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## **A STRATEGY FOR THE TEXTILE INDUSTRY : EXPERT PERSONNEL DEVELOPMENT IN THE TRANSITIONAL ENVIRONMENT**

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### **Abstract**

This paper analyzes the importance knowledge and education for the expert personnel in the textile industry. The engineers of textile technology participate in defining the concept that manages technology which is of a paramount importance for the growth and development of the textile industry enterprises. There is a wide range of demands for expert personnel with aim to provide them a constant advanced training. Besides implementing the “traditional” skills and knowledge of various textile technologies, contemporary expert personnel should also possess knowledge of organizational science, business management, strategic and operative planning, marketing, quality management etc., in order to manage their personnel while solving both technical and management problems.

*Keywords:* management, knowledge, education, textile industry

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### **1. INTRODUCTION**

With a contemporary business environment - characterized by a rapid technological development and business globalization, enterprises have to make great business efforts in keeping and developing their market positions.

Significant goals of contemporary enterprises business deals are mainly

directed towards achieving the world standards of quality for products assortment. The goals set in such an order inevitably create certain pre-conditions for a new, modern and long-lasting growth and development of enterprises. Those organizations which will not adjust themselves to the world standards on time, will not be able to survive even an initial process of the global re-structuring. This

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refers - above all, to the enterprises dealing with products assortment intended for a final consumption, among which is a textile industry to a greater extent.

An important - if not a key, responsibility for survival and development of these enterprises belongs to the field of management and expert personnel. Managerial responsibility, above all, lies in creating policy and strategy of an enterprise and, at the same time, influences over the personnel motivation, development, communication and behavior. Expert personnel responsibility lies in constant education and innovation of both knowledge and skills. In that way, pre-conditions for a successful technological management are situated, with the importance for the enterprises growth and development of that economy branch.

Economy has a need and an obligation to invest in highly-skilled personnel which should practices and develop new technological experiences. The experts who should constantly develop and implement high technologies, while at the same time creating strategies for technological growth and realization of research-development functions are - to a greater extent, textile technology engineers.

A new market-oriented concept of business-deals will impose to management and, especially, for expert personnel, possession of the following capacities should be obligatory:

- Multi-discipline in connecting textile technologies knowledge with basic skills in the field of marketing, management, ecology, psychology and sociology;
- Applying of up-to-date techniques and skills, as well as engineering tools in their practice;
- Creativity in work;

- Managerial innovation;
- Flexibility in behavior;
- Offensiveness in approach etc.

A new field of the textile engineers' activities emerges into managerial structures, starting to overpass technical-technological knowledge and skills, therefore asks for multi-discipline in business realization approach.

### 1.1. Education Requirements

Technological development is the main force which initiates all the changes of the modern world. It is the result of the cumulative effect of the knowledge growth, especially during the XIX and XX century. Technology is the most dynamic factor of development. Modern society – according to Drucker, is a society of knowledge – where the knowledge is regarded as the most important resource and useful goods. In that sense, Drucker recognizes three phases in knowledge it self:

I. During a hundred year-period – the first phase, knowledge referred to tools, processes, products, which had caused the industrial revolution;

II. In its second phase, starting about the year 1880, culminating by the end of the World War II, knowledge received a new meaning concerning the work process, which announced and introduced a productivity revolution;

III. The last phase started after the World War II. Today, the word knowledge refers and applies to itself – the knowledge: the management revolution (Drucker, P. 2006).

In modern society, knowledge is a strategic resource of power and wealth by

which it becomes an economic category, and basic social group nowadays – according to Drucker, presents knowledge ‘users’- those individuals who are capable of placing the knowledge in a function of business deals, calling them : knowledge workers, who apply it to knowledge in which way they increase productivity ( Drucker, P. 2006 ).

