

Reduction in Economic Cost and Production Time for Development of a 3D Printer and its effect on market Economic

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Abstract

Personalisation and privacy of products generally do not depend on valuable trends for new technology companies, such as 3D printing, helping this trend to develop further. Companies that offer production systems for technology are essential, rather than demanding support for the Industrial Product-Service System (IPSS). This study is a relatively contemporary concept. That demonstrates the paradigm shift in how a business intelligence company trades. The central indicator of innovation is open to promoting the process of opening to the outside world. Open and perfect innovation will be a more messy communication, participation and decentralisation with innovation rather than an original, innovative sculptor when companies and others succeed in applying the most revealing innovations. This will modify and process existing innovation systems in the region. This article presents a method based on two key concepts that use rapid prototyping and other product development processes. In this research, 3D printers can benefit the product development chain. The main result is a reduction in time and cost, which can avoid future losses in the process due to the speed of production, which helps to get the prototype in the early stages of the project due to the flexibility of new technologies. Such phenomena have been developed, and the assessment of technology for creating a reserve cost structure is unique in the IPSS pasture. Companies that calculate costs and investments can improve the effort and quality of their products for free.

Keywords: 3D Printers; Economic Cost; Product development; Reducing Time and Cost; Industrial Product; Service Systems; innovation;

I. INTRODUCTION

Load generation technology is any technology that produces unwanted components, creating or combining layered quantity elements if possible. Packaging technology increased by 35.2% in 2013 in this area. General increase of production equipment [1] The introduction of machines and services for the

production of existing preservatives is estimated at the US \$ 4.3. billion, equivalent to 2.12. Conservative estimates of all equipment used to promote 2% [2] are expected to have sales volume in this area, 7.9 billion in 2016, 2020 as expected, 2020 will be \$ 12 billion. He is trying to encourage the construction of \$ 132 billion [4] of salaries in this area during protection or 3D printing. Quality is often due to a lack of staff or equipment. The tax, bounce rate is exceptional, and the industry standard quality tax is virtually unavailable. To achieve products of unparalleled quality, companies must invest in a variety of facilities to improve quality and commitment. A detailed analysis of existing production costs and the evaluation of possible improvements revealed 59% of wage expenditure in this area and 32% in five years. [5] Because the purpose of wisdom seems to be a large salary here on a private fund. The benefit should be evaluated individually before activities. The 3D printing industry (fill production) is in the form of forms of interchange, production and chain of thought. Functions like tools and resource usage become obsolete and replace the small form of production. Inform and maximum dynamic dentistry. In the long run, the production of preservatives helps to shift from mass production to many improvements. Now many branches use protection production. Production of consumers developed in different contexts, additional printing and 3D printing. Intellectual property is a contradictory answer. [6,7] Links that link 3D printing in industry and 'labs' tend to be professional learning, customer-focused innovation, and urban development. So far, however, there are examples of clandestine manufacturers that have not helped consumers produce 3D prints in their childhood. Therefore, additional development is integrated into the context of convergence and change based on crowds. Within standard consumer 3D printing, 'fabulous labs' tend to create professional learning, urban development, and collaboration in the craft and creative industries. Equality may be possible. The link to promote regional work and development will emerge. However, depending on the strategy and areas of interest, specific issues and

