



IMPROVING THE TEXTILE'S ENTERPRISES KNOWLEDGE MATRIX

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Abstract: *The textile enterprises need adequate solutions to face the competition on the global market. Innovation leverages the enterprises competitiveness: however, improving innovation is a task of research providers in the field. The Knowledge Matrix for Innovation (KMI) represents an instrument for quantifying the intangible assets of a textile enterprise. Examples of intangible assets are: innovation strategy / culture, informational resources, training methodology, relationships portfolio, IP rights etc. By improving such factors of the KMI, the textile enterprises are going to improve their competitiveness. This main aim is tackled by the Erasmus Plus – VET Project “Matrix of knowledge for innovation and competitiveness in textile enterprises - TexMatrix” (2016-2018). The red line of the project follows the definition of the KMI, the adaptation of the Benchmarking questionnaire and its implementation on the e-learning Tool, the Benchmarking study by consulting of 50 textile enterprises at consortium level, supporting the Guide with new research and innovation management solutions for the enterprises and Blended courses for 95 young trainees, based on the Guide in e-learning format. The project also aims to counsel 100 decision-factors from textile enterprises on the new solutions comprised in the Guide, within 5 Workshops. The e-learning Tool has the URL address: www.advan2tex.eu/portal/.*

Key words: *innovation, e-learning, questionnaire, blended courses, workshops, VET.*

1. INTRODUCTION

The intangible assets of a textile enterprise are of utmost importance for their innovation activity. Their evaluation and improvement contributes in bridging the weak points and consolidating the strong points of a textile enterprise. The concept of the Knowledge matrix for innovation (KMI) aims to create a comprehensive image of the intangible assets of an enterprise [1]. Examples of intangible assets are: innovation strategy / culture, informational resources, training methodology, relationships portfolio, IP rights etc. (Fig. 1).

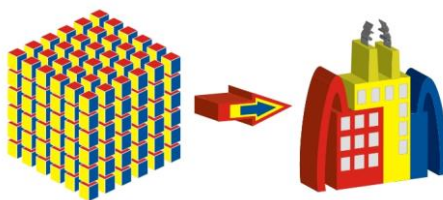


Fig. 1: The implementation of the KMI in textile enterprises has multiple benefits

Advantages for identifying and improving the Knowledge matrix in a textile enterprise are:

- an adequate classification of an intangible asset and their relation with other assets
- an improved of knowledge inventory
- the assets may be evaluated against their costs and overlapping assets can be eliminated
- non-productive assets may be better exploited
- all asset data of a certain criteria can be easily identified with all its relations
- certain gaps in the knowledge base can be bridged.

2. THE TEXMATRIX PROJECT

In order to tackle the implementation of the Knowledge Matrix for Innovation in textile enterprises, an Erasmus Plus project was conceived, named “Matrix of knowledge for innovation and competitiveness in textile enterprises - TexMatrix”. The strategic partnership project has an implementation period of two years (Sept. 2016 – Aug. 2018) and is dedicated to Vocational Education and Training – VET – on the theme improvement of innovation. The consortium is formed of five partners with long-lasting tradition in the European textile domain: INCDTP – Bucharest (Coordinator), TecMinho – Portugal, Centrocot – Italy, University Maribor – Slovenia, Technical University “Gh. Asachi” – Iasi. The TexMatrix project 2016-1-RO01-KA202-024498 has been funded with support of the European Commission (Fig. 2).

Main Outputs of the project are:

1. The Knowledge matrix for innovation
2. The Benchmarking study
3. The Guide with new solutions for textile enterprises
4. The e-learning Tool and work-based training

The red line of the project follows the definition of the KMI, the adaptation of the Benchmarking questionnaire and its implementation on the e-learning Tool, the Benchmarking study with consulting of 50 textile enterprises at consortium level, a Guide with new research and innovation management solutions for the enterprises [2], supported by the Benchmarking study and Blended courses for 95 young trainees based on the Guide in e-learning format. The project also aims to counsel 100 decision-factors from textile enterprises on the new solutions comprised in the Guide, within 5 Workshops [3-4].



