

## AN INNOVATIVE APPROACH TO INCREASE THE EFFICIENCY OF PRODUCTION PLANNING PROCESS

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**Abstract:** Globalization and aggressive competition increases the demand on the pro-customer approach and flexibility of manufacturing companies in all sectors. Improving the quality of products at lower prices, forcing manufacturers carefully evaluate the cost of value-added offered product or services. If the manufacturer wants to be able to compete a manager must be effectively in planning use information and communication technologies. In the case of a production process, that does not only implementation of modern ICT in logistics informatics, but mainly it is innovation in terms of quality and quantity of information about material flow in benefit of increased the efficiency of operations planning in manufacturing.

**Keywords:** innovation, planning, information-communication technology, targeted marketing

**JEL Classification:** D24, O32, M31

### 1. INTRODUCTION

Customer orientation, targeted marketing plays a very important role in determining the strategic objectives of the company and of course by them arising the procedures the planning at operational level. If we take for a company as a comprehensive unit, where each element shares his strategy in the form of focusing on the end customer, then the unqualified property must be sufficient flexibility and adaptability. Not only the horizontal level decision-making, but also in the vertical direction decision. While flexibility in production processes we understand not only in time but also in technical and technological dimension. To ensure the ability to flexibly adapt to customer requirements without significant cost, it is essential to have secure access to sufficient quality and quantity of information in real time. Innovate in business planning is also effectively combined strategic, tactical and operational planning. Background should be both, general innovation strategy and secondly individual strategies, including special marketing strategy.

### 2. PLANNING IN CORRELATION TO TARGETED MARKETING

Targeted marketing as a way of placing on the market and our business strategy choices determines the scale of production within the meaning of the necessary technology to produce according to the needs of individual customers. [1]

Factors that affect the enough flexibility and adaptability of production are, in particular:

- Human Capital
- Technological equipment
- The quality and quantity of information.

#### 2.1 Human capital

Targeted marketing and orientation on a particular market segment determines the specialization of production and human capital that the company to be able satisfy customer's desired product quality is therefore important that the director, respectively Marketer thoroughly mastered the problem of the target market segment and

specialized in the fields back with the given issue. Thus qualified personnel with experience in the industry is able flexibly respond to changes in the production process whether the during the project, respectively production from the perspective of the customer's needs with such an increase costs that exceed the value of the order without margins. If the manager is a specialist in the art is able to competently consider the work of colleagues also the resulting product and the overall effect of production. But we can not combine the ability to respond to changes in the worker, specialist only with his versatility.

In other words, if a company directs his production, value to the customer to other new market segments, it can cause deficiencies in production planning. If the director does not have enough theoretical and practical knowledge to give informed judgments timeline for production planning and project time interval, can not efficiently plan production or the project. This may cause the lack of worker qualification - as inadequate technological equipment - may result in the quality of the product ordered by customers.

#### 2.2 Technological equipment

Each specialized production is characterized by a given technology, determining the added value for the client, as well as profitability, cost efficiency and finally profits. Given efficiency can be increased either by introducing new technology and its incremental or fundamental innovation. Under the innovation we understand for example the implementation of automated control systems (hereafter ASR) and data collection in the complete production which directly increases productivity of technologies in production and lower costs in production. The introduction of ASR does not entirely exclude the human factor of production, but it accelerated cycle of production and minimize error rates. Comprehensive control and management changes in the production process still ensures particularly knowledgeable person in managerial positions. A key target in view of technological innovation is more than meet the requirements / needs of customers.

From the perspective of customer orientation, innovation strategy to provide increased adaptability to changes in production technology for manufacture or production cycle without extra costs, respectively. increase the final price of the product for the customer. To offer greater added value and quality for our customers means, create a competitive advantage in this market segment. From the aspect of increasing the efficiency of in-house production planning and management at all is therefore necessary to increase the level of the preliminary (Bata) calculations of products. This is a necessary basis relevant information and knowledge.

### **2.3 The quality and quantity of information**

The value of quality information is also in the planning process very important, so it is very important that the company had adequate information system which provides at each level of the managers information about production in good time, quantity and quality. This important information work with the information systems is associated with the building of adequate strategic information systems (SIS) with the management information systems (MIS). The required time availability and quantity within each level of management is different, but the quality of the move with the requirement to increase the efficiency of the planning with the management of the company is fixed. SIS is created by the top management, MIS at middle management level (middle management). Information systems (IS) must have the high level and the first level of management (operational management of the company).

