cost are a staple of life. They ensure that your household functions properly and remains comfortable and livable.

Unless you live off the grid in a lakeside cabin (in which case you are probably not reading this), you need to plan your monthly budget around utility bills for electricity, gas, water, internet, and cable. It’s good to look into the average utility costs in individual production.

Now that we understand how variable costs can confound budgeting, here are seven ways a production personnel can get out ahead of them and stop from struggling to make the numbers work each month.

Strike a deal to pay a fixed amount for utilities. Discuss with your service provider about being charged a fixed amount for your utilities each month rather than paying a variable rate. You may end up paying slightly more than you would have in the long run but, if your goal is to reduce uncertainty.

Invest in tools and practices that lower highly variable costs**.** Most electricity providers offer free assessments to see how you can be more efficient in your energy use, but you can also take the time to make sure your system is running efficiently and that your lights turn off automatically after a certain hour or if they don’t sense motion. You can also buy tools like smart thermostats that represent a bit of an upfront investment, but eventually pay for themselves by helping keep your costs down.

Calculate the variable expense average**.** Go back and calculate how much you have spent on variable expenses over the past several years. Though some months may be outliers if you generally pay the same amount each year in costs. You might find that they are not so variable after all. That said, use the highest average amount over the past three years as your baseline estimate for what you will pay this year.

Give yourself some cushion. Production personnel should add a cushion of 3 to 5 percent of the total to account for price increases and other anomalies out of his or her control. Whatever, he or she do not use can go towards their discretionary funds.

Always compare your actual spending to your estimates. Compare what your estimates to what you ended up spending. If you were within your cushion, you will likely be on track to have a similar result next year if not, you need to go back to the drawing board and see where you can shift some money over or even away from your variable costs fund.

Create a savings account specifically for variable expenses**.** If you budgeted wisely and ended up with a little extra outside your cushion at the end of the year, deposit that money in a savings account to help deal with price spikes. Even better, deposit excess funds at the end of each month so you will have an emergency fund to dip into if March is colder or September is warmer than expected.

Obtain a business line of credit for emergencies**.** Consider a business line of credit as a backup plan. This revolving form of financing is handy because you don’t need to reapply once you pay off your first draw and you only pay interest on what you have taken out. Line of credit have higher credit limits than credit cards and allow you to withdraw cash which gives you the freedom to pay for major expenses without delay.

Variable expenses are difficult to plan for because of their varying nature. That doesn’t mean you can’t make a plan for dealing with them. If you can cover these by minimizing their impact and dedicating a little more of your budget to them than they might need, you will be in good shape.

(According to Eng. Ostwald, P. F, Mclaren, T.S. Cost Analysis and Estimating for Engineering Management, Prentice Hall 2004)

**QN 3**: **Just In Time Management System,** according to Caroline Banton Aug 23 2019 defines it as a management strategy that aligns raw-material orders from suppliers directly with production schedules. Companies employ this inventory strategy to increase efficiency and decrease waste by receiving goods only as they need them for the production process, which reduces inventory costs. This method requires producers to forecast demand accurately.

Just in Time Management System is also define as a methodology aimed primarily at reducing times within production system as well as response times from suppliers and to customers. It’s an imagined community or society that possesses highly desirable or nearly perfect qualities for its citizens.

The term *utopia* was created from Greek by Sir Thomas More for his 1516 book describing a fictional island society in the South Atlantic Ocean off the coast of South America.

Utopia focuses on equality in economics, government and justice however by no means of exclusively with the method and structure of proposed implementation varying based on ideology according to Lyman Tower Sargent.

Utopia is characterized of socialist, capitalist, monarchical, democratic, anarchist, ecological, feminist, patriarchal, egalitarian, hierarchical, racist, left-wing, right-wing, reformist, free love, nuclear family, extended family, gay, lesbian and many more utopias Utopianism, some argue, is essential for the improvement of the human condition. But if used wrongly, it becomes dangerous. Utopia has an inherent contradictory nature here.