During 1960s , Peter Drucker formulated a phrase: “a discontinuity age” by which he defined a combined development of technology and knowledge, international economy and ideologies in the best possible way. At the beginning of 1990 s, this term became a reality of modern economy, dominated by entrepreneurship management. Namely, more and more enterprises, regardless of their size, financial strength or property status, have started implementing entrepreneurship practice by adopting basic principles of such business activities and using entrepreneurial management.

The term is based on the following factors:

- accepting changes
- creating innovations
- knowledge as a basic economy resource.

resource.

In the future, knowledge is going to become a strategic source of power and wealth and a knowledge users will become basic group consisting of the individuals capable to put it in function of business deals realization. According to Drucker, knowledge workers apply knowledge for knowledge, by which increasing productivity. In modern society knowledge becomes most important resource, enabling that other resources: labor force, capital and natural resources reach productivity. Traditional factors of production – as it is arable land, labor force and capital are not eliminated, but have become of a secondary

importance being easy to provide, of having enough knowledge (P. Druvcker, 1996).

Knowledge becomes a crucial factor of production. It becomes a tool, a means for fulfilling results of social and economic development. In a modern economy, knowledge applies to knowledge.

In such a society, education becomes an imperative – a society of knowledge asks for educated individuals, who are responsible and, by their skills, contribute to development of the society.

According to Deming (1996) There is no substitute for knowledge. To achieve it, there is a path he called “a deep knowledge” consisting of the following elements: understanding and admitting the system; knowledge in the field of variations, knowledge theory and technology. Deming considered that preparations for the future imply permanent education of the employees. Such an education implies continuous “sense” of the environment ( technical, social and economic ) in order to feel the necessity for innovation , a new product, a new service or simply innovated method.

A modern management concept emphasizes human being – as the most important resource in business deals. Man power is a basic potential of an enterprise. The employees have to be a starting as well as an ending point for any business deals quality improvement. Therefore, with his model of a successful management and quality improvement – consisting of 14 principles, Edward Deming pointed to great significance of man power, especially through the following items:

- necessity to introduce permanent education for all employees within an enterprise ( item 6 );
- introduction of a program for the

determined education and personal advanced training ( item 13 )

- encourage the action for entire personnel to carry out transformation (item 14 ).

Starting by the fact that textile engineering belongs to a group of progressive sciences as one of the supporters in technological development, constantly changing and improving, the very expert personnel is permanently and intensively educated by innovating knowledge and skills. On the other side, successful management of the enterprises under contemporary conditions implies a successful management over technology. A clearly defined concept of management over technology has a crucial importance in growth and development of any enterprise or economy. Technology management with a suitable strategy of technological development at national level should provide creation of rational and effective economy. Transitory movements in society and business deals especially, will – therefore, be adequately directed.

A technological development under conditions of privatization process, with initial frames of market economy on one side, and development of information technologies on the other side, require making changes in the very organization of business deals, strategic and operative planning as well as education of future experts.

## **2. BASIC CHARACTERISTICS OF TEXTILE INDUSTRY BUSINESS VENTURES TODAY**

Today, the textile industry of Serbia is in a difficult situation, as the very survival of that

industrial branch has been put under question at the national level. Such a conclusion refers both to public and private sectors of textile industry. Textile industry used to be among the leading exporting branches of the former Yugoslavia, and in those days Serbia was the greatest textile-producer in the region. Owing to its international trade, this branch - for decades, has had business deals in accordance with all West-European market principles. However, in case those negative trends - which have been lasting since 1980, will go on, the textile industry could reach economy margins in Serbia, having the number of employees reduced only to 15-20.000.

One of essential problems in textile industry is - together with unfair competition, increased level of grey economy. It is very difficult to estimate its share level, but it ranges approximately from 50 % to 60 % of a total production in this branch.