parameters, intensity and orientation will begin. Technical innovations in the production of 3D protection and printing programs in Europe are accelerated and supported by special models that require more research and development, to speed up, encourage work and bring tides. It is promising for professional learning; customer-focused innovation and urban development. However, until that happens. With the progression of technology, many organisations and companies are investing in innovation to develop new products, so that follow the current era, due to strong competition in the market [8-10]. Globalisation has increased competitive and innovative pressure, not only for the design of products but also so that companies can enter and survive in the market. New Disruptive technologies have emerged in recent years to adopt a method of manufacture of products in the shortest time possible. A technology that has contributed for this scenario is the rapid prototyping (RP) using the three-dimensional printing (3D) which is a product manufacturing process directly from a model computer, eliminating tooling, time and cost. This paper will highlight this generating equipment that has recently appeared on the market in which the idea Initialis to meet the needs of industries to reduce cost. Allowing obtaining prototypes at an early stage of product development, with the possibility to carry out tests and discuss new ideas before heading to the preliminary stage process, which consequently would have a high cost to the need changes and also bring harm if it detects some error [11-13]. One of the well-known factors on the development of products is the degree of uncertainty that the beginning of the process is very high, decreasing with time. It is just at the beginning, which is selected larger amount of constructive solutions. For decisions between alternatives early in the development cycle are responsible for 85% of the cost of the final product. The modification cost increases throughout the development cycle because every change, a greater number of decisions already taken, can be invalidated [14]. From the information were created new successful methods to develop products, structured in stages promoting integration with new areas and implementation planning. One of the main and more important integrations and Product Development Process (PDP) is in rapid prototyping technology that allows the development of components, functional prototypes and objects in the shortest time possible, within the limits of products through 3D printing [15]. This study provides information on deep thinking about how to initiate innovation in this way and also provides support for the technology that responds. This will help stakeholder participation in production and costs. Technology and concepts impress innovation and also create impressive impressions in production, as well as innovation in 3D printing. It can not predict that 3D printing will affect society as much as a

country. However, be confident that 3D printing can impress the revolution. However, the industry uses both concepts in different ways and at different densities. Evolution is advancing rapidly, and it is unlikely that the intention of the plan creators will be permanently maintained in the rapid multidimensional changes in the manufacturing sector. Although the only task of education is to develop ideas to initiate innovation and mark 3D printing, other tasks are to reveal predictions and facts based on existing policies and research. Social innovation and 3D printing for industrial communities and creativity.

II. 3D PRINTING TECHNOLOGIES

Wherever there is a three-dimensional object, the additive production is printed by an irritating layer of material and a counting layer different from the conventional cleaning process. The first step in 3D printing is to create a digital model of the object to be printed. It is usually done with computer-aided design (CAD) modelling software or using online web services made by an estimated 3D printing platform. Also, 3D scanners can be used to ensure the unwanted development of existing objects. They can create 3D models using the built-in smartphone camera as well as the actual 3D scanner, which should be quite expensive for mobile applications such as products made by Autodesk. When the object is printed, the three-dimensional development of the object is divided into continuous layers only for computational printing. Today, the most used material for 3D printing is plastic (ABS, PLA, nylon), but you can use metal alloys, ceramics, wood chips, salt and even honey and chocolate to print. Nowadays, in general, printers produced or for consumers can be printed separately using separate materials for calculation. Over the past few months, many printers have been printed to print with a variety of devices, introducing the range of objects that can be produced with 3D printers. They have continued to grow: prototype moulded parts, tools, tools, organs, organs plastic toys, musical toys, His leading clothing is food, furniture, kitchenware, although 3D printing technology has initially helped in manufacturing. However, the ongoing cost reduction involves them with two SMEs, the cheapest laser printer Buccaneer spends at \$ 350. 3D printing is suitable for teams owned and owned by small or large companies. Many companies are working to combine 3D printing in their company: in addition to being used by the company, there is an upward trend in the use of 3D printing. While family 3D printing is often excluded from amateur activities, access to key players in that promotion is likely to be shown otherwise. In May 2013, Staples became the first US retailer to promote 3D printers in the US, months later of Walmart in the UK. In July 2013, Maplin, High Street's appliance retailer, announced printers, supplies and 3D accessories on 205 printers. [18] So

