

THE NECESSITY STUDY FOR PRODUCT DEVELOPMENT IN THE ENTERPRISE BUSINESS INTELLIGENCE

Sebastian Marius ROȘU, Marius GURAN, Luminița ROȘU

Abstract: *In the actual economic context, for survival, the enterprises must be permanent oriented to new products or services assimilation or existing products and services modernization. It is necessary than these new products or services to reach the established performance indicatives and to totality satisfy the customer's request, respecting the quality management principles. First step of manufacturing assimilation represent products identification and analysis assimilation/modernization necessity - activity that find an answer in the market study, technical-economic study and necessity study. This paper presents a model of necessity study realization and department co-operation in the enterprise business intelligence context.*

Key words: *enterprise, product, necessity study, business intelligence.*

1. INTRODUCTION

In the actual economy, the industrial society is penetrating evolving and existing markets of a consuming society with a variety of products intended to improve our activities and life conditions. Many of these products are unique; some are derivatives of existing products, while others are integration of a number of different products [1]. Today, the new enterprises try to implement the following concepts [2, 3]:

- All activity is realized among one process.
- The process is a transformation that added value.
- Process management realizes quality management.

This places new pressures on the product introduction process. There is the realization in the manufacturing efficiency for improving the quality and reducing the costs, but without growing investments in automation and in advanced machine tools.

Before the introduction of new technologies, new products or new services into the enterprise, it is important to have a good define answer at the following questions:

- What we have here now?
- What's going on here?
- What we need now and why?
- Which is, in the market, our place?
- What we intend to do?
- What we need for this?
- Where we intend to be?
- How we can to do this?

For become competitive, it is necessary for enterprises to increase the quality and technologic level of products and services conform applicable codes add standards, to have permanent new product or to make old products bettering, to satisfy the customers requirements, to respect the customers or partners contracts terms and conditions, to respect the market rules, the applicable laws and to have a good prices politic. An important factor for the enterprises in the products and services devel-

opment is to know to establish, to translate and to define the customer requirements using quality methods, tools and techniques.

The quality represents the products or services characteristics and properties assembly who confer this property who satisfy the explicit and implicit necessity. It is clear in the new economy context that for thorough success the enterprise must offer products and services that:

- satisfy a necessity, a utility or a scope clear define and satisfy customer expectations;
- conform the codes, standards and specifications and the laws;
- are available at a competitive price;
- bring the profit.

To improve European products and services competitiveness, European products must evolve into high-added value product and services. According to this, emphasizes are on [4]: continuous innovation in manufacturing processes as well as in products, increase Engineering and Design strengths, as the main European advantages, by enhancing science and R&D position, enabling technologies, such as innovative materials (smart materials, intelligent and adaptive structures), nanotechnologies, IT&C and mechatronics, and incorporate them into product designs, customized and with short delivery times products – to fulfill and even exceed customer's expectations, regardless of their geographical location; the business focus will increasingly shift from designing and selling physical products only, to selling a system of products and services (described as 'product/services' or 'extended products') that are jointly capable of fulfilling specific users' demands, and life-cycle orientation, to gain more opportunities for innovation and market development, more and longer-term customer relationships and better feedback from consumers.

Therefore, activity improvement is a priority in all enterprise. Necessity studies represent a modality to reflect these problem solutions. These studies can be done in one from the following situations:

- New products manufacturing assimilation (proper conception products or licensed products);
- New services assimilation;
- Existing products & services modernization;
- Production reorganization or readjustment;
- Manufacturing process modernization.

2. BUSINESS INTELLIGENCE AND VALUE

The enterprises marketplace value is representing the thing that distinguishes its business performance from all others. It is generally accepted that the value of every organization falls into one of three major categories of value discipline [5]:

1. *Customer intimacy*, when the companies try to understand their individual customer's needed, and will try to do everything is possible to accommodate their customers. These companies are definitely not cheap, because personal service is an expensive commodity; however their customers prefer to use them because they feel that they are sufficiently rich to justify the extra cost.

2. *Product leadership*, as companies that could be described as 'leading edge', because their value is that can keep you ahead to the customers of other similar companies. These companies are always on the top with new innovative products, new ideas that can keep their customer interest.

3. *Operational excellence*, as companies that excels at operational efficiency.

All companies tend to have a stronger affinity to one of the three categories. An organization needs to understand how to interact with its customers and how would like to interact with its customers. After this, the enter-