The government of Republic of Serbia has initiated the project entitled: A Strategy of Industrial Development in Serbia till 2010, with ambition and necessity for more active attitude in directing the future development of Serbia. The strategy should point out the development capacities of Serbian economy, by requesting increase of national production, international market share and living standard of population. Those industrial sectors that is able to initiate the development – among which the textile industry should be recognized. The aim of development strategy is to create an international, competitive and free-market economy, which will – to the greatest extent , be able to incorporate the world economy globalization process in a way that can provide the most rapid and sustainable development.

Textile industry privatization process has started as a consequence of transition process which imposed legislative regulation of this branch. Because of that process, certain problems have been occurring on the regularity of some measures in a privatization procedure. Low level of the organization at textile industry enterprises disables effective collaboration and preparation for re-structuring. Without having a special team for re-structuring, realization of the very procedure is under question.

Most of the employees within the textile industry are women, which brings some problems like maternity or pregnancy absenteeism. This issue has got a much greater importance to be left for solving among individual enterprises.

Age structure of the textile industry employees is very unsuitable, as it is averagely 45, together with absence of interest for the job among the youth. Number of expert and creative personnel is lacking (designers and creators), as well as a better organization for the engagement, namely there is no connection between enterprises and science-educative institutions. All together, it has a low productivity effect.

The equipment is old-fashioned in technical and technological terms, and new technology are introduced either slowly or not at all. Technology level of production capacities varies depending on a part of industry. At spinning and weaving sections technology is rather conventional with few automated facilities. According to some estimates 70 % of equipment is obsolete.

Grey economy – not just in trade but textile production too; problem of un-registered companies, or the ones dealing with textile products production but

registered as for production, trade and services... Existence of an illegal sector has bad effects for the very state due to avoiding payment of duties.

Uncontrolled import of textiles and unfair competition existing at the textile market

(illegal import from Turkey and China) – great quantities of goods imported under low customs tariffs or duty free; as a temporary admission which – in fact, is not.

While other branches income increases, at the same time it constantly decreases in textile industry. Due to low income problems among textile industry workers, there appears another one referring to workers' low motivation.

It is necessary to make a fundamental reform within the educative and research system re-structuring (4, p.55-56). A fundamental reforming and rationalization of the educative system – according to the world development of the branch, should be carried out urgently, due to great lacking of adequate human resources at all levels : from workers to managers.

On the basis of the text and draft on A Strategy for Industrial Development till 2010(3), actual problems in textile industry of Serbia are:

- o lacking of turnover resources disables supply of basic raw materials (cotton, wool, synthetics);

- o great debts to Development Fund as well as to the Republic Direction for stock reserves;

- o great outstanding debts from the past due to international contracts ( Iraq, Iran and Libya );

- o obsolete and amortized ( redemption) equipment and technology;

- o bad disposal of ready-made products at the domestic market due to poor buying capacity of the population, as well as to

unfair competition of imported textile goods ( ‘grey economy’ );

- o lack of educated personnel in textile branch;

- o low incomes;

- o lost positions at the world market due to effect of long-lasting sanctions;

- o dynamics of demands, expressive market segmentation, rapid and great changes in customers’ requirements, changes in fashion trends etc.;

- o comparably reduced production costs of individual articles observed within last ten years among the leading textile producers;

- o insecure and unstable business dealing conditions;

- o old-fashioned infrastructure ( personnel education , designing etc.);

- o lack of financial resources for investment into modernization of equipment, especially of spinning and weaving plants, textile processing capacities and chemical fibers production;

- o political–legal environment as institutional factors that regulate international textile trade ( changes in bi-lateral agreements terms, tariff-system, goods services etc.);

- o economic environment – unstable business deals conditions at the domestic market, competitive environment – the ‘new-industry’ countries like Hong Kong , Taiwan, Korea, transition countries and other developing countries like Tunis, Philipinnes, Turkey, Indonesia , textile into traditionally exporting markets of the former Yugoslavia, as well as over-sizing and re-structuring of textile and clothes industry in the developed countries.

