



BalkanMed E-Business Pages

Good Practices Guide on Clusters and Technology Transfers- Greece

Hellenic Management
Association – Athens, Greece





Project Title:

BalkanMed E-Business Pages

Acronym: "BalkanMed e-BP"

Deliverable D.3 Handbook with good practices

Contracting Authority



Submission date: 28/02/2019

The Project is co-funded by the European Regional Development Fund and by national funds of the countries participating in the Interreg V-B "Balkan Mediterranean 2014-2020" Transnational Cooperation Programme

This "BalkanMed E-Business Pages - BalkanMed e-BP" Act deliverable, was prepared and submitted to the Hellenic Management Association by the Company:



GNOSI DEVELOPMENT CONSULTING P.C.

20 Karaoli& Dimitriou str, GR55131, Thessaloniki, Greece,

Tel.: +302310 403371

Fax: +302310 403372

E-mail: info@gnosianaptixiaki.gr

URL: www.gnosianaptixiaki.gr

Contents

INTRODUCTION	4
CHAPTER 1. Clusters in Greece	5
1.1 Analysis of registered business clusters in Greece	5
1.1.1 <i>Corallia Cluster</i>	5
1.1.2 <i>Si-Cluster</i>	6
1.1.3 <i>Mi - Cluster</i>	8
1.1.4 <i>Gi - Cluster</i>	9
1.1.5 <i>Made in Greece Cluster</i>	9
1.1.6 <i>Business Network of Chalkidiki SA</i>	10
1.1.7 <i>Olive Oil Products Network of Crete</i>	11
1.1.8 <i>Amyndeon Oenos Network</i>	12
1.1.9 <i>Furniture Centers</i>	12
1.1.10 <i>The Greek Maritime Cluster</i>	13
1.1.11 <i>Innovation Greece</i>	15
1.1.12 <i>PRAXI Network</i>	16
1.1.13 <i>Hellenic Bio Cluster</i>	16
1.1.14 <i>Technopolis Thessaloniki ICT</i>	17
1.1.15 <i>Cluster of Bioenergy and Environment of Western Macedonia (CLuBE)</i>	18
1.1.16 <i>Pharmacist's Supplying Cooperative of Attica (PRO.SY.F.A.P.E.)</i>	18
1.1.17 <i>Cretan Energy Cluster (Ecosolutions)</i>	19
CHAPTER 2. Benefits enjoyed by members of business clusters	21
2.1 Innovation	21
2.2 Complementarity and interdependence	21
2.3 Expertise and continuous education	22
2.4 Reputation	22
CHAPTER 3. Transfer of technology / know-how	24
3.1 Technology / know-how transfer mechanisms	24
3.2 Difficulties faced by enterprises during the transfer and implementation of technology / know-how	27
3.3 Advantages of technology / know-how transfer	28
BIBLIOGRAPHY.....	32

INTRODUCTION

This deliverable was assigned to GNOSI ANAPTIXIAKI Business Development Consultants by the **Hellenic Management Association** under the contract of 9/3/2018.

The project objective is to develop a database for small, medium and large manufacturing companies, clusters and other business associations operating in Greece, as well as the processing of data that was obtained from the field research and entered into the database. 250 enterprises and Bodies participated in the field research, in particular, 245 enterprises and 5 Bodies. The aim is to raise information on the export activity of Greek businesses, create Guides to strengthen business co-operation initiatives, and capitalize digital tools to enhance incorporation of innovative know-how / technology into local markets.

The current deliverable is a **Handbook that presents good practices from successful clusters in Greece**. For this framework, the Consultant processed and analyzed good practices is based in a review analysis of the type, the numbers of members and the services provided, but also the comparative advantages and benefits of the clusters.

CHAPTER 1. Clusters in Greece

1.1 Analysis of registered business clusters in Greece

Nowadays, clusters have not particularly developed in Greece. The factors that have not favored the creation and development of clusters are linked to the competitive conditions, structure and features of the business workforce, the way that companies are developed, and the absence of an integrated and coherent policy to support business networking.

The majority of clusters in Greece have been created either in the context of invitations to co-funded programs or in the context of European Competitive Programs. These clusters are often established under a specific project and their life spans do not exceed the duration of the project.