Sargent argues that utopia's nature is inherently contradictory, because societies are not homogenous and have desires which conflict and therefore cannot simultaneously be satisfied. If any two desires cannot be simultaneously satisfied, true utopia cannot be attained because in utopia all desires are satisfied.

JIT is utopia because production runs are short, which means that manufacturers can quickly move from one product to another.

It cut inventory costs because manufacturers do not have to pay storage costs. Manufacturers are also not left with unwanted inventory if an order is canceled or not fulfilled.

This method reduces costs by minimizing warehouse needs.

Companies also spend less money on raw materials because they buy just enough resources to make the ordered products and no more.

JIT eliminate manufacturing of waste by getting right quantity of raw materials and producing the right quantity of product in the right place at right time.

Utopia can be made to work? Yes because of following reasons;

It eliminate waste which Toyota president, Shoichiro Toyoda has referred to as “anything other than the minimum amount of equipment, material, parts space, and worker’s time which are absolutely essential to add value to the product.”

It attempts to minimum ordering costs and inventory holding costs and at the some time produce high quality and variety of products to meet consumer test and demand with minimum delay.

Utopia can work because it create satisfaction of the customers in the market.

This method of production is concern with time and meeting consumers demands in the market which the best way on production in the present technology world.

It’s best way to develop and rebuilding the economy of the country. For example, Japan created and developed this method in order to rebuild their economy after World War II and it worked successfully.

The philosophic approach in terms of batch size is the collection of concept for improving production techniques from skilled professionals to design products, semi-skilled and unskilled workers to tender expensive, single purpose machines, build-up safety inventory to avoid stock outs and use of economic order quantity. Japanese used JIT in their manufacturing and industries despite their population and culture successfully and it worked as a best way against global market competition with remarkable successes.

In conclusion, Just in Time (JIT) invented competition survival production philosophy aimed at reducing total production cost by minimizing waste and at the same time continuously improving total product quality. JIT as an integrated production and control system with interdependence of components. (According to Dr Michael M Kisembo).

**QN 4: A computer** is a machine that can be instructed to carry out sequences of arithmetic or logical operations automatically via Computer programming. Modern computers have the ability to follow generalized sets of operations, called programs*.* These programs enable computers to perform an extremely wide range of tasks. A "complete" computer including the hardware, the operating system known as software and peripheral equipment required and used for full operation can be referred to as a computer system. This term may as well be used for a group of computers that are connected and work together in particular computer network or computer cluster,

Computers are used as control system for a wide variety of industrial and consumer devices. This includes simple special purpose devices like microwave ovens and remote controls factory devices such as industrial robots and computer- aided design and also general purpose devices like personal computers and mobile devices such as smartphones. The internet is run on computers and it connects hundreds of millions of other computers and their users.

Computers are now-a-days often used in mak­ing complicated investment decisions. As we add more branches to the decision tree, we reduce our ability to analyses problems quickly. However, the rapid development of sophisticated computer equipment has increased the usefulness of computer-based analysis of complex investment decisions.

Computers streamline operations due to highly competitive business in the world. Firms strive to increase productivity and slash costs more especially with growing number of companies which are trying to reduce programs to cut layers of corporate management especially on the international side. Computers play a critical role in this effort since companies are reducing labor costs and dramatically improve the speed and accuracy of many routine tasks.

Computers help Companies to manage globalized businesses as part of their drive to be competitive. Many companies now turn each of their component busi­nesses as worldwide organizations and plan their manufacturing and sourcing strategies on a global basis through computers. To manage their far-flung operations effec­tively, firms increasingly turn to computers. A person can receive data of over forty from markets and coordinate it quick and efficiently.

With better integration of the economics depart­ment with the finance function, the corporate eco­nomic staff use the computers for cap­ital budgeting analysis.

Computer helps in preparing a summarized list of standardized economic assumptions which are distributed corporate wide. The economics department now concentrates on those parts of the economy perceiv­ed as most critical in the long run, such as real growth of the economy, interest rates and inflation.