If we focus on the lowest, at the operational level of production planning, the time dimension of the needed information is or should be as far as possible "real time". It is de facto the response of demand and income information to applicants without the necessary time delay after the business-reporting process. The planning process is based on the ability of managers to predict "behavior" of the production process before the change and innovation processes. It is therefore important that the manager had real-time access to information which is linked with the production process. In the event of changes requested by the client, manager must competently evaluate these changes in an already potentially to the production by the upcoming production process. This should be made functional and flexible enterprise change control management.

Information system, namely logistics information system (the operational level), which directly monitors the material flow in production cost is easier to upgrade than the actual technology or production logistics arrangement. And despite the fact that innovation of information system is difficult measurable innovation as the technology itself. At present, innovation processes and products determined by the effective implementation of information and communication systems and technologies.

### **3. INNOVATION AND IMPLEMENTATION OF ICT IN THE CONTEXT OF EFFICIENCY GAINS PLANNING**

ICT are constantly evolving, from our perspective deepens our implementation options to increase the efficiency of not only planning, but overall course of production and integrated reproductive process. In that the core of value added and quality products to customers is

"born" already in pre-production processes, particularly in research and development of a complex product development, it is necessary to effectively link the pre-production, production and post-production processes in the company. And this aspect of innovation planning and implementation of the latest generations of ICT. There are a number of solutions that result especially from the specifics of the actual production and the necessity of its goal-managing the project.

For this reason is important to specify and design not only way to transfer data, but also the processing of acquired data to the information they work with all levels of management. So if, it is possible for upgrading the information system, respectively. logistics information system [2] to allocate sufficient investment to enable innovate not only collect data but also evaluate the information gathered. It is therefore appropriate to establish a comprehensive information system for the entire enterprise (eg SAP, Oracle etc.). We provide as well as high recovery costs to upgrade data collection system. In practice, implement and effective choice for peace "found" the implementation of ICT means to know and respect the determining factor selection ICT [3]. These include for example:

- The range of production, in terms of production levels, the number of departments
- Method of storage and transfer of stocks, not only the number and distribution warehouses, as well as all the tanks in production.
- How to transfer material in the production of, or material flow (conveyor belts, forklifts, etc..).

When designing complex systems not only new, but also upgrading existing systems, we should evaluate the degree of automation<sup>1</sup> of the company processes and logistics. By solving the control of individual processes and the degree of automation in the form of means of automation (control machines or robots) also depends on the level of investment and way to solve the data collection process.

For workplaces that are managed by controllers (PLC) is possible in many cases to obtain information about the production at that site. Alternatively, use only part of the information on the movement or course processing for a given workplace.

Nowadays every production uses means of automation , differs only in the extent of its use. While each control system is modular, in other words, is it possible to expand the communication modules, which allow to transfer data to master data evaluation systems. The modularity of then control systems gives us the possibility of savings in the implementation and innovation of existing systems in the form of extension sensors, input cards or optional communication modules. Portfolio of companies offering automation solutions are sufficient for us, to find a solution for every production.

When selecting a particular data collection system must be determined what the investor expected of system, not only at the beginning, but in the future. Since the initial

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<sup>1</sup> Below the level of automation is meant way of controlling processes, whether workplaces, and to what extent have the control systems from the perspective of load time operator in the performance of the manufacturing process



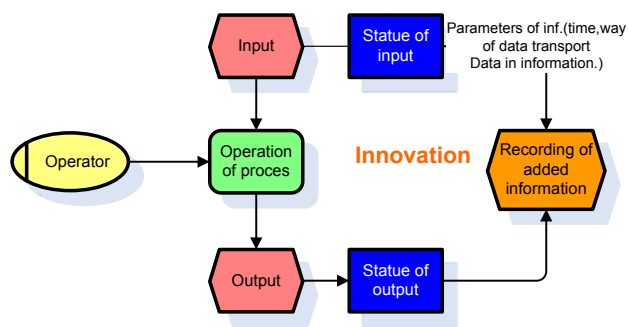


Figure 2

## 7. CONCLUSION

Innovation an information system should be part of the plan investments over several years. So it is not a one-time affair, but a permanent managerial activity in the company. The latest generation of ICT constantly bring new opportunities for increasing the efficiency of production processes and scheduling each production manager, respectively manager at the operational level or higher

should continuously monitor this development in order to realize progress in the production process. It is also an important role for the IS department and ICT, which are also commonplace in many companies. When creating a new IS implementations or changes in the old information system it is important to configure the system to a level that was acceptable price / performance ratio in terms of future expansion at minimal cost. In this regard, the pay that well-chosen investment the company shall return in a few years and always helps not only an operative planning process in the form of submitted information on material flow production. It also helps in strictly necessary long-term strategic planning linked to strategic marketing. These are important guarantees of long-term competitiveness and efficiency of the modern enterprises.

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