

TEMPUS IV-6TH CALL FOR PROPOSAL

PROPOSAL NUMBER: 544390-TEMPUS-1-2013-1-GR-TEMPUS-JPHES

UNITE PROJECT – WP1_DELIVERABLE 1: “COOPERATION BETWEEN UNIVERSITY AND INDUSTRY. GOOD PRACTICES IN EUROPEAN COUNTRIES-GREECE”

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FOREWORD

IT is obvious, without teaching no research, as we understand it today, but nevertheless for that same reason there will not be much to teach without research.

THINKING and talking about nowadays' research needs, the understanding right from the start that research is not a prerogative of the academic world. High quality and advanced research is carried out in many industries and already this has urged to cooperation between universities and industry towards a mutual benefit. Apart from this also the place and role of universities in society as the incubation spot as well of talented young people of which many will become a vital part of the human resources in industry urges to safeguard the collaboration in between and to improve it where needed so.

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1 - PROJECT REFERENCE

Project /action Title and acronym (If applicable): **PROPOSAL NUMBER: 544390-TEMPUS-1-2013-1-GR-TEMPUS-JPHES**

Start Date: 1/12/2013

End Date: 30/11/2015

Duration: 24

Number of participant institutions: 12

Number of countries involved (If applicable):6

Global financial involvement:

Project /action Title and acronym (If applicable): **WP.1 -Development of UNITE Council (University and Industry for textile sector in Belarus)-1.1 Good practices of Cooperation**

Start Date: 1/12/2013

Programmed End Date: 31/4/2014

Number of participant institutions: 9

Number of countries involved (If applicable):5

2- PROJECT TEAM (WP1_1)

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3- SUMMARY INCLUDING CONTEXT AND OBJECTIVES

UNITE Council will be a body consisting of representatives from Academia, Industry and government with the main objective to promote and support the modernisation of HE in textile sector in Belarus. The Council will have a strategic decision making role and it will set the ground for the more active involvement of enterprises in higher education. During the project the members of the UNITE Council will be appointed, the statute, processes and procedures for its operation will be produced.

The conditions for the development of a Council between Academia and Industry are favourable, due to the on-going programme for the modernization of textile sector in Belarus and the strong commitment of Belleprom. A key pillar for the modernization of industry is the cooperation of higher education with textile industry and there is stated interest from all stakeholders to this direction.

4 - PROJECT DESCRIPTION

Good practice report, including case studies of cooperation between Academia and Industry. The case studies are focus on experiences on the textile sector cooperation. The report includes a number of seven case studies and a synthesis of the results including main challenges, impacts and recommendations. The final report has a length of about 100 pages, developed in English and translated to Russian.

1.1 Good practices in EU countries

The EU partners had gather good practices related to the establishment, function and evaluation of Councils between Industry and Academia. The activities involved was desk research to identify these good practices followed by in-depth interviews and focus groups of stakeholders participating in sector Councils or other cooperation schemes. The role of institutes and technology transfer organizations is also be explored. The result of the activity is a report that will serve as a basis for the establishment of the UNITE Council.

1.2 Identification of stakeholders in Belarusian textile sector - Consultation

The Belarusian partners have to identify and map the stakeholders in the country textile sector: companies, company representatives, trade unions, research institutes, universities, governmental organizations etc. A consultation round will be organized, with a distribution of a questionnaire and meetings. The consultation will have as an objective to gather the different views and opinions on the role of UNITE Council including its vision, mission, management, activities and expected results.

1.3 Establishment and formalisation / institutionalisation of UNITE council

Following the first two tasks, the UNITE Council will be established (members, statute, processes). The details of the UNITE Council will be defined following the review of the good practices from European countries and the consultation process in Belarus, thus it will take into account the experience of EU countries as well as the reality and needs of Belarusian textile sector.

5 WP1_DELIVERABLE 1: TEIPIR CONTRIBUTION

5.1 HIGHER EDUCATION IN GREECE

The [Greek educational](#) system is mainly divided into three levels, primary, secondary and tertiary, with an additional post-secondary level providing vocational training. Primary education is divided into kindergarten lasting one or two years, and primary

school spanning six years (ages 6 to 12). Secondary education comprises two stages: [Gymnasio](#) (variously translated as Middle or Junior High School), a compulsory three-year school, after which students can attend [Lykeion](#) (an academically-oriented High School) or [Vocational training](#). Higher Tertiary education is provided by [Universities and Polytechnics](#), [Technological Educational Institutes \(T.E.I., 1983 ~ present\)](#) and [Academies](#) which primarily cater for the military and the clergy. Undergraduate courses typically last 4 years (5 in polytechnics and some technical/art schools, and 6 in medical schools), [postgraduate \(MSc level\)](#) courses last from 1 to 2 years and [doctorates \(PhD level\)](#) from 3 to 6 years. All levels are overseen by the Ministry of Education and Religious Affairs. The Ministry exercises centralised control over state schools, by prescribing the curriculum, appointing staff and controlling funding. Private schools also fall under the mandate of the Ministry, which exercises supervisory control over them. At a regional level, the supervisory role of the Ministry is exercised through Regional Directorates of Primary and Secondary Education, and Directorates of Primary and Secondary Education operate in every Prefecture. Tertiary institutions are nominally autonomous, but the Ministry is responsible for their funding, and the distribution of students to undergraduate courses. Currently the Greek government only recognises the degree programmes offered by the state-run universities although there are several private universities and colleges offering degree programmes that are validated and overseen by American, British and other European universities. All levels of education are catered for by both private and public schools. State-run schools and universities do not charge tuition fees and textbooks are provided free to all students, although, from 2011 onwards, there has been noticed a shortage in new textbooks, forcing students to either buy stock books from bookshops, or participate in parent-teacher association-run book trades. There are also a number of private tutors schools, colleges and universities operating alongside the state education and providing supplementary tuition. These parallel schools ([Greek: φροντιστήριο](#), frontistirio (singular)) provide foreign language tuition, supplementary lessons for weak students as well as exam preparation courses for the competitive [Panhellenic national examinations](#). Most of the students typically attend such classes (and examinations) at the tutors schools in the afternoon and evening in addition to their normal schooling. Higher education in Greece consists of two parallel sectors: the University sector (Universities, Polytechnics, Fine Arts Schools) and the Technological sector (Technological Education Institutions and the School of Pedagogic and Technological Education). Higher Education Institutes are self-governing legal entities under public law, supervised and subsidized by the state through the Ministry of National Education and Religious Affairs. The main source of funding is the state budget through the Ministry of Education and European funds. Additional funding is provided by National and European Framework research projects (RTD), through other ministries and third bodies that receive services provided by the Higher Educational Institutions. Greece has a binary system of Higher Education, designed to ensure maximum flexibility and to respond to the wide variety of social and economic requirements. The Greek Higher Education system is highly diversified offering a wide range and type of courses. The universities are essentially involved with undergraduate and postgraduate programmes, along with basic and applied