the main competitors were Currys and PC World in France. Users of retail consumer electronics networks continue to announce 3D printers and accessories and related accessories in the fall of 2013, while Amazon has launched a 3D printing online around the world. In June 2013, printers who encourage the sale of plastic fibres, books, software, parts and equipment, as well as the sale of 3D printers and significant players were using 3D printing as a service. In July 2013, eBay announced it had heard the full name of eBay's iPhone, allowing users to browse and approve custom print products from 3D printing companies such as MakerBot, Sculpteo and Hot Pop Factory. Recently, Selfridges, the only high-quality product in the UK, was launched compared to 3D printing services in the supermarket market. Christ has arrived where customers can watch the stakes and 3D objects of the 3D printer. ASDA, one of the three UK supermarket giants launched 3D printing services in 50 of its supplies in January 2014 and its foremost competitor, Tesco, is furthermore planning to

commence services. 3D printers are machines for rapid prototyping, developers to create innovative products in the shortest time possible, differentiating the machines conventional. At the beginning of this new technology, the machines were used only in industries, but the process has expanded, and the primary goal of researchers in this area is to adopt its use in offices and private homes. The development of prototypes for 3D printing is like ordinary printers where the head is depositing the ink on the paper, line by line. In the three-dimensional printing system product is developed graphically in the 3D computer software and then the model is converted into coordinates, dividing into flat layers according to Fig 1, which are transferred to the printer in machine language. The material construction present in the printer head is deposited on a platform according to the final design, forming the prototype to be obtained. The process printing uses plastics, resins, polymers and some metal photo specific depending on the technology used [19].

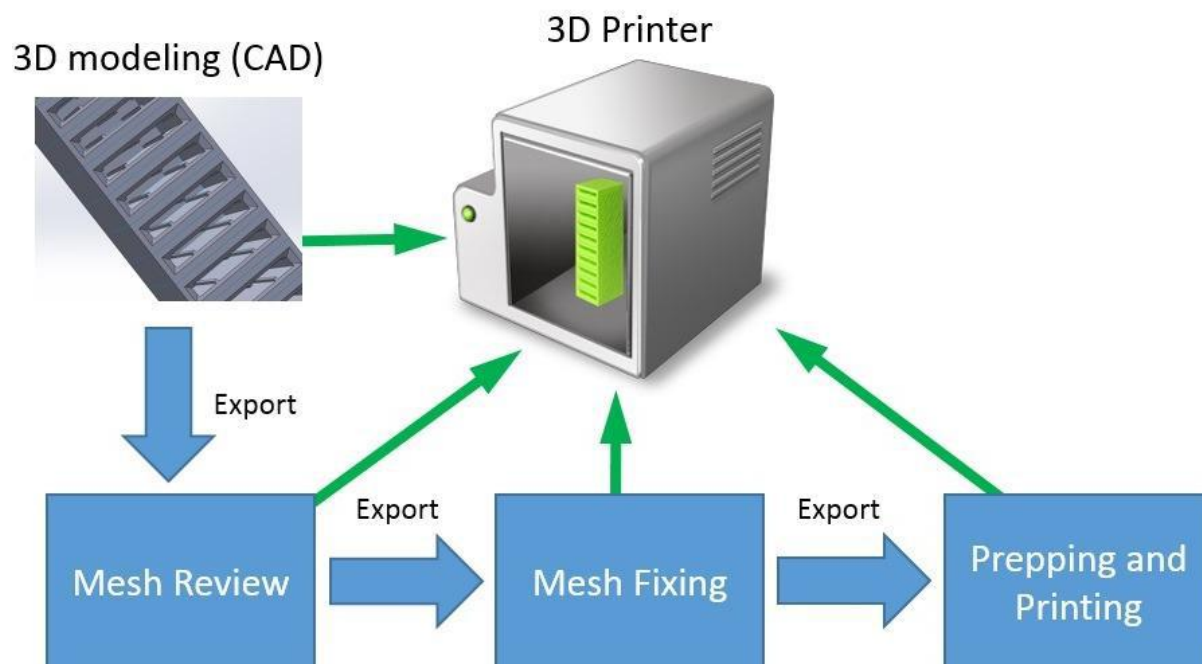


Fig. 1 Description of the 3D printing process.