Fig. 2: Erasmus Plus and TexMatrix project's logo



3. THE KNOWLEDGE MATRIX FOR INNOVATION

The project is after the first semester of implementation. At this moment, the Knowledge matrix for innovation was defined and the related Benchmarking matrix was established. The KMI includes 52 factors grouped in Criteria and Elements. The KMI aims to quantify the intangible assets of the textile enterprise. The Elements of the KMI represent the prerequisites a textile enterprise uses in order to fulfill its objectives: the Conditions establish the Resources, while both are conditioning the Activities and the Results. The Elements and the corresponding Criteria mutually established by the TexMatrix Partners are presented in Table 1.

Table 1: Structure of the KMI

No.	Element	Criteria	Factors
1.	CONDITIONS	Innovation culture	5
		Innovation strategy	5
		Leadership	4
		SUM =	14
2.	RESOURCES	Human resources	5
		Organizational structure	4
		Material resources	3
		External relationships	4
		Financial sources	1
SUM =	17		
3.	ACTIVITIES	Management of ideas	2
		Management of innovation projects portfolio	2
		Surveillance and knowledge management	3
		Innovation promotion	2
		IPR	3
SUM =	12		
4.	RESULTS	Evaluation and monitoring	5
		Image	3
		Learning from failures	1
		SUM =	9
		SUM =	52

4. THE BENCHMARKING QUESTIONNAIRE

The Benchmarking Questionnaire (BMQ) has a 1:1 relation with the KMI – however, the factors are meant as questions for the textile enterprises. This BMQ was implemented on the Moodle e-learning Tool as Questionnaire activity. Several types of questions were implemented, such as [5]:

- Likert scale with rating from 1 to 5
- Radio buttons – for single answer questions
- Check boxes – for multiple answer questions
- Numeric fields – for numbers

Examples of Factors conceived in Likert scale are:

- The company promotes innovation initiatives on a regular basis; with a scale from 1 to 5.

Radio buttons and check boxes were used for more detailed answers such as:

What methods and sources for innovation does the enterprise apply?

- a) Innovation ideas from own staff
- b) Scientific magazines
- c) Business fairs
- d) Marketing Dept.
- e) Internal R&D Dept.

This online questionnaire is hosted on the project's e-learning Tool at the URL address: www.advan2tex.eu/portal . It is meant for completion by 50 textile enterprises at consortium level, under authentication (Fig. 3).

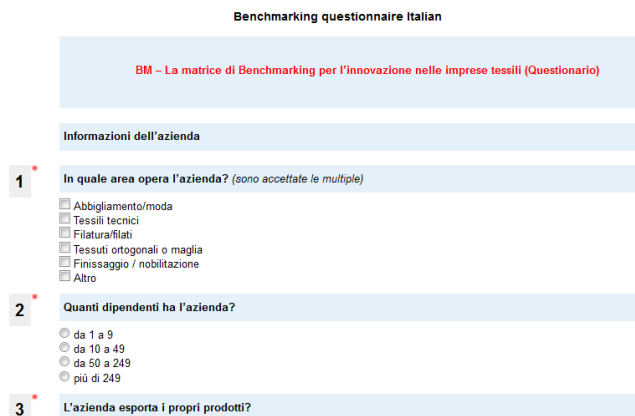


Fig. 3: Screenshot of the e-learning Tool – benchmarking questionnaire in Italian

5. CONCLUSIONS

The Erasmus Plus VET project TexMatrix aims to improve the textile enterprise's competitiveness based on the instrument of the Knowledge matrix for innovation. The project has achieved for the first semester of implementation a unitary Matrix for all partners and the related questionnaire. This questionnaire is going to be completed online by 50 textile enterprises on the e-learning Tool of the project. The project's website is www.texmatrix.eu .

For the subsequent semesters of the project, the research providers of the project's partnership will assess the benchmarking study and will identify certain gaps for each textile enterprise to be bridged. They will contribute with new solutions based on research results, new technologies and innovation management. Moreover, they will identify the needs of the textile enterprises in order to be able to conceive new research projects, for strengthening their innovation capability and to fostering their competitiveness on the global market. Innovation is one of the top priorities of the European Technology Platform for Fibres-Textiles-Clothing [6].

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