research. The same goes for the T.E.I.s but with a smaller number of post graduate programmes developed autonomously or with Greek or other European universities and a growing involvement in European Framework research projects (RTD). The basic requirement for admission to tertiary education is the achievement score on the 'Certificate' (*Bebaios*) which includes grades in six general education and 'stream' subjects that are examined at the national level. The general achievement score on this Certificate takes into account final year school grade, (school level evaluation) and grades on the six subjects of the national level examinations. The number of students admitted to each university and Technological Educational Institute department is based on ranking of students' performance and the general score obtained on the leaving certificate. Moreover, in Greece there are 22 Universities, including Polytechnic Schools, the School of Fine Arts and the Hellenic Open University (EAP), 14 Technological Educational Institutes (T.E.I.) and the School of Pedagogic and Technological Education (ASPETAI). The internal structure, organization, and operation of administrative, financial and technical services; overall teaching and research policy; planning; the procedures and requirements for hiring personnel for such positions; the allocation of funds, etc, are determined by the respective provisions and the internal regulations of each university or T.E.I.. Greek Higher Education Institutes develop their own curricula which are published in the Official Journal of the Greek Government and come up for review every two years, by law. Course validation and accreditation is subject to the advisory body of The National Council of Education (ESYP). However, Greek Higher Education Institutes award their own qualifications (Degree, Diploma, MSc, Doctorate). Greek educational institutes are entitled to formulate autonomous policies for achieving their specific educational goals and in fulfilling their mission. A national credit system has existed in both sectors of higher education since the beginning of the 1980s. This is in fact an accumulation system in which the credits are directly equivalent to the weekly hours of instruction (e.g. a course of four teaching hours per week corresponds to four credits). However, ECTS is used by institutions in both sectors as a transfer system for European mobility programmes. The new 2005 law on Quality Assurance in Higher Education makes the use of ECTS for transfer and accumulation compulsory in two-cycle programmes at all higher education institutions. Currently, ECTS is fully implemented and both systems are in use. Higher education institutions are encouraged to set up their own internal quality assurance mechanisms to provide a sound basis for external evaluation. The aim is to combine institutional autonomy and accountability effectively within the national quality regulations framework. Each institution has the right to independent decision-making and is therefore responsible for devising its own quality assurance system for assessing education and administrative and research functions, although general provisions are set out in the legislation. Teaching and administrative staff as well as students are the main participants and contributors in this process.

5.1.1 Universities and Technical Universities

All the Higher Tertiary state-accredited universities in Greece are public. The duration of the undergraduate degree programs for most disciplines is 4 years (full-time).

Programs in engineering, dentistry, pharmacology, agronomics, forestry, along with some programs in fine arts, have a duration of 5 years (240E.C.T.S - 300E.C.T.S ISCED 5A). Medicine is the only discipline with a duration of studies of 6 years.

[Agricultural University of Athens](#)

[Aristotle University of Thessaloniki](#) (campuses: [Thessaloniki](#), [Serres](#))

[Athens School of Fine Arts](#)

[Athens University of Economics and Business](#)

[Democritus University of Thrace](#) (campuses: [Komotini](#), [Xanthi](#), [Alexandroupoli](#), [Orestiada](#))

[Harokopio University](#)

[Hellenic Open University](#)

[International Hellenic University](#)

[Ionian University](#)

[National and Kapodistrian University of Athens](#)

[National Technical University of Athens](#)

[Panteion University of Social and Political Sciences](#)

[Technical University of Crete](#)

[University of the Aegean](#) (campuses: [Mytilene](#), [Chios](#), [Karlovasi](#), [Rhodes](#), [Ermoupoli](#), [Myrina](#))

[University of Crete](#) (campuses: [Heraklio](#), [Rethymno](#))

[University of Ioannina](#)

[University of Macedonia](#)

[University of Patras](#) (campuses: [Patras](#), [Agrinio](#))

[University of Peloponnese](#) (campuses: [Tripoli](#), [Korinthos](#), [Kalamata](#), [Nafplio](#), [Sparti](#))

[University of Piraeus](#)

[University of Thessaly](#) (campuses: [Larissa](#), [Volos](#), [Karditsa](#), [Trikala](#), [Lamia](#))

[University of Western Macedonia](#) (campuses: [Florina](#), [Kozani](#))

5.1.2 Technological Educational Institutes

All the Higher Tertiary state-accredited Technological Educational Institutes in Greece are public. Technological Educational Institutes were initially established in

1983. They currently offer a 4-years (full-time) undergraduate degree programs equivalent to Honours [Bachelor's Degree](#) (240E.C.T.S ISCED 5A) and since 2008 they are also allowed to run on their own postgraduate that lead to a [Master's Degree](#) and PhD programs.

[Alexander Technological Educational Institute of Thessaloniki](#) (campuses: [Sindos](#), [Katerini](#), [Kilkis](#), [Nea Moudania](#))

[Higher School of Pedagogical and Technological Education](#)

[Technological Educational Institute of Athens](#)

[Technological Educational Institute of Chalkida](#) (campuses: [Chalkida](#), [Thiva](#))

[Technological Educational Institute of Crete](#) (campuses: [Heraklio](#), [Chania](#), [Rethymno](#), [Agios Nikolaos](#), [Ierapetra](#), [Sitia](#))

[Technological Educational Institute of Epirus](#) (campuses: [Arta](#), [Ioannina](#), [Preveza](#), [Iqoumenitsa](#))

[Technological Educational Institute of the Ionian Islands](#) (campuses: [Lefkada](#), [Argostoli](#), [Lixouri](#), [Zakynthos](#))

[Technological Educational Institute of Kalamata](#) (campuses: [Kalamata](#), [Sparti](#))

[Technological Educational Institute of Kavala](#) (campuses: [Kavala](#), [Drama](#), [Didymoteicho](#))

[Technological Educational Institute of Lamia](#) (campuses: [Lamia](#), [Amfissa](#), [Karpenisi](#))

[Technological Educational Institute of Larissa](#) (campuses: [Larissa](#), [Karditsa](#), [Trikala](#))

[Technological Educational Institute of Western Greece](#) (campuses: [Patras](#), [Missolonghi](#), [Pyrgos](#), [Aigio](#), [Nafpaktos](#) and [Amaliada](#)) (Created by the union of T.E.I. of Patras and T.E.I. of Missolonghi)

[Technological Educational Institute of Piraeus](#)

[Technological Educational Institute of Serres](#)

[Technological Educational Institute of Western Macedonia](#) (campuses: [Kozani](#), [Florina](#), [Kastoria](#), [Grevena](#) and [Ptolemaida](#))