The use of computers has made corporate economists to get involved in the analysis for new project proposals. For exam­ple, if a review is under way to evaluate commit­ting funds for a major plant expansion in a certain country or region, an economist may be required to estimate long-term project demand, inflation rates, or currency fluctuations.

Forecasting: In the present age of uncertainty and informa­tion revolution managerial focus has shifted to im­prove the decision-making process in business and government. Therefore, Managers use computers in accurate forecasts during decision-making. In the area of marketing, for in­stance, forecasts of market size and market charac­teristics must be reliable.

A company producing and selling refrigerators, T.Vs. etc. must make accurate forecasts of both regional market demand and types of customers. Based on this forecast, decisions re­garding advertising and other sales promotion ef­forts are taken by the help of computers.

The powerful microcomputers of today has big memory capacity, run faster, comparatively cheap and contain more RAM mem­ory which help to store data that will be used to forecasting future business.

Modern computers are extremely high in terms of speed and great accuracy that can do calculations correctly hence, any forecast­ing method can be programmed to run on a com­puter. Even the most calculation-intensive methods can be run on a micro-computer within a few min­utes.

Computer models are used for forecasting purposes. For example, when forecasters analyze framework of MTN company that containing equations representing both aggregate demand and aggregate supply.

They use modern econometric techniques, each equation is ‘fitted’ to the historical data to obtain parameter es­timates (such as the M PC, the shapes of the money- demand equations, the growth of potential GNP, etc.). This exercise helps forecasters to take judgment and ex­perience to assess whether the results are reasonable.

In conclusion**,** today we all recognize the transformation that computers have wrought in the workplace and in our lives. A close look at corporate management simply reveals that with information now moving from the factory floor throughout the company at blinding speed, whole layers of corporate management have been rendered obsolete.

And companies have now learned that the speed of today’s more competitive environment does not leave time for dithering over decision, any­way. The resulting learner style has thinned man­agement ranks while encouraging initiative and giv­ing people more responsibility. But one would do well to keep in mind what computer sci­entist Joseph Weizenbaum wrote 19 years ago in his book Computer Power and Human Reason: **“**We must learn the limitations of our tools as well their power. Even in its most advanced state, the computer is not, and never can be, a panacea for human problems or a substitute for our own, uniquely formed human judgment.”

**QN 5**: Computers are an essential part of modern information systems, and it is almost impossible to study information system today without knowing something about them and how they operate. In fact, without computers, it is unlikely that information system would even be considered a serious field of study or business. Most of the businesses, manual system presents numerous problems that are solvable by computer and communication technologies: (Engr. Faizullah Mahar, 2003).

Error level. Computerized system help to identify and reduce errors that are common with manual systems (book keeping). The examples of those errors are in, long prices, and prices incorrectly on invoices, or produce garbled journal entries or source documents. Sickness, worry, moodiness, and other inherently human variables can also contribute to high error rates in manual systems.

Temporary or permanent loss of data. Source documents and file folders are easily lost or misplaced. This often results in lost customer payments and delayed purchase or payments.

Labor intensity, manual systems book keeping) are labor intensive and, therefore, costly. Data from a single transaction often have to be transcribed several times, and many types of low volatility data have to be rerecorded by clerks every time a new transaction takes place (Tromthy and Krasnewch, 1994).

The level of service support in manual systems is often inferior. Customers like to know immediately if goods are not in stock, when goods not in stock will be arriving, when they can expect an order to arrive, what their current status is regarding payments and so on. This level of information support is difficult to achieve with a manual system. (Wilkinson, 1986).

Poor response, almost everything takes longer to do with a manual system. When orders are taken, the order entry department might have to contact receivable department for credit check before a can be validated. Today many computerized order-entry operations are connected to a centralized database and when a customer telephones, credit status can be verified immediately (Mehler, 1992).

Today, inexpensive computer and communications devices are setting up two new challenges to transaction processing: using the TPS as a competitive weapon and getting better information more quickly to the right people (Coy, 1992).