However, there are some clusters of companies that have remained viable to date and are presented below:

1.1.1 Corallia Cluster¹

Corallia is a "Greek Technology Clusters Initiative" and is the first institution established in Greece (2006) to organize and systematically manage and develop clusters, with the strategic goal of creating integrated productive and innovative ecosystems in which coordinated actors operate in specific sectors and regions of the country in knowledge-intensive, high technology and export-intensive industries. Corallia is Unit that

belongs to of the "Athena Research Center in Communications and Knowledge Information Technologies" (www.athena-innovation.gr) and is under the auspices of the General Secretariat for Research and Technology of the Hellenic Ministry of Education, Research and Religious Affairs (www.gsrt.gr). The vision of the founders of Corralia is to create a Greek environment with the right framework conditions to allow sciences, innovation and entrepreneurship to flourish (again). The mission of Corralia is to underpin and accelerate the development of cohesive and productive innovation ecosystems, within which actors operate in a coordinated manner, in specific sectors and regions of the country, and where a competitive advantage and export orientation exists. Moreover, Corralia intends to become a pan-European best practice cluster initiative/ organization supporting Greek world-class innovation clusters.



Main objective:

Corallia acts as a catalyst to **enable favorable conditions for the development, exploitation and promotion of innovations** developed within the clusters. For the development of these "*favorable*

¹<http://www.corallia.org/el/about-corallia.html>

conditions", it undertakes and implements specific supportive actions, which aim at individual strategic objectives, such as:

- ✚ Achieving **economies of scale**.
- ✚ Networking **globally**.
- ✚ **Capitalization** of business research.
- ✚ **Internationalization** of Greek businesses.
- ✚ Education and vocational **training**.
- ✚ Increasing **employment**.
- ✚ Creating a **common identity** and boosting **entrepreneurship**.

In particular, Corallia is referred as an important initiative that has helped to "strengthen competitiveness, entrepreneurship and innovation in knowledge-intensive and export-oriented sectors where Greece has the capacity to build a sustainable, innovative ecosystem". Corallia has already developed and currently supports the growth of three highly-specialized cluster initiatives in Greece, in knowledge-intensive thematic sectors, namely *the gi-Cluster (gaming and creative technologies & applications)*, *the mi-Cluster (nano/microelectronics-based systems and applications)* and *the si-Cluster (space technologies and applications)*. In addition, it manages the operation of three InnoHubs in strategic locations in Athens and other cities of Greece, *the a1 innohub and a2 innohub (HQ) in Maroussi* and *the p1 innohub in Patras*, while at the same time implementing a series of initiatives for acceleration of young entrepreneurship.

Finally, Corallia invests in international collaborations, in order to promote the extroversion of Greek entrepreneurship, to exchange good practices and promote partnerships with corresponding European and international initiatives.

1.1.2 Si-Cluster²

Si-Cluster is a dynamic and steadily growing industrial innovation cluster in Greece which is focused on the field of space technologies and applications. It is mainly composed of small, medium-sized and large enterprises and, in addition to its industrial base of activities, it cooperates with all stakeholders in the innovation ecosystem, the academic community, research centers, networks and associations, national, European and regional authorities and other stakeholders operating in the technological field.



Si-Cluster coordinates five important Cooperative Research and Development projects, aiming at the development of sustainable aerospace products through the cooperation of its members.

Main objectives:

²<http://www.si-cluster.gr/>

The **development of industrial and scientific excellence in specific fields of space technologies and applications**, with respect to the different missions, roles and responsibilities of industry, the academic community and end users.

Si-Cluster's mission is the promotion of Greece among the countries developing space technologies, forming a world-class cluster that is able to absorb, retain and enhance the intellectual capital developed in the local space industry.

Si-Cluster consists of Corallia, the Hellenic Association of Space Industry (HASI) and more than 55 members, research centers and academics bodies, including existing companies and startups. Aims to strengthen cooperation with all stakeholders in the innovation ecosystem, academic community, research centers, national, European and regional authorities as well as other stakeholders in a fast-growing market such as the sector of space technologies and applications.

Benefits of network members:

It is worth mentioned that si-Cluster provides its members with wide range of services and benefits, such as:

- ✓ Relocation and co-location in its facilities.
- ✓ Fully equipped business center.
- ✓ Research laboratory for the development of space technologies and applications.
- ✓ Business incubation area (collaborative space for up to 26 startups or new entrepreneurs)
- ✓ Exhibition space of products / services.

Primary strategic goals:

The primary strategic goals of si-Cluster are:

-  Development of **industrial and scientific excellence** in specific technological and application fields
-  Development of the necessary prerequisites in order to have a highly **competitive, innovative** and **transparent** economy
-  Development of a **compensative** and **flexible mechanism** which will be able to absorb, retain and further enhance of the intellectual capital developed by the local space industry.
-  Full **exploitation** of the services provided today by the modern space technology. The provided services include disaster monitoring, border surveillance and control, weather forecast, environmental disaster monitoring, smart citizen's transportation, telecommunication, electric power transfer, services for the reduction of the digital divide.
-  **Integration of its scientific and industrial communities**, consistent with the proper role of each community in the different phases of the value chain associated to navigation telecom, earth observation, especially those with a high added value for the industry and thus for the national economy.
-  **Coordination** of all space-related programs of different ministries and governmental organizations (e.g. Ministry of Defense, Ministry of Transportation, Ministry of Education, General Secretariat for Research & Development, etc.) in order to maximize economies of scale emphasizing on specific technological areas of national interest.