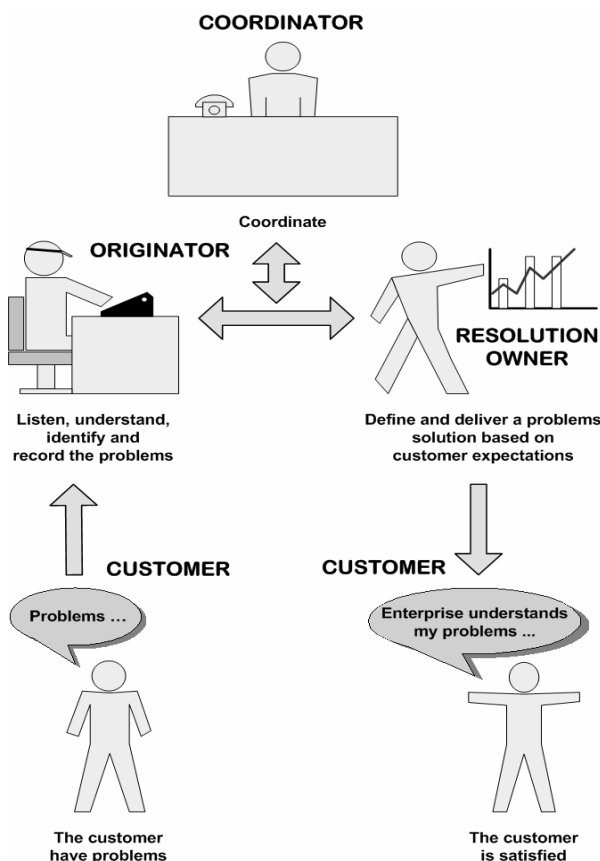


Fig. 1. Customer relationship management.

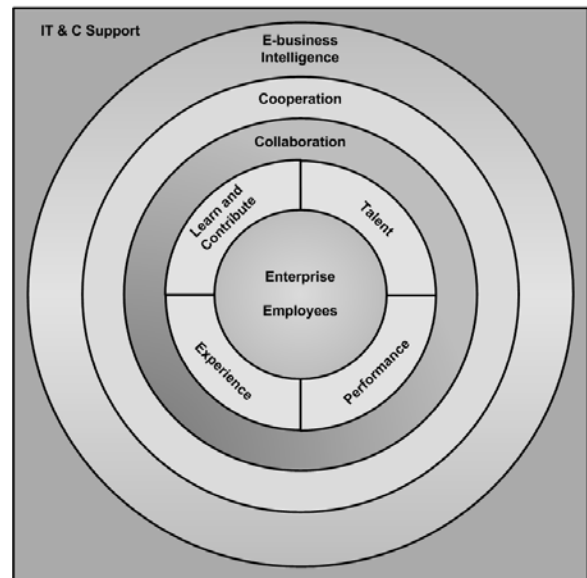


Fig. 2. Enterprise e-business intelligence.

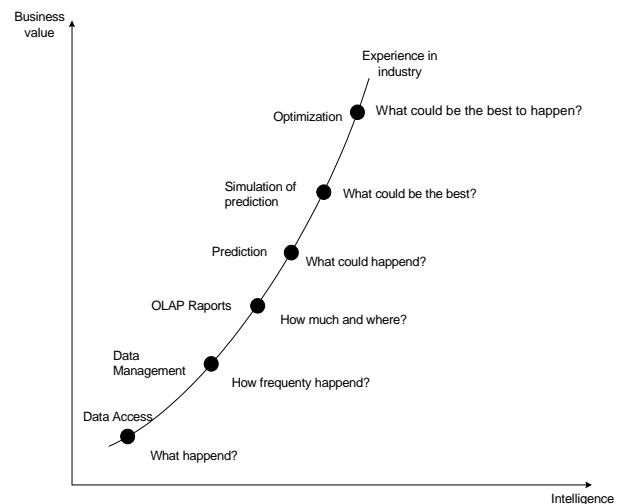


Fig. 3. Business value and intelligence evolution.

prises can start to develop a strategy to improve customer relationship management (see Fig. 1) and other e-business solutions, as enabling technologies and core technologies.

For the future, e-services and e-business, as were defined, require the enterprise re-thinking and re-modeling, with the system and applications design for an efficient use of new IT &C technologies (see Fig. 2).

The perspectives of this kind of manufacturing and economy are named shortly new digital economy. The connection between *business value* and *intelligence* can be represented as evolution (see Fig. 3), based on the experience in industry, in which the beginning is represented by 'data access', and 'what happened?'

3. THE NECESSITY STUDY

The study destination aim is to set off the factors who conduct to change generate necessity. In fact, this study reflects *the research theme finalized on a certain domain*. Generally, a necessity study must be mark out tree big subjects [3]:

- *General context in which enterprise evolving;*
- *Market study;*
- *Technical-economic proposal description and justification.*

First page will be contain the company name, the necessity study object, the name of necessity study supervisor/coordinator, the member of this team, the date and the context where the propose will be talk over and will be/or not approved.

In the first part, *general context in which enterprise evolving* will be included the following:

- Company name and activity domains;
- General problems regarding domain legislation;
- Some references related to applicable codes, standards and technical specifications;
- A prognosis regarding local and national certain changes as for products request who make necessity study object.

In the second part, *market study*, it will make a products evolution and/or technologies prognosis and will be present their marketing possibility. It will be included the following:

- A presentation of qualitative and quantitative request on market segment;
- A company products presentation with marking out the market segment whom address;
- A enterprise competitors similar products presentation where will be specified the price, annual products number sells, the areas where the sales have a maximum, the period when these products have a maximum and minimum market request, etc;

A concurrent enterprise's products SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis.

