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CERCETĂRI PRIVIND IMPLICAȚIILE SCHIMBĂRILOR TEHNOLOGICE SPECIFICE DOMENIULUI MECANO-ENERGETIC ÎN EXPLOATAREA OPTIMALĂ A CANALULUI DUNĂRE MAREA NEAGRĂ

RESEARCH ON THE TECHNOLOGICAL IMPLICATIONS SPECIFIC TO MECHANICAL ENERGY IN ORDER TO OPTIMIZE EXPLOITATION OF BLACK SEA DANUBE CANAL

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Changes, technological, strategies, models, methods, cavigable canals, problems multi - criteria , mecano - energetic, mechanical equipment

ABSTRACT

The importance of technology for economic development is widely recognized, given the impact it can have on the success or failure of business survival of the companies especially in an environment of intense competition and global. In the early twentieth century art technological environment included an increasingly broader means, processes and ideas in addition to tools and machinery. Technology has become all over the world, a major agent for change in the structure of markets and industries.

Over 50% of long-term growth comes from technological changes that increase productivity and causes of new products, processes and materials industries with costs lower environmental impact.

Technology transfer at an agent appointed supplier to a receiver is appointed agent under certain conditions a strategy leading to technology transfer efficiency with high results. Technological strategy is the process by which companies use their technological resources to achieve its objectives.

The purpose of technology strategy is to identify, develop and stimulate technologies that will be critical for long-term competitive position of the company. These technologies should have potential to create value for the customer.

A coherent technology strategy focuses on customer requirements, as identified as likely to become today and in the future. But if the company decides to buy the technology, it will engage in a process of acquisition of the technology in question to achieve technology transfer and sustainable performance.

Given that Romania's economy integrate European and global success equation must be found based on a vision to direct the request to a target to have multidimensional characteristics, uni guarantee success. The key issue whose resolution will make us understand what happened to the Romanian economy has moved from the profit motive as a singular factor in a more complex approach to performance.

Changes in the external environment of any organization are generating opportunities to modernize its data, so as to enable an intensive and extensive.

This paper aims to find and provide a recipe for success to enable any organization to maintain the safety of a fully successful in a market in constant motion. Guarantee the success of this approach lies in the way the promoter of change understand when and how to effect change.

The author believes that every person has adequate economic and technical training in this thesis support and support to start, promote, support and drive technological change, with a guarantee of success.

Objectives The DOCTORAL

Any study is conducted under a research plan that is more objective starting point that should be checked during efectuariii research. Goals are what the researcher believes that it has met during the study and is a guarantee of carrying out an effective technology tranfer. ***Objective 1*** - research on the implications of technological change must explain why the same changes generate different effects in organizations (companies) different?

Objective 2 - In the study to be conducted should be borne in mind that a stable society is more difficult to promote technological change, promoter of change having a special role in this regard.
Objective 3 - should be checked if the proposed technological changes have a negative impact on the environment.
Objective 4 - Any company must make technological change a habit to always maintain a high degree of technology at.
Objective 5 - Case Study – CDMN
Objective 6 - theoretical and practical study findings should have applicability to all companies whether domestic or foreign, national or transnational.
Objective 7 - The results achieved in the research that this study should be considered a guide by the way have promoted technological change in general and one in particular.
Objective 8 - Research methodology in the field of technological change.
Objective 9 - Multi-criteria modeling of technological change specific mechanical energy sector.

I believe that the main objectives were met of the thesis called "**Research on the technological implications specific to mechanical energy in order to optimize exploitation CDMN**", as described below:

• Public and private organizations, should know that while the life of the products has been considerably reduced, aging related technologies generate increased innovation, they have to prepare appropriate changes in response to market requirements.
• The plan results technological change promoted efficiency is ensured by the fact that a change must be greater than they succeed.
• To find the causes which produce different effects technology in organizations (companies) different.
• Once advocate change occurs to destabilize the existing condition of the duration of which (very low) success depends precisely change.
• Stable organization is more difficult to change and technological change promoted success depends precisely on the ability to adapt to changing conditions in the performance or terms thereof.
• Changing promoted must not contradict the environment, meaning it is not affected.
• Change of any kind must be a natural function of an organization.
• Specific technological changes proposed should allow an optimal exploitation of the CDMN.
• Although the company studied is relatively young (30 years), the technological level is high but obsolete, changes requires a high degree and amplitude shock generator being a success.
• The high degree of differentiation between the technology changed and promoted indicates a high obsolescence which makes the process of change is laborious and complex one.
• The results of the theoretical and practical to have a general applicability to all domestic companies, foreign national and transnational.
• The paper type to guide the way how to deal with change in general and in particular technological one.