### **3. IMPROVEMENT OF THE DOMESTIC TEXTILE INDUSTRY COMPETITIVENESS**

As one among main factors for improving competitive advantage of domestic enterprises in textile industry, as well as enlargement of business deals, is a wider application of the quality management concept – a pre-condition of which is a knowledge advancement among employees, especially directors, managers and owners of an enterprise. It is especially important for those enterprises aspiring for independent market placement as well as to the ones asking to work as sub-deliveries for a wider business system.

The key problem of inadequate competitive capacity with domestic enterprises should be looked for among management or technical-technologic side of production. It specially refers to the textile industry domestic enterprises, which have been in troubles for several years referring to competitiveness at domestic market. In that sense, main fields of activity for improving quality of business deals among domestic enterprises in textile industry are: improving of business deals quality and knowledge advancement among managers and employees.

A modern society requires experts that possess a mixture of different knowledge and skills - before all in the field of management and informative technologies, who are capable of making decisions quickly, showing interest in application of new methods and business techniques, trying to improve work process by themselves.

Rapid rhythm of changes inside the environment requires individuals capable to cope with all the challenges imposed by modern business deals. New working

conditions ask for individuals of the following characteristics:

- knowledge
- capacity to study
- initiative
- flexibility
- making effort
- experience

In modern economy managers should be the persons capable of ( due to erosion i.e. amortization of knowledge , which in course of 3-5 years become up to 50% obsolete ) gaining new knowledge permanently. That fact points to a new function of education - education has to penetrate into entire society. Education system has to become open, dynamic, offensive in the same way as the very knowledge, but school loses its monopoly in giving that knowledge. All the developed countries' experience show that knowledge together with organizational capabilities and a spirit of entrepreneurship stand at the top of fundamental factors for productivity. A successful business is more and more dependent of knowledge productivity.

#### **4. EXPERTS AND STUDENTS OPINION AND ATTITUDES ON EDUCATION IMPROVEMENT FOR TEXTILE INDUSTRY EXPERT PERSONNEL**

Education reforms are expected to: increase expert and creative efficiency of studying; reduction in duration of studying; increase acceptability and mobility of students at higher levels and types of education and training; enable students' permanent follow up of sciences together with adopting skills and enable coordination of education profile with requirements of

professional work.

The Bologna Declaration insists on developing education and improving scientific knowledge, adopting European standards along with making reforms and adjusting the own education system. In that purpose, within the doctoral dissertation , there is given an analysis of students' attitudes, the very users of high school-services in order to define required knowledge and skills that should possess the textile industry experts under market business deals , as well as specific requirement of the experts for knowledge improvement and education of expert personnel employed in textile industry.

Research work on attitudes of experts and students has been carried out during the period from September 2006 till the end of December 2006, on the territory of Serbia with an aim to getting attitudes of experts from various professions and job positions in the field of textile industry, economy, education, science-research work as well as of the students attending faculties and colleges for textile profile education.

Experts and students being interviewed have similar attitudes on the question whether textile work organizations trust their textile engineers who have been educated at our national colleges and faculties. The greatest number of analyzed experts (80%) and the greatest number of interviewed students (73%) think that textile work organizations trust their textile engineers who have been educated at our national colleges and faculties.

Domestic experts are unique (100%) on the subject that national experts are able to contribute to development of domestic industry. They think that textile engineers ought to possess:

- knowledge ( 40,40%)