Students who successfully complete their studies in universities and T.E.I. are awarded a *Ptychio* (degree) which leads to employment or further study at the post-graduate level. University and T.E.I. graduates can continue their studies to attain an MSc and a PHD provided they meet the criteria set by each department running the courses. According to the Constitution of Greece, higher education is public, is provided solely by the state and is provided free of charge at the undergraduate level. Fees for some MSc courses are set by the departments running the courses. The State Scholarships Foundation (IKY) provides scholarships to students who wish

to study at tertiary education institutions. Scholarships are also granted to graduates of universities and technical education institutions for post-graduate or post-doctoral studies in Greece and abroad based on academic achievement of undergraduate studies. Additionally, students (at any level) can receive mobility grants to study at other European Higher Education Institutes under the Lifelong Learning Programmes (LLP). The first cycle leads to the first degree (*ptychio* or *diploma*) in both sectors of higher education, i.e. the university and technological sectors. The second leads to the second degree, which is called a postgraduate specialisation diploma (equivalent to the Master's degree), and the third degree (doctorate). Studies in the fields known as regulated professions (medicine and surgery, agriculture, arts, dental studies, pharmacy, veterinary medicine and engineering) last for five to six years. A doctorate is obtained after at least three years of original research, including the preparation and writing of a thesis. In some doctoral programmes, theoretical courses are compulsory and are taken prior to individual research. Under the 2004 law, a new international scheme for joint Master's degrees has been established. This provides for cooperation between institutions to work out the details concerning the organisation and functioning of postgraduate study programmes which lead to joint qualifications. Art. 23 of law 3404.

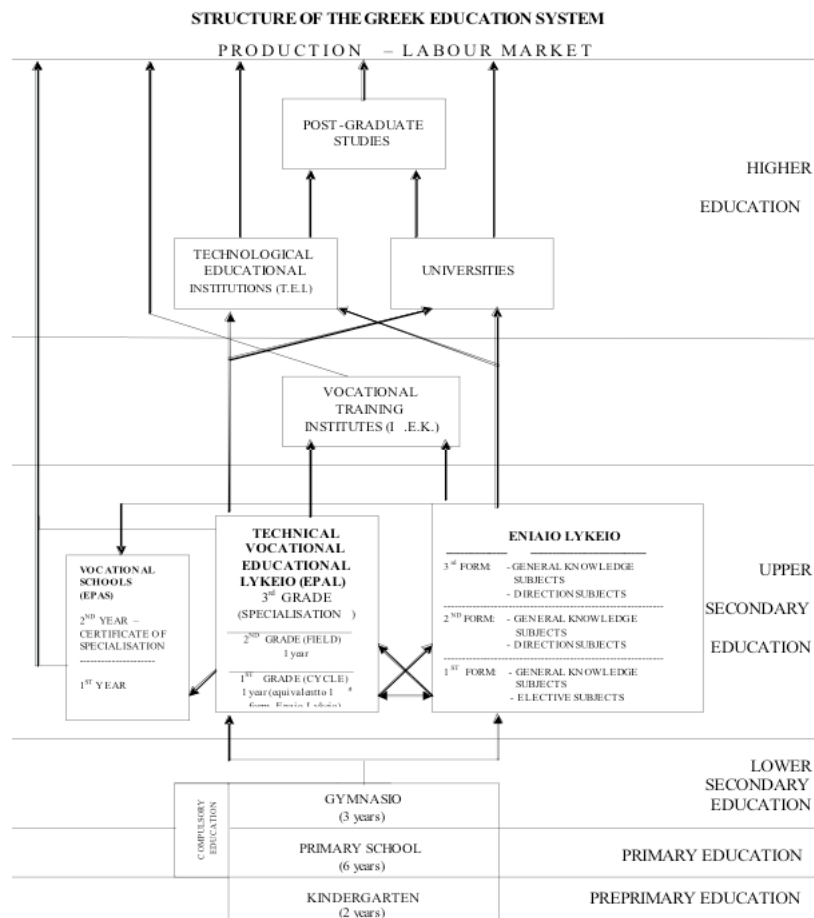


FIGURE 1: STRUCTURE OF THE GREEK EDUCATION SYSTEM

TABLE 1: UNIVERSITIES & TECHNOLOGICAL EDUCATION INSTITUTES OF GREECE

UNIVERSITIES & INSTITUTES	WEB SITE	STRUCTURE OF EMPLOYMENT AND CAREER/CAREER OFFICE/ LIAISON OFFICE
NATIONAL & KAPODISTRIAN UNIVERSITY OF ATHENS	http://www.uoa.gr/	CAREER OFFICE http://www.uoa.gr/foihtes/symboleytikis-yphresies/grafeio-diasyndeshs.html LIAISON OFFICE http://www.uoa.gr/to-panepistimio/yphresies-panepisthmiakes-monades/grafeio-diamesolabhshs.html
NATIONAL TECHNICAL UNIVERSITY OF ATHENS (NTUA)	http://www.ntua.gr/	CAREER OFFICE http://career.central.ntua.gr/ LIAISON OFFICE http://liaison.ntua.gr/core/portal.asp?cpage=NODE&cnode=1
AGRICULTURAL UNIVERSITY OF ATHENS	http://www.aua.gr/index.php	CAREER OFFICE http://www.career.aua.gr/
ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS	http://www.aueb.gr/	CAREER OFFICE http://www.career.aueb.gr/
PANTEION UNIVERSITY OF SOCIAL AND POLITICAL SCIENCES	http://www.panteion.gr/	CAREER OFFICE http://www.panteion.gr/index.php?p=content&section=20&id=143&lang=el
ATHENS SCHOOL OF FINE ARTS	http://www.asfa.gr/	CAREER OFFICE http://www.dasta.asfa.gr/frontend/articles.php?cid=2
UNIVERSITY OF PIRAEUS	http://www.unipi.gr/	CAREER OFFICE http://career.unipi.gr/
ARISTOTLE UNIVERSITY OF THESSALONIKI	http://www.auth.gr/	CAREER OFFICE http://dasta.auth.gr/cmsitem.aspx?sid=2&id=155
UNIVERSITY OF MACEDONIA	http://www.uom.gr/index.php	CAREER OFFICE http://career.uom.gr/careerindex/index.html