Research conducted in the thesis aimed deploying technologies that are superior to those in office to reduce operating time and increase transport capacity to the designed value.

The reference of this paper comprises an electromechanical knowledge engineering, mechatronics, industrial economics, organizational culture, and powerful result of research of a high scientific level. In-depth knowledge of the technologies proposed in this paper and the choice of the timing of the change are the premises of an effective technology transfer.

In this spirit choice of questions was determined by a number of reasons both personal and general interest characteristic time and the times we live in and I was trying to mold them so that we can afford to live a little better and decent.

Organizations in our country must carry out technology transfers that allow achieving successful ones so as to live up to the requirements of a global framework for competition and meet the requirements of a changing global market.

Across the world, there are changes, but large-scale changes are being made to reduce the gaps created over time as a result of centralized development programs.

The globalization of markets has reduced product life amid increasing demand for products which caused increased competition and innovation.

CDMN is the shortest waterway from the Danube to the Black Sea and the largest segment of the east-west freight line from East to West.

The study conducted in the doctoral thesis aimed to research the implications of technological change specific to mechanical energy in order to optimize exploitation CDMN.

The first part of the study is theoretical research to practical applications in any society (organization, company, etc.) and not only Romanian, subject to change of any kind.

Periodic changes are a result of normal wear and tear and obsolescence of technologies and products that due to changes in market globalization system while the local and regional area.

Chapter 1 of the thesis called "Current state of research in theoretical mechanics and energy sector-specific changes" presents the tools and concepts used in promoting changes in general and the specific ones in particular.

CN ACN SA Constanta is a company that is leading the economic development of 80s of last century.

The technologies used are an expression of local economic development level of those years. In making this company not only contributed indigenous technologies but also those imported transferred from world renowned companies (Siemens, General Electric, etc.).

The time factor has influenced the performance of these technologies have not been improved for 30 years, this having serious implications for the optimal exploitation CDMN safe and high performance.

Even if the art technologies have evolved not performed or transfer technologies to improve both economic performance and technical characteristics of that company.

The companies listed above, providing technologies have changed this chapter and technology transfer was done with relative ease, since changes were made on time and the staff responded positively, offset by a shift to another is small.

If the gap between changes Romanian economy is very large and cumbersome transfer between technologies is carried out even at the risk of failure in a prolonged transition. Just reducing the duration of this state creates the premise of efficient and sustainable technology transfer.

The concepts of modularity and miniaturization creates a huge resistance to change and in this case must be carried out intense preparations for successful change.

Chapter 2 "models used in the process of technological change" brings to the fore the most commonly used models in the literature that can be undertaken in a safe overall planning model of technological change.

To be driven by technological change, it requires the presence of consultants who can come from inside or outside the organization subject to change, but know absolutely all the changes that should be implemented.

The analysis concludes that both internal and external consultants must have skills to technological change and the management of interdisciplinary work with specialists from different specialties .. From the study done showed that a joint team of internal and external consultants covering much better dealing with the problems created when technological change.

All of the study done showed that technological change must go through several stages:

- Initiating change;
- Motivating change;
- Creating a vision;

• Finding a supportive policies;
• Driving change;
• supporting the change.

For the multidisciplinary team approach in analyzing the results using several methods:
• person-centered methods;
• task-based methods and technology;
• structure and strategy centered methods.

Another analysis, importantly, is where actually should occur technological change and the resulting 2.6 chart this as being when full maturity of the technology being promoted.

Chapter 3 "Research Methodology technological change", presents an approach to research technological change, by presenting an algorithm methodological research with practical applications.

This chapter takes the form of flowchart research process, complete with rules of effective research. Where research has exploration methods used qualitative research elements that are presented in this chapter.

Research methods as: interview, case studies or ethnographic research is whole arsenal of scientific approach to the phenomenon studied.

For organizational studies using both methods both qualitative and quantitative research, technological change research study using survey-based research through the questionnaire.

For organizations that are changing research solution is a diagnostic analysis of the efficiency it is much greater if you apply after the onset of the study and motivating staff.

There are several models of diagnosis in this chapter such as:
• diagnostic model on hierarchical levels
• model Nadler and Tushman
• The Weisbord

The best model is the first and is the one used in diagnostic analysis of the study presented in this paper doctoral approach. To collect information and data can use several methods as: interview, questionnaire and direct observation.