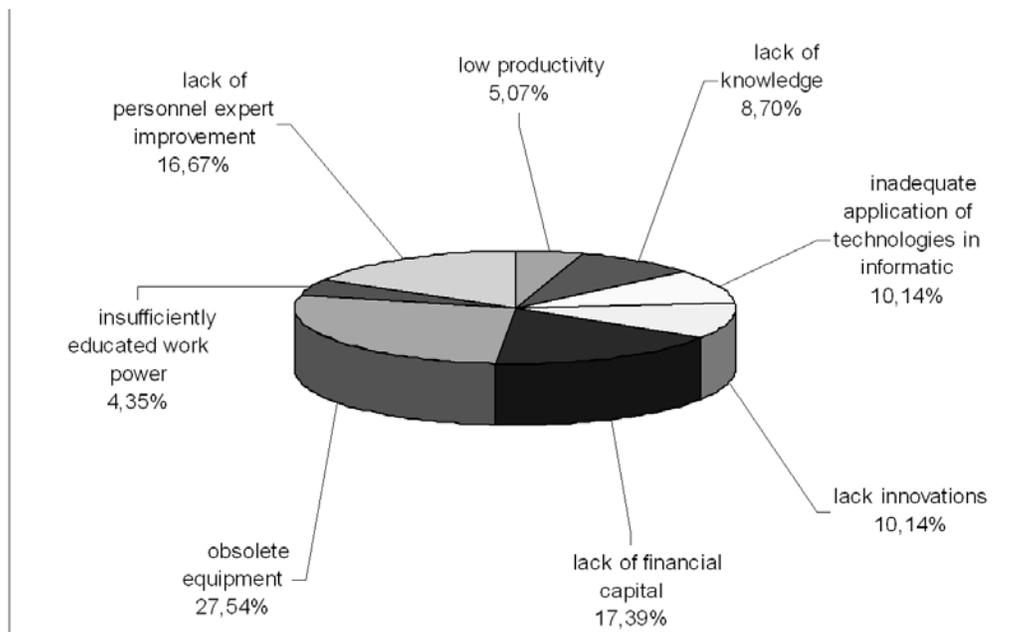


Figure 1. the most important problems of domestic organizations in textile and clothes industry

- capacity to study ( 21,21%)
- initiative (12.12%)

Referring to this research work, data on a textile engineer in future are interesting as he is perceived by domestic experts as: a textile or clothes designer (32,26%), a knowledge worker ( 30,65%) and a techno/manager (27,42%).

The greatest number of experts (90%) regards that textile industry enterprises are prospective, owing to:

- cheap and experienced / skillful work power ( 43,48%)
- experience in production as well as in “lohn” works with foreign partners (28,74%)
- a solid existing infra-structure (14,94%)

Namely, the greatest number of interviewed among experts (50%) regards that a technological level of domestic organizations in textile industry is just average, then low (26%) and only 2% as

high. When judging competition capacity of domestic textile industry, the greatest number of experts (58%) finds it as average, and 22% as satisfactory. A smaller part of them finds the level of competition capacity as low (18%) and just 2% finds it high.

The research has shown that the interviewed experts (64%) regard that the existing education profiles at domestic faculties are able to prepare engineers for the challenges of economy in transition, but a lesser part (36%) regards oppositely.

By its one part, the research also referred to the problems which domestic organizations in textile industry are faced with. The experts regard that obsolete equipment (27,54%), lack of financial capital (17,39%), lack of personnel expert improvement (16,67%), lack innovations (10,14%) and inadequate application of technologies in informatics (10,14%) as illustrated by a Graph 1.

Education of all employees is a

precondition for reaching better business results, especially improvement of business deals productivity. Analyzing needs for education among textile engineers who currently work at textile industry enterprises indicate that the education should cover the following fields: Computing and Informatics (28,35%),

Foreign languages (16,54%), Management (16,54%), Quality management (14,17%), Design (11,02%), Marketing (9,45%) as shown on Table 1.

management (3%) - according to Fig. 2.

A new principle of studies according to the Bologna Declaration, implies a well balanced combination of theory and practice. After being asked whether students should get an adequate practice / training, the interviewed experts (93,75%) think that the students ought to get adequate training in the field of textile and clothes industry. According to the research results, the greatest number of students (78%) regard that during the studies they have not had adequate practice / training at textile plants.