A. Literature Review of 3D printing

The 3D printing emerged in the late 1980s, through technology Rapid Prototyping and Rapid Prototyping (RP) is a manufacturing process-based filler material in flat layers directly from sources Data generated by the system computer aided design. The method enables designers to quickly create tangible prototypes of their projects, rather than three-dimensional fig. 2, which can be failures representing a fitting, or incurrent prototypes take much time for execution [20]. In the past, the efforts of AM that used cement for the first time were carried out through a process of medium level connected to

traditional powder and three-dimensional ink nozzles. They include the creation of a collection model (FDM) to combine the sand layer with the Portland reinforcement. There are many related groups, including the significant AM development for construction applications that use FDM or 3DP distribution routes, although they are not reliable. However, pay attention to the materials and interests selected. Among the literature that has not been completed in ten years, the three known projects are in progress. [22]

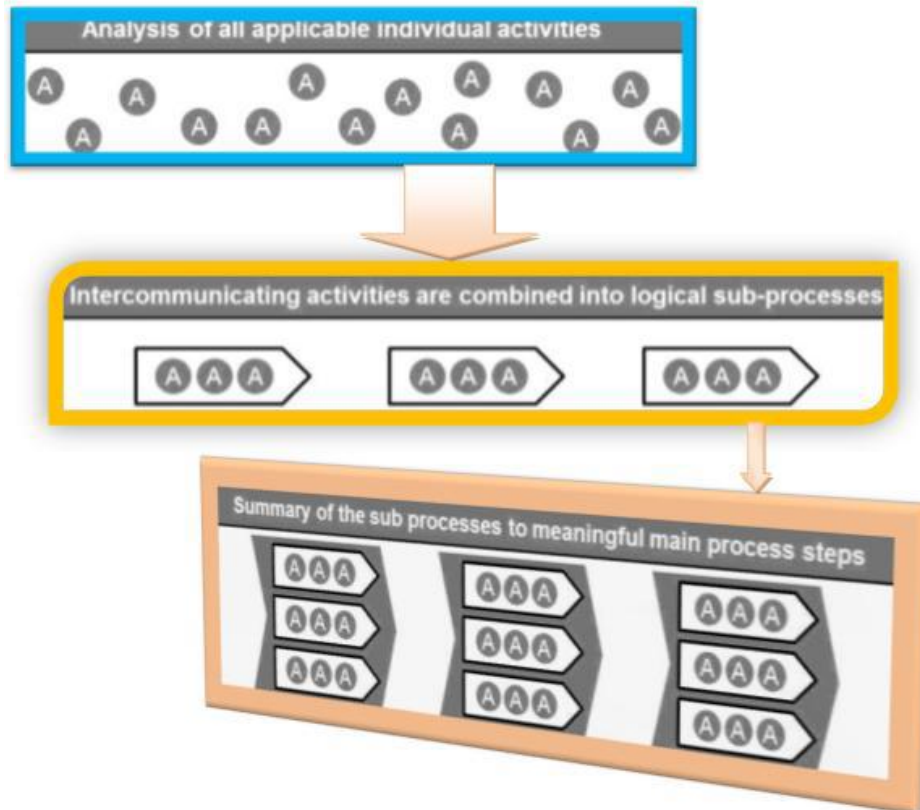


Fig. 2 Procedure of Model Concurrent Engineering for a process cost system.

The leading contour preparation project is based on the extrusion of two-layer cement equipment to form a mould. Extrusion increases the roughness of the sphere using a spatula during extrusion. The logic is designed for the building process in the region because the 3D printhead is mounted on the top cover. The city's appliances have many disadvantages. DC devices are limited to vertical extrusion. Therefore, the use of 2.5D topology, additional vertical chambers of flat shapes, old moulds and trowel systems can be very complex to use, depending on the size and impact of the printed object.

Also, continuous casting is interrupted by a casting due to poor mechanical properties of continuous pressure and compression reinforcement, providing the appearance of locking zones that dilute the various connections. The Loughborough University print project is the scope of the print head design used for the collection of cement equipment and mounted on a crane. [21] The materials used in this research are very useful. Better than being involved in the project. The excellent mechanical performance of the material combined with the relatively small diameter of the extruder provides specialised geometric control. However, to maintain dimensional accuracy. The concept of integration in product development follows the guidance of concurrent engineering and concurrent engineering, which have recognised the high production cost and product development, through market analysis, trade and integration with the product design [22].