UNIVERSITY OF WESTERN MACEDONIA	http://www.uowm.gr/	CAREER OFFICE http://dasta.uowm.gr/career/
UNIVERSITY OF PATRAS	http://www.upatras.gr/	CAREER OFFICE http://www.upatras.gr/index/page/id/104
UNIVERSITY OF PELOPONNISOS	https://www.uop.gr/index.php	CAREER OFFICE http://career.uop.gr/
UNIVERSITY OF IOANNINA	http://www.uoi.gr/gr/	CAREER OFFICE http://www.uoi.gr/gr/facilities/career_office.php LIAISON OFFICE http://liaison.uoi.gr/
UNIVERSITY OF CRETE	http://www.uoc.gr/	CAREER OFFICE http://www.dasta.uoc.gr/career/
TECHNICAL UNIVERSITY OF CRETE	https://www.tuc.gr/2969.html	CAREER OFFICE http://www.career.tuc.gr/3532.html LIAISON OFFICE http://www.liaison.tuc.gr
UNIVERSITY OF THE AEGEAN	http://www.aegean.gr/	CAREER OFFICE http://career.aegean.gr/
DEMOCRITUS UNIVERSITY OF THRACE	http://www.duth.gr/	CAREER OFFICE http://career.duth.gr/cms/
IONIAN UNIVERSITY	http://www.ionio.gr/central/	CAREER OFFICE dasta.ionio.gr/liaison
UNIVERSITY OF THESSALY	http://www.uth.gr/	CAREER OFFICE http://www.career.uth.gr/
HELLENIC OPEN UNIVERSITY	http://www.eap.gr/	CAREER OFFICE http://career.eap.gr
INTERNATIONAL HELLENIC UNIVERSITY	http://www.ihu.edu.gr/	CAREER OFFICE http://career.duth.gr/cms/
THEOLOGICAL EDUCATION INSTITUTE OF ATHENS	http://www.teiath.gr/	CAREER OFFICE http://www.career.teiath.gr/Career/Articles/215.html

TECHNOLOGICAL EDUCATION INSTITUTE OF WESTERN MACEDONIA	http://www.teiwm.gr/index.php?lang=el	CAREER OFFICE career@kozani.teikoz.gr
TECHNOLOGICAL EDUCATION INSTITUTE OF EPIRUS	http://www.teiep.gr/	CAREER OFFICE http://dasta.teiep.gr/grafeiodiasynesis
ALEXANDER TECHNOLOGICAL EDUCATION INSTITUTE OF THESSALONIKI	http://www.teithe.gr/	CAREER OFFICE www.career.teithe.gr
TECHNOLOGICAL EDUCATION INSTITUTE OF CENTRAL GREECE	http://www.teiste.gr/	CAREER OFFICE http://career.teilam.gr/
TECHNOLOGICAL EDUCATION INSTITUTE OF THESSALY	http://www.teilar.gr/	CAREER OFFICE http://dasta.teilar.gr/default.htm?box=1&tile=112
TECHNOLOGICAL EDUCATION INSTITUTE OF IONIAN ISLANDS	http://www.teiion.gr/	CAREER OFFICE http://www.teiion.gr/index.php/el/management/daas.html
TECHNOLOGICAL EDUCATION INSTITUTE OF CENTRAL MACEDONIA	http://www.teikav.edu.gr/teikav/	CAREER OFFICE http://career.teikav.edu.gr/
TECHNOLOGICAL EDUCATION INSTITUTE OF KALAMATA	http://www.teikal.gr/	CAREER OFFICE http://dasta.teikal.gr/Career/default.aspx
TECHNOLOGICAL EDUCATION INSTITUTE OF CRETE	http://www.teicrete.gr/teien/index.php	CAREER OFFICE https://dasta.cs.teicrete.gr/web/career-office/ LIAISON OFFICE http://www.liaison.teicrete.gr/
TECHNOLOGICAL EDUCATION INSTITUTE OF WESTERN GREECE	http://www.teiwest.gr/index.php/en/	CAREER OFFICE http://www.teiwest.gr/index.php/el/home-2/dasta-gr
TECHNOLOGICAL EDUCATION INSTITUTE OF PIRAEUS	http://www.teipir.gr	Structure of Employment and Career (S.E.C.) http://www.teipir.gr/index.php?option=com_content&task=view&id=90&Itemid=84 Liaison Office http://gdias.teipir.gr Counseling and Psychological Support Center counseling@teipir.gr Practical Training Office http://apollon.teipir.gr/praktiki/ Innovation & Entrepreneurship Unit http://www.teipir.gr/mke/ European Programmes and International Relations Office, http://euoffice.teipir.gr/ T.E.I. Piraeus Alumni Association http://gdias.teipir.gr/alumni
TECHNOLOGICAL EDUCATION INSTITUTE OF CENTRAL	http://www.teiser.gr/	CAREER OFFICE

MACEDONIA		http://diasyndesi.teicm.gr/
SCHOOL OF PEDAGOGICAL & TECHNOLOGICAL EDUCATION http://www.aspete.gr /	http://web.aspete.gr/aspete/index.php	CAREER OFFICE http://dasta.aspete.gr/Career/default.aspx

5.2 ECONOMY & INDUSTRY IN GREECE

The economy of [Greece](#) is the [42nd](#) or [45th](#) largest in the world at \$249 billion or \$286 billion by [nominal gross domestic product](#) or [purchasing power parity](#) respectively, according to [World Bank](#) statistics for the year 2012. As of 2013, Greece is the [thirteenth largest economy](#) in the 28-member [European Union](#). In terms of [per capita income](#), Greece is ranked [37th](#) or [40th](#) in the world at \$22,083 and \$25,331 for nominal GDP and purchasing power parity respectively. A [developed country](#), the economy of Greece mainly revolves around the [service sector](#) (80.6%) and [industry](#) (16%), while [agriculture](#) made up an estimated 3.4% of the national economic output in 2012. Important Greek industries include [tourism](#) and [shipping](#). The [Greek Merchant Navy](#) is the largest in the world, with Greek-owned vessels accounting for 15.17% of global [deadweight tonnage](#) as of 1 January 2013. With 15.5 million international tourist arrivals in 2012, Greece was the seventh most visited country in the European Union and sixteenth in the world. The country is also a significant agricultural producer within the EU. With an economy larger than all the Balkan economies combined, Greece is the largest economy in the Balkans, and an important regional investor. Greece is the number-two foreign investor of capital in Albania, the number-three foreign investor in Bulgaria, at the top-three foreign investors in Romania and Serbia and the most important trading partner and largest foreign investor of the Republic of Macedonia. Greek banks open a new branch somewhere in the Balkans on an almost weekly basis. The Greek telecommunications company [OTE](#) has become a strong investor in Yugoslavia and other Balkan countries. Greece is classified as an advanced, [high-income](#) economy, and was a founding member of the [Organisation for Economic Co-operation and Development](#) (OECD) and the [Organization of the Black Sea Economic Cooperation](#) (BSEC). The [Treaty of Accession](#) of Greece to the [European Communities](#) was signed in [Athens](#) on 28 May 1979, and the country formally joined what is now the [European Union](#) on 1 January 1981. On 1 January 2001 Greece adopted the [euro](#) as its currency, replacing the [Greek drachma](#) at an exchange rate of 340.75 drachmae per euro. Greece is also a member of the [International Monetary Fund](#) and the [World Trade Organization](#), and is ranked 31st on the KOF [Globalization Index](#) for 2010 and 34th on the Ernst & Young's [Globalization Index](#) 2011. The country's economy was devastated by the [Second World War](#), and the high levels of economic growth that followed throughout the 1950s to 1970s are dubbed the [Greek economic miracle](#). Since the turn of the millennium, Greece saw high levels of GDP growth above the Eurozone average, peaking at 5.9% in 2003 and 5.5% in 2006. The subsequent