Table 1. Fields of education required for textile industry employed engineers

Ord.no.	FIELD OF EDUCATION	%
1	Foreign languages	16,54
2	Computers and informatics	28,35
3	Marketing	9,45
4	Management	16,54
5	Design	11,02
6	Entrepreneurship	3,94
7	Quality management	14,17
8	Business law	0,00
Σ		100,00

To the question referring to asking for suggestions on lectures improvement for experts education, the students answered:

- o more expert / professional training (60%)
- o more subjects in the field of design (31%)
- o more subjects in the field of applied informatics (6%)
- o more subjects in the field of

## 5. CONCLUSIONS

The essence of a contemporary society exists by knowledge. Knowledge is a basic business resource of modern economy. Imperative for a continuous improvement of business deals productivity, as a precondition of growth and development at a market oriented organization, supposes permanent improvement of knowledge productivity.

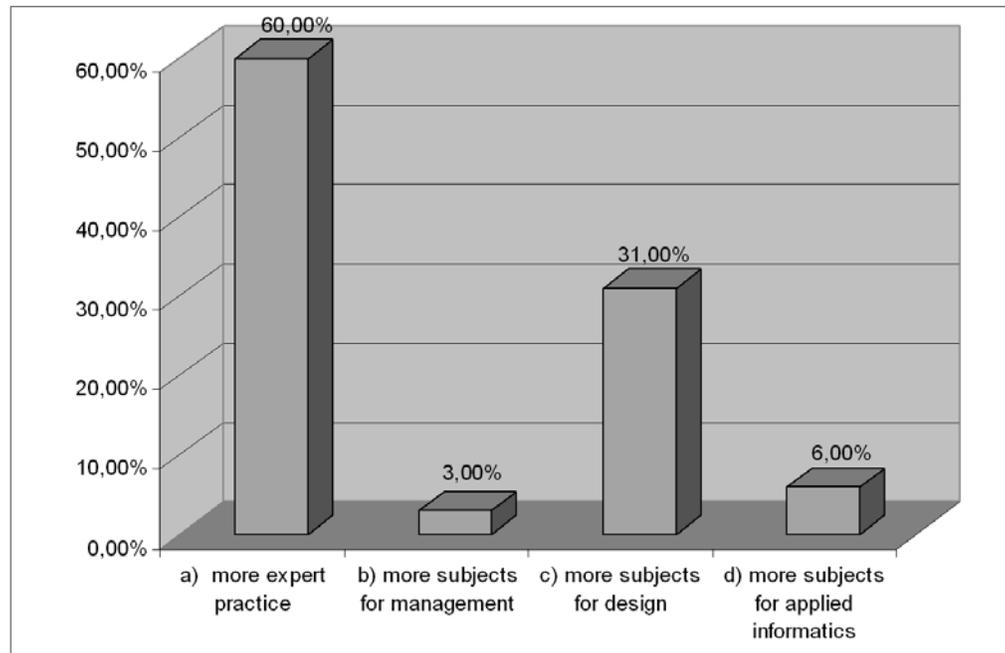


Figure 2. Suggestions for improving expert / personnel education

Contemporary society requires experts who possess a mixture of various knowledge and skills, before all in the field of management and technologies of informatics, that are able to make decisions quickly, show interest in application of new business deals techniques, trying themselves to improve the work process.

Textile industry enterprises which have had productivity problems for years, do have a perspective, regardless to problems present at domestic organizations in textile industry, like obsolete equipment, lack of financial capital and lack of expert personnel improvement at all levels.

The existing education profiles at domestic faculties are able prepare engineers for challenges for economy in transition, and textile work organizations do trust the textile engineers, who get knowledge at our colleges and faculties.

A new principle of studies according to

the Bologna Declaration implies a well balanced combination of theory and practice. In order to improve expert / professional education lectures students suggest: more professional training / practice, as most of students during the education have not had adequate expert training / practice at the textile plants.

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