The method used for this step doctoral questionnaire that was distributed to a representative sample that ensured correct evaluation of the pre-change.

Chapter 4 "Case Study - CN ACN Constanta". In this chapter we analyzed the company that manages CDMN and has the legal form of a joint stock company with leadership by the following bodies:
• General Meeting of Shareholders
• The boards
• CEO

The case study is completed assessing technological features subject to change locks. Also it was intended to highlight the strengths and opportunities of these companies as a starting point in making technological changes proposed.

The staff were questioned on the need for technological change within the company where they work.

In this chapter it assessed the state of economic - financial Altman method and the results of the study indicate a significant improvement and increase turnover.

Chapter 5 – "The mathematical optimization CDMN exploitation of the CN CAN SA Constanta". Mathematical modeling was necessary because of the need for business performance and the company which manages CDMN. In this chapter identification method was used ORTID technological change and technological change crystallized FOLLOWING:
• Real-time information system RIS
• Dry electric transformers
• Primary switch system with SF6
• LES underground power line system with longitudinal and transverse insulation barrier
• Fluid circulation system (variable displacement pumps, compressors, fans).

Chapter 6 – "Personal contributions and directions of research". General conclusions. This chapter presents the author's contribution to the research directions to guide the study.

The general conclusions resulting from the scientific approach the whole character of application that can be used by all organizations and Romanian companies facing such problems.

PERSONAL CONTRIBUTIONS

1. Identify the current state of knowledge in the field of technological changes mechanical energy sector specific consultation CDMN database, technological sheets, books, articles published and indexed in the database of national and international conferences.

2. Identify technical issues in the CDMN mechanical energy that can generate a profun impact of technological changes in the CDMN increasing transport capacity and thus increase turnover.

3. Analysis of the most frequent system failures vehicular fluid (hydraulic oil, water, air etc.) and replace components or subassemblies, more performance whose maintenance costs are much lower.

4. Proposals for changes in equipment leading to achieving economic and technical performance considerably higher, with significant electricity savings.

Theoretical contributions

- studying the current state of research in theoretical mechanics and energy of Romanian companies
- studies of technological change strategy
- studying the concepts of technological change and organizational development
- models and methods for the study of technological change
- mathematical modeling exploitation CDMN

Practical contributions

- creating a quantitative and qualitative research methodologies of CN ACN Constanta Romanian organizations;
- diagnostic and evaluation ie the financial health of an organization;
- diagnostic analysis highlighting the strengths and weaknesses of CN ACN SA Constanta case study of ACN SA Constanta company CN the operators CDMN and questionnaire survey on the need for change within the same administration;
- possible financial assessment of technological changes to get the support of European and global organizations to promote programs;
- changes in work are promoted to electrical, mechanical and naval telecommunications;
- greatly increases the computational time increases the number of objectives (change of structure) but solving the system of equations can be done by computer programs (Annex1)

FUTURE RESEARCH DIRECTIONS

Analyzing the complexity and scope of the research topic, and the specific conditions in which the research was conducted individual can highlight the following directions for future research:

- have not addressed possible fairway technological changes since its warranty is 50 years in this range is all based maintenance works;
- Study on expansion of the objectives of the multi-criteria modeling.

CONCLUSIONS

- Establish time when the change is very important;
- Technological changes are effective especially if occurring when old ones employ high maintenance costs and the benefits are very low in terms of results;
- technological changes must be prepared in advance and brought to maturity, when the effects are particularly high and low maintenance costs;

- Along with the preparation of technological change must have regard to the technical culture and to increase the users of new technologies;
- The transfer of advanced technologies to be one so that the process and that their value;
- Proposed technologies should be top or key to have a desired effect;
- Technological change should be seen as something natural, their scope must be proportional to the gap with the world and global level domain in which the entity operates (the company) receiving technology;
- It should be the paradigm of Romanian organizations which have gone from singular factor, profit, more efficient exploitation of resources available in

terms of full social security in harmony with the environment;

- Investment effort must be calculated so as not affected the organization's ability to repay the loan if such a variant decide development
- High technological level can be maintained through technology transfers carried out effective and efficient;
- Globalization is generating technological changes in order to maintain a high degree of technological development of a provider of products whose quality is dictated by market demand;
- Change must be a habit and the ability to change companies is an indicator of their efficiency;
- Promoting free-MENTENANCE technology lowers spending to repair and maintenance.