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The Integration of Computer in Manufacturing Business Executive Summary

“ Computer-integrated Manufacturing is the integration of total manufacturing enterprise by using integrated systems and datacommunicationcoupled with new managerial philosophies that improve organizational and personnel efficiency. ” This is according to Erhums. This system helps to reduce problems regarding to the manufacturing of products with the help of the implementation of computers. This strategy helps to improve the performance of manufacturing.

It is implemented to satisfy the needs and demands for a productivity enhancement and higher quality products with fewer errors in production process. This paper discusses about the help provided by the computer-integrated manufacturing in various business. It also states here the illustration of the key issues of the integration and adaptability of CIM. In addition, a new framework has been proposed in this paper for the design and implementation of CIM. Introduction Business has so many things to consider. And one of it is how will you increase efficiency and enhance productivity with fewer errors.

Before, the only way to manufacture products is through manual approach wherein there is a possibility of wrongdoings which may lead to business failures. But since advancedtechnologyhas been developed, it will be a very big advantage in the field of manufacturing business. It focuses on producing products in its most favorable condition, and at the same time, guaranteeing high quality, low costs, high flexibility and even smaller production quantity. Computer-integrated Manufacturing (CIM) is concerned with the integration of the business, engineering and manufacturing processes of an enterprise.

It helps the enterprise to achieve and maintain a competitive edge in the manufacturing marketplace. Over a period of time, factory owners have integrated computer systems in order to control the entire production process. This is done by taking the design, analysis, planning, purchasing, cost accounting, inventory control and distribution departments and interlink them with the factory floor, material handling, and management departments. This system will have an impact on every system within the factory.

This paper focuses on the integration of computer in the manufacturing process. This is an area of significant importance of computer application which is inclined to the field of Information Technology in business. Literature Review According to the US National Research Council, CIM improves production productivity by 40 to 70 percent as well as enhances engineering productivity and quality. CIM can also decrease design costs by 15 to 30 percent, reduce overall lead time by 20 to 60 percent, and cut work-in-process inventory by 30 to 60 percent.

Managers who use CIM believe that there is a direct relationship between the efficiency of information management and the efficiency and the overall effectiveness of the manufacturing enterprise. Thacker's view is that many CIM programs focus attention on the efficiency of information management and the manufacturing machines, material transformation processes, manufacturing management process, and production facilities. Computer-integrated Manufacturing can be applied to manufacturing organizations by changing the manufacturing focus toward a service orientation.

CIM and Job Definition Format (JDFF) are becoming increasingly beneficial to printing companies to streamline their production process. A better understanding of manager's needs would help systems develop recognize the emerging opportunities for creative use of information technology, and implement necessary changes. Methodology Computer-integrated Manufacturing is the system used to describe the full automation of manufacturing plant, with all processes functioning under computer control and digital information on tying team together.

This system was promoted by machine tool manufactures in the 1980's and the society for Manufacturing Engineers. It is not the same as a "lights-out" factory wherein it will run completely independent of human intervention. The hearts of CIM are the Computer-aided design (CAD) and Computer-aided Manufacturing (CAM). These systems are essential in reducing cycle times in the organization. Functional requirements must be compared to the current inventory of systems and available technologies to identify the accessibility of the system.

According to Jorgensen and Krause, there are techniques that is being used in satisfying system requirements which includes utilizing unused and available functional capabilities of current systems; identifying functional capabilities but not currently in house; recognizing state-of-the-art technology that is not immediately commercially available on a system; foreseeing functional capabilities of systems on the technical horizon; and identifying whether the requirement is beyond the capabilities of systems on the technical horizon. Study

Computer-integrated manufacturing (CIM) system is simply the manipulation of computers in manufacturing products or other activities where final products or other activities are the main concern of this system. CIM has a big role regarding to the development of a product concept that may exist in the marketing organization which includes product design and specification, commonly the responsibility of an engineering organization; and its extension through production into delivery and after-sales activities that reside in a field service or sales organization.

CIM systems had come into view as an outcome of the developments in manufacturing and computer technology. This integrated computer aided manufacturing system, operates on both hardware and software. The software is simply what runs the factory or it is the brain of the factory. And the hardware is what makes the machine functions or run, or simply hardware is the muscle of the factory. These systems run on efficient output process. This means that the hardware and software works in the factory together. They should be not separated because as a unified unit, it operates for the peak benefit of the whole factory.

CIM system divided every individual "center" of the factory into work cells. As work cells, they are then divided into individual stations. The stations are broken down to the individual processes and this process are what metamorphosis that raw materials into actual product. It may sound interweaving, but it streamlines the whole manufacturing process. This also allows the operations to change any necessary things that should be altered to the system without shutting down the whole system. In this way, optimizing production and its good quality will be highly obtained.

Analysis In spite of all the positive outcomes of the computer-integrated manufacturing system, there are also problems or key issues arose that needs to be ponder carefully such as the equipment incompatibility and difficulty of integration of protocols. The integration of different brand equipment controllers with robots, conveyors and supervisory controllers is a time-consuming task with a lot of pitfalls. In other words, the time required for software, hardware, communications and integration and large investment cannot be financially justified easily.

Another problem is data integrity. Machines react clumsily to bad data and the costs of it upkeep as well as general information systems departmental costs is higher than in non-CIM facility. Another problem that evolved is to try to accomplish in programming extensive logic to be able to produce schedules and optimize part sequence. There is no human mind that is to put into place of this approach in reacting to a dynamic day0today manufacturing schedule and changing priorities.

On the other hand, integrated manufacturing is neither a universal remedy nor should it be embraced as a religion. It is an operational and tool that if executed and used properly will provide a new dimension to competing. Eventually, it will introduce quickly new customaries high quality products and delivering them with unprecedented lend times, swift decisions, and manufacturing products with high velocity. Conclusions and Recommendations Computer is one of the models of the information and communication technologies in manufacturing.

There are factors which are involved when it comes to the CIM implementation and this includes production volume, in order to make the <https://assignbuster.com/essay-summary-of-internet-cafe-business-plan/>

integration, the experiences of the company or personnel is highly concerned also the level of the integration into the product itself and the integration of the production process. When a company wants to integrate the computer into their business, they must be careful in starting manipulating this system for this undergoes a complex process. Computers, made an enormous impact regarding on the speed and accuracy of the production process.

With the help of this system, it is now accessible to create high quality outcomes in just a short period of time and it is hustle-free and less effort not like in the previous times, it would have taken a number of days to make the same products with no assurance that they would all be able to have the same quantity and quality. Computer-integrated manufacturing is a very interactive and hands on system. If it is applied appropriately, it will surely increase efficiency and enhance productivity with fewer errors to the whole factory. References <http://www.computerintegratedfacturing.com/>