[Great Recession](#) and [Greek government-debt crisis](#), a central focus of the wider [Eurozone crisis](#), plunged the economy into a sharp downturn, with [real](#) GDP growth rates of -0.2% in 2008, -3.1% in 2009, -4.9% in 2010, -7.1% in 2011 and -6.4% in 2012. In 2011, the country's public debt reached €355.141 billion (170.3% of nominal GDP). After negotiating the biggest [debt restructuring](#) in history with the [private sector](#), Greece reduced its sovereign debt burden to €280.4 billion (136.5% of GDP) in the first quarter of 2012. Between 2005 and 2011, Greece has had the highest percentage increase in industrial output compared to 2005 levels out of all 27 [European Union](#) members, with an increase of 6%. [Eurostat](#) statistics show that the industrial sector was hit by the [Greek financial crisis](#) throughout 2009 and 2010, with domestic output decreasing by 5.8% and industrial production in general by 13.4%. Currently, Greece is ranked third in the [European Union](#) in the production of marble (over 920,000 tons) after Italy and Spain. Between 1999 and 2008, the volume of retail trade in Greece increased by an average of 4.4% per annum (a total increase of 44%), while it decreased by 11.3% in 2009. The only sector that did not see negative growth in 2009 was administration and services, with a marginal growth of 2.0%. In 2009, Greece's labor productivity was 98% that of the EU average, but its productivity-per-hour-worked was 74% that the [Eurozone](#) average. The largest industrial employer in the country (in 2007) was the manufacturing industry (407,000 people), followed by the construction industry (305,000) and mining (14,000). Main industries: shipping (4th; 2011), tourism, food and tobacco processing, textiles, chemicals, metal products; mining, petroleum.

5.2.1 Textile Industry in Greece

Textile constitutes an important sector of Greek manufacturing industry, which includes many individual sub-fields as the spinning, the weaving, the clothing and other sectors which are correlated. According to data of the Greek Textile manufacturers, the sector of textile contributes with roughly 15% in the configuration of GNP of the country, while it occupies 70.000 workers, including the personnel that is occupied in the sector of clothing also. The total number of workers approaches the 120.000 individuals representing the 28% occupied in the domestic industry. The exports of textile manufacturing products and ready clothing classify this wider sector as the bigger export of the domestic manufacturing industry, representing the 23% of total exported products or the 47% of exported industrial products and participating with 28% in the industrial production of country, developing the domestic raw material, the cotton. The textile in Greece presented important rythms of growth at the decades '60 and '70, period at which it maintained powerful place in the domestic industry. Since then, it entered in period of recession, with important reduction of domestic production and investment activities, so that it is led to shrinkage and a lot of textile manufacturing units suspend completely their work. However, the most important problem is focused in the competition that Greek products mainly accept Third Countries (from Turkey, Pakistan, India, China) in the Greek market and in European market, as well. Today the number functioning spindles in the spinning is calculated around 750.000-800.000, lower comperativly to 1,5 million in the beginning of 80's. It is however pointed out that, the majority of the spindles are of

modern technology with higher speeds, and are installed in new spinning units replacing the old ones. According to marketing sources, in the sector have remained henceforth the healthy enterprises, while it should be pointed out that the possibility of investments was increased mainly because of the capital that was drawn from the Stock Exchange Market. The continuing modernisation of productive units is essential, in order to achieve reduction of cost of production, improvement of quality and specialisation in products of great added value. In this way Greek enterprises strengthen their competitiveness in the Greek market, and in international markets, as well. Already, large enough companies of the textile sector produce high quality products. First place in the domestic production of ginned cotton. Market Share 8,5%. Second place in the domestic production of yarn. Market Share 10%. First place in the export of yarn. Market Share 15%.

5.3 COOPERATION BETWEEN UNIVERSITY & INDUSTRY

Observing university industry cooperation models is reserved to the following section of the report. The next section reports the Greek model of cooperation between universities and industry especially in an EU (projects) context. In this case the model gives information how to improve cooperation possibilities in a rapidly developing economy and with an impetus from the EU. Let's not forget the four strategic objectives that the EU focuses through operational programmes such as:

- ✓ 1st Strategic Objective: "Upgrading the quality of education and promoting social inclusion ." Strengthening human resources and decentralized structures of the educational system, to improve its quality, to upgrade services and better meet the needs of modern society and economy.
- ✓ 2nd Strategic Objective: "Upgrading the systems of initial vocational training and vocational education and online education with the labor market" Development of human capital in the context of upgrading the initial vocational training and vocational education, with opportunities for continuous improvement of the qualifications and skills of young people. Under this axis, including special attention to the promotion and mainstreaming of gender equality and equal opportunities.
- ✓ 3rd Strategic Objective: "Strengthening lifelong adult education" Widening participation in staffing actions lifelong education, to acquire knowledge, skills and competencies that will promote personal growth, increase active participation in the labor market, especially women and contribute to strengthening social cohesion, reducing the social exclusion and facilitating access to education. Towards this puts the inclusion of socially vulnerable groups, people with disabilities and women in lifelong learning activities.
- ✓ 4th Strategic Objective: " Strengthening human capital for the promotion of research and innovation" Developing human capital through a) the promotion of research and innovation, and b) the quality improvement and targeted thematic orientation of graduate studies in Higher Education Institutions, independently or in collaboration with other research centers and research and technology organizations in order to further enhance the research

potential, according to the perspectives of science and the needs of the productive sector.

Starting from the identification of the relative position, missions and flows of activities within the University and Industry sectors in the knowledge based society, a systemic representation is proposed as a starting base. The cooperation with the industry creates a more complex environment with more parameters that makes more complex the synergetic effects and synergy processes. To cope with these new challenges, the entrepreneurial university is presented in the context of the knowledge based society. An industry in a globalised economy depends critically on innovation and its ability to increase productivity through process innovation. Innovation itself depends on the creation, application and diffusion of new knowledge. Since an advanced economy can only compete by creating new product and technology, the creation and diffusion of the knowledge on which this is based has become a factor of utmost importance. A significant part of the knowledge is produced in the academic research sector. New knowledge and ideas, generated “for the sake of the art”, i.e. remaining separated from innovation, are economically worthless. In a globalised economy, when the governmental funding has become chronically insufficient, Universities cannot afford to ignore this aspect and remain separate from industry. Therefore a fundamental changed attitude is Society needed, as well as new schemes of cooperation, which should be attractive for the industries. The production of new knowledge has therefore to be integrated into the mainstream of economical resources. This requires a structural connection between the universities and economic systems of society. The traditional division of labour and functions between academic science, academic teaching and industry (applied research, development, innovation) seems to be already obsolete at least from the university point of view. Since the 1980s, Higher Education in Europe has had to respond to increasingly complex and varied needs of society. The economic progress of the society and a reconsideration of its theoretical background has directly affected the university sphere. Accordingly, higher education must face a number of new problems. First, the demands of society are such that higher education institutions do not have sufficient capacity to respond. On the other hand, cuts in public spending have meant fewer funds for the University and even the existing funding is increasingly subject to the outcomes produced. The concept of Accountability has appeared, and this means that universities are required to justify themselves to society. All this is aggravated by the fact that knowledge now exceeds resources and this has created a huge pressure on the universities to market the new knowledge they traditionally produce. Faced very often with institutional inefficiency, the response of many universities has been to adapt to the circumstances and develop an entrepreneurial response. The entrepreneurial attitude is seen as one of the possible solutions for the university to cope with the ever increased complexity of the economic mechanisms. This means that the university should foster on the application of the new knowledge through *innovation* in order to take full advantage of its creation. According to the definition, in order to become entrepreneurial, a university should focus on the application of new knowledge i.e. innovation and this could be approached in three possible scenarios: 1. to transfer the knowledge to