B. 3D printing and its effect

It inflicts quite apparent with the intention of 3D printing technologies with the makings to be highly disruptive, and principal to noteworthy affair develop innovation. One of the ways to involve made public affair develop innovation is to get on to noteworthy changes to the various affair develop components [21]. However, the effect of 3D printing on affair develops innovation goes far further than with the intention. Besides enabling an affair innovation by changing affair components, 3D printing technologies furthermore be inflicted with the makings to exchange the way affair innovation is conceded made known considerably. The following two sections point these necessary changes. One of the advantages of the 3D printing process is a diversity of applications in many sectors, not only limited to the creation of prototypes to meet production industries, but the system has also entered the social and academic areas. Recent discoveries and the development of powerful tools are integrating rapid manufacturing in some applications, even in air of medicine custom prostheses, tomography and anatomy of the human body. Until then, some barriers found in places difficult to access the body of the human being, regions delicate, especially the brain. With the integration of RP performs CT scans Computer, and consequently the 3D printer can print the model Physical using other material, facilitating the analysis region. The method is also able to manufacture prostheses using materials such as

titanium alloys [22]. 3D printing is also being applied in the field of architecture and construction civil. In recent years, some architectural firms have adopted the technology in making models, and 3D models prototyped. The engineering segment has placated the PR machinery to manufacture houses using these recent discoveries through studies, proving that this can be a significant advance for humanity due to the speed and flexibility of the new technique [23].

III. RESULTS

A 3D printer is a result of the diversity of methods used in PR to get prototypes and objects through building materials. From data obtained by exploratory research, analysing the works and productions, found some positive results regarding the use of 3D printing the creation of a production process. The main advantages are the reduction in manufacturing time, as a relatively fast technology, since the process is performed in a single step. Reduction of cost, since it is possible to obtain prototypes still in early stages of cheaply due to the materials used and avoiding losses in case failures. Moreover, they still can build parts with complex geometries and difficulties in other processes, greater accuracy and quality end products, better results in tests and trials with the prototype for 3D printing. The printing process is a handy tool with product development, replaced the traditional concept, facilitating achievement products, and prototypes. Since the RP area becomes an integral part of the Process Product Development (PDP), this gain flexibility makes changes in the project with relatively low cost, because tooling is dismissed. Moreover, yet the use of 3D printing has a significant advantage about other processes since the technology does not require special tools for fixing or moulds, prototypes are obtained in less time without the need for calculations of geometries and machine motion trajectory [23].

IV. CONCLUSIONS

This research presents the results of ongoing research projects. In the beginning, we chose to evaluate the cost model that showed complex grasses of difficulty and elements of literature. Based on a positive vision, it will be challenging to identify all the activities related to the cost, the subprocess and the first steps of the process. Use them at the beginning of the search results at prices caused by different cost functions and all subprocesses have been implemented as a calculation tool. In conclusion, the incoming 3D printing market should not overcome the main obstacles of other methods until then and will not succeed. The results of this technology are useful only when they are not accepted in some cases and become an essential step in the creation and development of products. The main characteristics and parameters of the cost structure of the stabiliser

production process are determined by the sensitivity analysis using cost calculation tools. It shows that it can be used as a production service system. The stabiliser is a valuable decision tool for companies that use production technology. It can specify the cost structure and can evaluate the capital in advance. Each step depends on the classification or negotiation with the group of this research project, or the work that analyzes 3D printing also aims to consolidate the industry by facilitating the production process without having to spend many hours — months in the calculation of project performance. However, everyone can create their objects as they imagine. In the future, people expect to be able to use their equipment in their own homes, investigate this new technology and improve the compactness and ease of use of the new 3D printers.

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