The last parts of necessity study, *technical-economic proposal description and justification*, must be contain the following sections:

- The proposal presentation – technical description with significance proposal definition;
- The realization tools in function of enterprise technical possibilities;
- Possible suppliers presentation (if is necessary – e.g. some components can't be execute in our enterprise but we find one or more producers) and present co-operation possibilities with they and with different company or research institute for propose realization;
- Necessary investments for propose realization – the costs estimation for designing, fabrication preparations, testing, technologies procurement, employees training, etc).

4. DEPARTMENT'S CO-OPERATION

All enterprise employees can have the necessity study elaborated initiative but for study realization is good to constitute an interdepartmental team, each department provides the specific knowledge to responsible person of necessity study realization.

In general, the departments involves are Marketing Department, Research & Development Department, Material Supply Department (include Procurement and Warehouse), Technical (Engineering) & Manufacturing Department, Quality Assurance Department, Finance Accounting Department and Commercial Department.

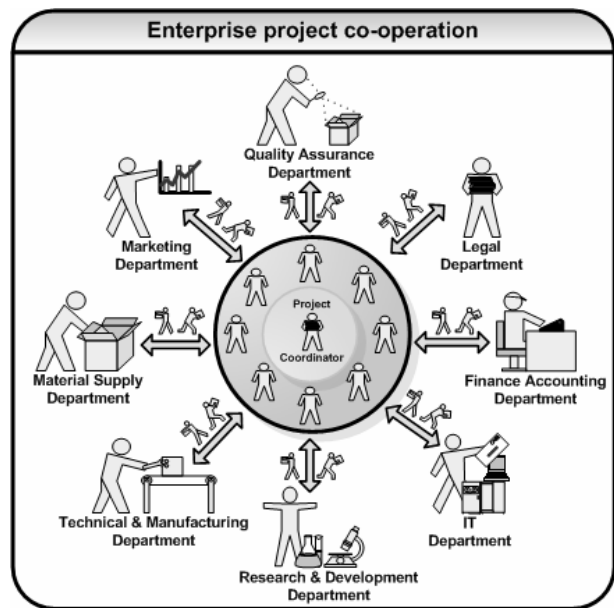


Fig. 4. Enterprise department's co-operations.

Actually, the necessity study should be seen as well as an interdepartmental project (see Fig. 4). These entire departments will have a representing in the necessity study project team and the management team will be nominated a project coordinator which will be supervised the team activity and will be maintain the contact with the enterprise management team.

Marketing Department will be realized the Market Study. Research & Development Department will be elaborate the project proposal, will make the product prototype (if is possible - if not virtual product prototype) after theme project analyze, will be establish the technologies. This department will be present the product realization mode considers the following:

- Constructive parts are under protection by patent;
- If all designing can be done in the enterprise, will be indicate constructive for new product or modernization product parts what already was verified in practice;
- If we have an existing products modernization will be clear specify the modification parts;
- It will be indicating the company who have the patent (if we take the licensed product) and the sales conditions of Patentee Company.

Technical/Engineering & Manufacturing Department will be study the enterprise product realization possibilities regarding:

- Product manufacturing, existing fabrication technologies who can be used;
- Deadline estimation from designing to manufacturing preparation homologate for 0 series and for manufacturing introduced;
- Manual labor necessary estimation for perform the technologic operation of product realized in series phase;
- Manual labor necessary estimation for special tools, devices and controller for technological phases;
- Necessary time estimation for testing, verifications for product admit in the series phase.

Finance Accounting Department is responsible with product cost price determination envisage the following:

designing costs, manufacturing preparation costs, homologate necessary costs and specialized means of production acquisition costs. In collaboration with Marketing Department and Commercial Department can establish product sale price in different modes in function of marketing possibilities, can make a comparison between product sale price and another same product and a recovery costs term analyze effectuate with product manufacturing introduced.

Requirements regarding product quality and will be providing by Quality Assurance Department namely:

- Product certification modality;
- Product execution conform applicable codes, standards and technical specifications;
- Specify requirements regarding the environmental protections;
- Specify requirements regarding humans and animals health and life security.

For new products this department will be realized a model at Warranty, Quality and Conformity Certificates.

The Material Supply Department will be delivering the lists with materials, raw materials and equipment based bills of material issued by Technical/Engineering & Manufacturing Department.

5. CONCLUSIONS

We advance here a necessity study model and a work mode for study elaborations. The study finalization success depends of interdepartmental team co-operation, relations work and of communications quality between necessity study coordinator and management team. It is good for management team to know from the beginning what the costs (human and material) for this study are and if this study is long standing or short-lived.

Even if some studies will not have applicability will be make a vision about our enterprise possibilities and the concurrent company's situation. These studies will make an image regarding our employee's capabilities and future forecast. With this occasion will be mark out the quality procedures level implementation and if quality

system procedures, documents and other information's are on record in the new enterprise business intelligence.

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Authors:

Eng, Sebastian Marius ROȘU, Special Telecommunications Service, IT Department, Bucharest,

E-mail: sebastianrosu@stsnet.ro

PhD, Marius GURAN, Professor, University Politehnica of Bucharest, PREMINV Research Center

E-mail: mguran@mix.mmi.pub.ro

Eng, Luminița ROȘU, GRUP ROMET SA Buzău, Department