incumbent firms; 2. to transfer the knowledge to individuals starting a new firm; 3. to establish a new firm by himself. Of course, the keyword here is transfer of knowledge. Various success stories from Asian countries and USA could be evocated to illustrate the theory: the industrial platform model (very successful in Taiwan for example), the entrepreneurial model of Stanford (Silicon Valley) and MIT, where the application of knowledge is an essential part of the institutional mission and is very carefully assessed and explicitly encouraged etc. These success stories are examples of technology transfer by using the university as fertile field for industrial platforms creation. We will call this a top-down approach since it is based on the principle of creation of a hyper-innovative environment, able to feed continuously initiation and rapid growth of new businesses. Entrepreneurial activity has traditionally occurred at 2 different levels within universities: (i) Individual activities of teachers and students: consultancy, grant acquisition, firm creation, (ii) Entrepreneurial universities = Organisational entrepreneurship with the following features: Support services for individual activities, Professional education, Real estate and other financial investments, Commercialisation of tuition, Excellence in research and education, Consultancy, Community service. Partnerships between the University and Industry sectors, either at national or European level, were given policy priority in the E.E.C. since more than 3 decades. The target was to liaise the Universities and their courses to the socioeconomic needs, the regional development strategies and last but not least to the industry. The University potential in collaboration with industry staff, is expected to contribute to regional development and high Quality Education and Training, through various innovative efforts and initiatives, planned by several partnerships. In the relation between Universities and Industry in Greece cooperation is a key issue. This is done in different ways: academic infrastructures, academic programs, common research projects, internships, seminars etc. Examples range from support for individual spin-off companies, over strategic collaboration with well known research institutes to networking in the universities. With the use of EU funds, our country managed to raise the knowledge bar to levels competing the most advanced countries in the world. Focusing on Higher Education, actions were funded, whose results are reflected in various ways such as research & innovation promotion, well-equipped libraries, operation of new departments, upgraded undergraduate and postgraduate studies. However, since the requirements in knowledge grow by leaps and bounds and we certainly should harmonize with the rhythms of the season, the continuous support of the Higher Education -and the cooperation with the market & the industry- becomes necessary with the ultimate challenge of achieving the specified objectives in order to prove to the Community co-financing, the value of investment & co-financing in the Greek society. In the above context, they have been in operation and still go on several actions designed to link education and the labor market and to encourage research. Indicatively, we mention Structures of employment & career, Liaison Offices, Practice, Entrepreneurship, Hrakleitos, Thales and Archimedes. The rational implementation of the above results in upgrading the quality of education by promoting spiritual values and helping to shape a society ready to gestate "ideal citizens" as well as reinforcing the market and the industry by promoting innovations and by creating a new healthy economic environment. However despite the EU

funding (at 75%) autonomous viability of most of the above structures is trying to be achieved in the University World. Besides that the recent laws concerning the University framework and the relations to its stakeholders encourages the last decade especially the cooperation with the industry and not only. Most of the above mentioned structures are parts of the organisational structure of the Universities & Institutes.

5.3.1 Good practices of cooperation between HEI & Industry - Greece Case Study

Societies are rapidly changing, the status of labor relations is changing and the public sector is shrinking everywhere. Graduates of Greek AEI-TEI are invited to build a career in a completely new working environment with high uncertainty and low employment prospects in the public sector but also in the old private sector with the high recession. With this in mind, the development of self business' capabilities by taking innovative business activities has become the last years, crucial for Higher Education Graduates and Greek economy in general. Even those who attend schools that produce Teaching Staff or skills that are not directly related to the economy, need studies that highlight and unravel all aspects of their creativity. Entrepreneurship and Innovation in Education and consequently the synergy between HEI & Industry should therefore not be uniquely associated with the concept of profit business, but also with the deeper human need of emergence of individuality and personal completion of each. Conversely, lack of entrepreneurial initiative, research leads inevitably to the employment of the dependent jobs and last but not least to services vs production –with high uncertainty nowadays. All the structures mentioned above, among other things, aim to support the cooperation between HEI & Industry and stress through publicity actions the good practices. One of the objectives is to reassess the concept of entrepreneurship which must gain a friendlier content for its stakeholders. This primarily means, changing mentalities that incumbent associate career, first of all, with the State and face the market, the industry and the profession as a source of risk and uncertainty rather as a starting point for personal fulfillment and offer opportunities. This section examines the current situation in Greece concerning the good practices of cooperation between HEI & Industry. For this purpose, summarized, in principle, the previous structures, actions implemented in Greek higher education today, will be presented.

Liaison Offices: The purpose of these Offices is to support the members of the University community and the creation of appropriate partnerships for further development of innovative research results. They usually offer the following services: Continuous recording of interesting workshops and opportunities for participation in programs, System targeted information on interesting workshops available funding, but requests for cooperation from other agencies, based on their interests and abilities, Counseling and support for participation in proposals, Assistance in finding suitable partners, Finding partners, Counseling in signing the agreements on

intellectual property and cooperation agreements in the context of equity -funded programs, Contact with local businesses who are interested in cooperation with the University, Creating networks with other Liaison Offices in Greece and abroad, Establishing relationships with regions, municipalities and other bodies involved in the development of the region, Establishing relationships with our nearby universities and colleges, Organisation of information days for researchers, Organisation of information days for local entrepreneurs, Information, education staff on issues related to the better functioning of the office, Search for funding to enhance the function of that office, Contact with the local press, Production of information material, Maintain updated website, Continuous recording of useable research laboratories results to find suitable mode of recovery and appropriate method of financing, Providing legal advice and assistance for the registration of a research and cooperation agreements: Copyright, Trademark, Draft , Patents, Confidentiality Agreement for preliminary discussion exploitation investigation, Technology transfer agreements or technology to third parties, License Agreement, Cooperation Agreements, Surveys, Support in applying for patent, Investigate the existence of another patent, Decision on Greek or other patent, Assisting in the preparation of the patent application, Applying patent, Find programs or other funding agencies for exploitation of research results, Financing of current programs, Funding from specific industrial or other entities) that are in contact and may be interested, Funding from Venture Capital, Funding bodies warmers, Find partners through participation in targeted Investment Forums.