Computerized system help in pay roll processing systems. It’s used to produce paychecks for employees. This systems also produce data for tax purposes. Additionally, payroll-processing system keeps track of such items as Social Security payments, union dues, and group insurance deductions.  
With the presence of order entry, transaction processes for customer orders are processed. Orders may come from variety of sources –perhaps by mail, phone, and fax-from customers who are ordering on demand basis.

Inventory is the quantity of product that a merchandising has available to sell at any given time is called inventory. An inventory system monitors the quantity of each product available for sale and helps ensure that proper stock levels are maintained easily with computerized system.  
Invoicing, is the transaction processing system that creates invoices and sometimes packing slips. A packing slip shows little more than what products are contained in shipment. Prices are either hidden or missing. This process are simply done with the help of computers.

Shipping is sending of items in a sealed and well addressed packages of goods received from inventory. Often with shipping instructions, technology has affected the shipping operation in several ways. Computer and communication systems make it much easier to succeed in the overnight package delivery business.

Account receivable is where customers pay by credit card or have goods charged to their accounts. The account receivable system in the transaction processing system that manages customer purchase records, payments, and account balances. This can happen easily due computerized system.  
Computerized system play a big role in central purchasing department that are used by many companies to procure their goods. The advantages of centralized purchasing department are cost control, vender control, and taking advantage of discount realized by quantity buying. The major advantage is inconvenience to the other departments in the organization for whom the goods are being purchased.

Receiving department is to receive, inspect, and accept or reject goods that vendor’s ship. As goods are received, the shipping cartoons are to be open and the contents are checked against the information on the purchase order, the price of shipment is verified, and goods are inspected for possible damage. If the goods are satisfactory, they are typically routed either to inventory or to the department initiating the purchase request.

The general ledger system integrates transaction data from the other major transaction processing subsystems-payroll, accounts receivable, accounts payable, and so on. Besides insuring that the records of the firm balance, the general ledger system is used for budget planning, responsibility reporting, cost allocation and profitability accounting.

In conclusion, most companies must provide regular support to a number of data-oriented, transaction processing operations that involves a massive amount of record keeping. These operations payroll, order entry, and inventory control, to name just a few where the first business applications of computers in organization and are still among the most important. Without their computer based transaction processing system, most business could not survive in today’s fast paced business environment.

Today, inexpensive computer and communications devices are setting up two new challenges to transaction processing: using the TPS as a competitive weapon and getting better information more quickly to the right people

**QN 6**: A **flexible manufacturing system** (**FMS**) by Hary Gunarto 1988, is a manufacturing system in which there is some amount of flexibility that allows the system to react in case of changes, whether predicted or unpredicted. This flexibility is generally considered to fall into two categories, which both contain numerous subcategories like routing flexibility which covers the system's ability to be changed to produce new product types and ability to change the order of operations executed on a part. Machine flexibility consists of the ability to use multiple machines to perform the same operation on a part as well as the system's ability to absorb large-scale changes such as, volume, capacity, or capability.

A flexible manufacturing system (FMS) is a designed production method easy to adapt changes in the type and quantity of the product being manufactured hence computers can be configured to manufacture a variety of parts and handle changing levels of production.

The use of computers facilitate flexible manufacturing system in the following ways:

The system optimize the flow of the parts and centralized control by the computer thus, material movements and machine flow is easily controlled.

FMS helps in managing manufacturing resources like time and effort in order to manufacture a new product at massive quantity during production.

A flexible manufacturing system can improve efficiency and thus lower a company's production cost.

With the use of computer, reliability of the system is increase which leads to high level of production rate.

The use of computers in flexible manufacturing system makes production large automatic and reduce overall labor costs.

Flexible manufacturing also can be a key component of a make-to-order strategy that allows customers to customize the products they want.

To reduce mistakes and improve on the production of high quality product.

To minimalize costs in row materials, direct labor and inventory cost.

In conclusion, flexible manufacturing system is the best way of production since workers can move from one part to other part of production hence minimize delay on production. Products are available for the customer due to continue running of production process.

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