Career Offices: Have been operating the last two decades aiming to offer a source of up to date and accurate advice and information on a range of educational, career guidance and counseling issues, a meeting point between education and the labour market, an opportunity to get in contact with public sector bodies, in general, a bidirectional node between the Academic Society and the production sector to create partnerships, a contact point between Universities and other educational institutes throughout Greece and abroad. More specifically, the most important services offered by the majority of Career Offices of the Universities of the country are Counseling Services (Divided into actions of group and individual counseling concerning on resume writing, cover letter, job interview personal, career search techniques, career decision), Services in connection with the labor market (Include activities aimed at market approach, Working primarily through the development of contacts and cooperation with enterprises and employers' organizations, as well as the communication of available work positions), Services related to Postgraduate Studies and Scholarships, Services to faculty members and departments of their institutions, Services to the Secondary Education, Events – Events, Entrepreneurship Services etc.

Structures of Employment and Career: With the continuation of the funding in the frames of NSRF (National Strategic Reference Framework) and the operational programme for education and life -long learning, co-financed by Greece and European Union, a new structure is developed the Structure of Employment and Career which is established and is active since 2007 in Higher Education and is

responsible for organizing, supervising and coordinating all individual structures / programs relating to the connection of higher education to the Labour Market and Industry. Career Offices, Practical Training Offices, Innovation & Entrepreneurship Units, Counseling and Psychological Support Centers are separate parts of Structures of Employment and Career (S.E.C.).

Practical Training Offices: Practice is an important part of the Higher Education regarding the contact between students and the Labour Market. It is a way of linking theory with practice. The actual application of knowledge in labor market can be reached in the development of entrepreneur-graduates and creating new jobs. Also, the acquisition of such experiences can help in the proper orientation of a student in many cases. The Practice aims to achieve two-way feedback between Higher Education and the workplace. The intervention sought the essential connection between education and production to such an extent that the practical training is not only a request from Institutions to Labour Market but also from Labour Market to the institutions. It contributes to achieve bidirectional communication between the Higher Education and the Labour Market, Industry.

Innovation & Entrepreneurship Units: All programs included activities such as: Introduction of entrepreneurship courses (The type, structure and number of courses vary between programs, and the audience addressed), Production of educational material for educational purposes, Visits to businesses and other organizations associated with the object of study of the students, Seminars for entrepreneurs and business executives, virtual enterprises and / or developing simulation exercises and website development both for information and for distribution of educational material, Development of case studies referring to specific existing companies or specific business issues, Development of business ideas and business plans, Prizes of Entrepreneurship, Creation of Figures mentoring within the contact between students & business executives and organizations, Networking (Includes participation in events and conferences of organizations implementing entrepreneurship programs, contact with alumni networks, with incubators of new businesses - technology parks, with new centers of entrepreneurs), Activities for the promotion and publicity of the program as conferences, workshops and display production and diffusion of printed promotional material.

Vocational Training Centres-Technological Research Centers-Institutes for Lifelong Education-Research programmes (Hrakteitos, Thales and Archimedes etc): All these structures or programs play an important role in the HEI-I synergy and reinforce their cooperation through different kind of actions (seminars, creating innovation, targeted workshops and research etc.)

Entrepreneurship services: Programs to encourage entrepreneurial activities, innovative applications and elective courses, Organization of annual National Competitions for development of innovative and pioneering business plans, Workshops and round tables for transmission of specialized knowledge and in-depth discussions with people who have experience in business, Seminars on

acquaintance with the experiences entrepreneurs, Library to study the theoretical part, Case studies for acquaintance with the history of real business, Simulated exercises for immediate understanding and addressing individual problems, Virtual simulation companies for the understanding of the overall ups, Visits to enterprises (and if possible practice) for experiential understanding of business operation, Edit business ideas (possibly innovative) to exercise to capture opportunities for new products and services, Prepare business plans of learners with approach to actual conditions, Figures mentoring for the transfer of experience of business, Counseling and guidance to better understand the design of business activity, Participation in business innovation contests and competitions for gaining experience etc.

European Programmes and International Relations Offices: contribute in their own way through special programmes or actions to the Higher Education and Industry cooperation emphasizing in the European dimension (Erasmus, Erasmus plus for young entrepreneurs, Leonardo, etc).

Last but not least, we can't doubt the supporting role that some other structures, programs such as **Mentoring programs, Alumni Associations, Horizontal Action bodies** play.

5.3.2 Results and Impacts

In the implementation of the previous related structures, programs, actions in the Institutions of Higher Education observed from different point of views and approaches there is a variation in the success and the achievement of the objectives. Through these different approaches, however a series of "good practices" can be traced, which can be analyzed and exploited (when it is possible or where adjustments are applicable) in the synergy of Higher Education Institutions & Industry. The "good practices" identified concern both Incentive Programs, Business activities, innovative applications, actions of entrepreneurship, Liaison Offices etc discussed below. The result is identified in realizing stable and long-term partnerships between education and production (at local, regional or national level). The stability and duration of these partnerships have enabled substantial involvement of stakeholders and people outside of institutions and provided substantial incentives for their participation in program activities. At the same time, it was a factor of activation for local communities (in an extent) as to be interested and be involved, while this helped significantly the diffusion and dissemination of programs and results. At the level of cooperation and networking, a good practice in relation to cooperation and joint activities within the institutions themselves but also with others. The development and monitoring mechanisms for the progress of the programs and the achievement of objectives in relation to the qualitative characteristics can be identified as a good practice (for example questionnaires surveying business attitudes of students / students before and after monitoring entrepreneurship courses), which served as an effective tool of monitoring the achievement of quality targets and feedback of strategy for the stakeholders. Of particular concern in this case, is far beyond, the manner used to attract the stakeholders and involve them

and the way the different disciplines, both in terms of knowledge and attitudes are used. Supporting students, graduates, new & old entrepreneurs, creating spin off companies was of particular importance and increased efficiency. Finally, as good practice we can consider the involvement of more teachers, business-mentors and others in the process of drafting business plans. A broader and more effective transfer of knowledge and experience took place, with wider contribution and acceptance of both the academic programs and the industry.

In conclusion, there are a lot of deliverables produced all these years with a large geographical and sectorial impact along with enabling market potential for SME and inducing benefits such as job creation, triggered investment, trained people etc.

5.3.3 Lessons learned and replicability

Universities, all over the world, exist to fulfil three main goals: educate future leaders of their communities, promote the advance of knowledge in every academic field (research), propose an offer of continuous education to practitioners. We can see these three purpose in the statements of the Mission of our institutions as well as, in the introductory chapters, in University Laws in every country. Since the decade of 1990 there has been in Europe (EU) a reinforcement of the role that research must play in universities and research is becoming an increasingly important task for university teachers. This is true in every academic field and also in Industrial Engineering and in Operations Management as a branch of it. The university-industry relationships is important in many academic fields but especially in Industrial Engineering and so in Operations Management. The issue is to build a strong rather than a faint relevance of university research results and industry, something which is not always effectively done. Another issue is the knowledge management operation deriving from all the different structures/programs/actions which in some cases overlay each other and do not encourage scale economies.

In conclusion, there are a lot of lessons to be learned from all the analyzed structures/programs/actions and there is a variety of key factors of success. Most of the analyzed structures/programs/actions either already exist in other European countries or can be created in the future as long as there are adjusted to the specific circumstances.

5.4 ONE GOOD PRACTICE OF COOPERATION BETWEEN DEPARTMENT OF TEXTILE ENGINEERING OF TEI PIRAEUS AND VOSTEX

The Technological Educational Institute of Piraeus has created 1) smart textiles, electrically conductive yarns and fabrics by the method of metal coating deposition (electroless deposition), 2) a network of wireless sensors, 3) has implemented infrastructure wireless data communication. The Technological Educational Institute of Piraeus operates with high standards in education and research. Aiming high knowledge and development responds largely to the increased demands of a modern society to create strains with serious scientific infrastructure technology and applications. It Implemented conductive textile sensors with innovative method globally (team ESTHIS) etc.

One of the many good practices of cooperation that we will shortly analyse further is the one between Department of Textile Engineering TEI Piraeus and Vostex concerning technology transfer. The project entitled "Development of textile materials for use in telematics applications" was implemented under Action Innovation Vouchers for SMEs, between the innovation organization TEI Piraeus and the beneficiary enterprise AFI Vostantzoglou OE (distinctive title "VOSTEX"), with two months duration (15/4/2011- 15/6/2011) and a small budget of EUR 7,000. Work packages realized by the beneficiary institution, VOSTEX and implemented under the project were a) Set textile with metallic threads b)Set with textile filaments which have been coated with metallic copper or gold while the Work packages realized by the institution innovation, TEI Piraeus were a)Production of metal and coated yarns for the project's needs b) Organization of the production process and c)Technical instructions.

5.4.1 Research - Formulation and documentation of the problem

The VOSTEX company manufactures textiles, including belts, curtain, rubber cords. VOSTEX expressed interest to acquire expertise in the development of textile products using electrically conductive textile materials like conductive elastic belts, straps or curtain, which would have augmented properties and can be applied in the field of smart clothing with a variety of uses. By using electrically conductive yarns in the weave, as well as in combination with conventional yarns, for the production, the company was keen to produce products with metal fibers, yarns and fiber containing conductive polymer material and yarn containing coated metal fibers.

The goal was to make the company able to manufacture products that can be used in smart clothes for telematics applications (remote monitoring, remote control and telemetry), in medicine, defense, personal protection, etc. Specifically, the company sought expertise regarding the use of electrically conductive wires in strands and in combination with conventional threads, for textile production for niche applications. The intention was to produce products using metal fiber, mixed fiber yarns and conductive polymer material and coated with metal fibers. Following an investigation on existing know-how, this company came into contact with the Technological Educational Institute of Piraeus and the Department of Textile Engineering consequently, which is active in the relevant field, has conducted similar projects in the past and has the appropriate expertise. The relevant preliminary discussions were performed, the object was determined and finally the cooperation within the action "Innovation Vouchers for SMEs" was confirmed. The project team was established, consisting of personnel of both the Technological Educational Institute of Piraeus and staff of "AFI Vostantzoglou OE". Preparation steps took place as well as execution and management of the work program in accordance with the project objectives. People in the project team were familiar with the technical and practical parts of the issue.

5.4.2 Experiments - Testing - Development of prototypes

The data of the beneficiary company were identified and analyzed. Upon completion of the problem investigation, the project team worked with the identification and mapping of potential solutions as a function of the existing infrastructure. In the business infrastructure automatic weaving machines and semi-automatic are included. The use of both metallic yarn and metallised yarn presents several difficulties which have to do with winding the bobbin, which creates undesirable shifts that result in cutting the thread, the management of the crossings which are impaired by metallic threads, by interweaving metal, metallized and conventional synthetic yarns. Preparation was carried so as to provide the necessary resources, infrastructure and technical assistance required for the project. We studied the thread process structure and management. The filament path was analyzed and critical areas were identified. Problems were identified; the preparation and pretreatment of yarns were completed. The textile machines were adjusted by making the necessary changes and interventions-designed standards required products with electrically conductive regions woven. Production proofing followed in semiautomatic and automatic machines as well as construction of three kind of essays using metallic thread, using mixed yarn fibers & conventional conductive polymer material, and essays using metal-coated fibers.



Weave of metallic yarn



Woven lanyard with core consisting of yarns includes metal strands. Electrically conducting with a very low electrical resistance. Absolutely flexible.



Woven lanyard with core consisting of yarns include metal strands, close view.

A model of processes was developed for the use of materials in automated processes. Procedures were repeated and the business ability of processing the application procedures was verified. Last but not least, the processes on the data recorded throughout the course of implementation were analyzed. Moreover a technical manual was written and advisory regarding the above was performed.

5.4.3 Results - Project Review and Evaluation

The project "Development of textile materials for use in telematics applications' which was implemented by the cooperation of business Vostantzoglou BROS OE with the Technological Educational Institute of Piraeus, gave the company the necessary expertise to develop and produce a range of products which differ from the usual textiles produced in the Greek territory. These products allow the company to increase its competitiveness in so far as it is a unique supplier of the relevant market in our country. During the project, essays of woven straps, and curtain cords using metal yarn, thread and fiber conductive polymer material and coated with metal thread were produced. These new textiles produced in the frames of the project,

incorporating augmented properties with respect to the operation and use. Consequently, textiles with electrical conductivity properties for obtaining biological signals (electrical potentials) of the human body were produced. These products are used for building intelligent, multi-functional garment for receiving and recording biosignals from the human body. The production process of multi-functional textile products was formulated to yield products with quality features as specified.

5.4.4 Benefits for the company

The transfer of know-how for the implementation of new technologies and materials in the production of knitted multifunctional products from 'AFI Vostantzoglou OE' was completed successfully. A report was delivered on the results and the critical points that need attention. Moreover, directions were given to overcome technical difficulties and problems such as the use of special equipment and techniques for guiding the yarn to the machinery to minimize damage. Last but not least a manual with instructions and specific technical clarifications was written, education and counseling was held regarding the above so as to enable the contracting company to design and solve technical problems and to proceed with the production of goods. The capability of processing the application procedures of the business was verified. Plus the "AFI Vostantzoglou OE 'has the expertise and ability to produce a range of multi-functional textiles with electrical conductivity properties which keep the other properties of the fabric. This differentiates it significantly from other firms of its kind and supports making the specific know-how acquired in the framework of the project "Development of textile materials for use in telematics applications' significant competitive advantage.

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