- ✚ Development of the **appropriate research culture** in the local space industry in order to closely monitor related developments in technologies and applications in global scale.

1.1.3 Mi - Cluster³

The Nano/Microelectronics-based Systems and Applications Cluster (mi-Cluster), is the first innovation cluster in Greece, which since its establishment has shown significant development in a number of performance measures. It is largely characterized by an intensive export orientation and the design of innovative products worldwide. Furthermore, mi-Cluster has attracted domestic and foreign investment and has contributed to the employment of highly skilled workforce with positive multiplier effects on entrepreneurship, innovation and the national economy overall.



Today, mi-Cluster consists of the Cluster Facilitator (Corallia), the Industrial Association (HSIA), and more than 30 industrial members (large enterprises, SMEs, international design centers and start-ups). In addition to its industrial basis, over 50 members currently represent academic and research institutes, the finance sector, national and regional authorities, media, etc., promoting complementarity within the innovation ecosystem.

Main objectives:

The mission and vision of mi-Cluster is through systematic and collaborative efforts of all participating members and with the solid guidance of Corallia as the cluster facilitator, to create the ideal environment that will enable sustainable growth and as a world class cluster, to be recognized as an accountable player in the global market of microelectronics.

The primary strategic goals of mi-Cluster are:

- ✚ The **continuous and sustainable growth** of the cluster, the cluster members and establishing the industry in the global market.
- ✚ Recognition of Greece as an **accountable player** in the global market of microelectronics.
- ✚ Supporting and achieving entrepreneurial and R&D excellence as a powerful tool to develop **innovative** and **competitive** world class products.
- ✚ Improve **productivity** and **profitability** of its members through the promotion of innovations in the global market.
- ✚ Attract domestic and foreign talent to **support and boost the industry**, through capitalization of the human capital.
- ✚ Attract **domestic** and **foreign investment** for the industry
- ✚ Attract **big multinational corporations** to outsource and invest or to create **design centers** in Greece
- ✚ Continuous **training** and **knowledge growth** for the cluster members
- ✚ Creating **economies of scale**

³<http://www.mi-cluster.gr/el/>

1.1.4 Gi - Cluster⁴

Gi-Cluster is the first creative industries cluster established Greece. It comprises of small and large companies, academic and research institutions, all involved in the Gaming and Creative Technologies and Applications Industry and forms a domestic, industry-led value-chain developing high-tech, state-of-the art competitive products for the international market.



Since its establishment in 2012, Corallia acts as the gi-Cluster facilitator and orchestrates the design and implementation of all its initiatives and actions, always in alignment with the clusters' mission to become a world-class, fully operational innovation ecosystem, which will contribute towards elevating Greece in the global competitiveness charts.

Main objectives:

In sync with global cluster management standards, initially introduced in Greece by Corallia, the Vision "create locally | compete globally" and the scope of establishing the message "Innovation Designed in Greece" critically determine the cluster's operation for they form the guiding framework for any activity designed and undertaken within the gi-Cluster.

The offering of guidance and entrepreneurial support to cluster members by the management team seeks to achieve:

- ✚ Increase of both **short** and **long-term productivity, turnover** and **export**.
- ✚ Support employment growth via **job creation**
- ✚ Strengthen **international presence** and **members' orientation** by utilizing the strong international network offered by the gi-Cluster facilitator to the entire ecosystem
- ✚ Improve **competitiveness** and **business readiness** levels.

1.1.5 Made in Greece Cluster⁵

Made in Greece Cluster is an Umbrella brand of Pure Greek products, managed by OECON GROUP Co., aiming at the development of Greek Exports and the Promotion of the Value of the Greek diet. It was established 3 years ago and consists of more than 50 Greek Producers in the Quality Food and Drinks sector. The Cluster's activities have been supported by the Greek Ministries of Foreign Affairs, Agriculture and Food Industry.

Indicative companies which participate in Made in Greece Cluster are:



⁴<http://www.gi-cluster.gr/el/about-gi-cluster.html>

⁵<http://www.expertexperts.gr/index.php/gr/made-in-greece-cluster>

- **ABEA:** Producer of olive oil & cosmetics by olive oil
- **ANOSKELI:** Producer of olive oil in all kinds
- **CHRISOPIGI:** Producer of high quality E.V. olive oil
- **CRETAN NECTAR:** Produces Balsamic Vinegars & Creams
- **ETANAP S.A.:** Production of mineral water “SAMARIA”
- **GEA CRETA:** Production of prickly pear and juices –jars etc.
- **LADITSOUDEROS:**Producer of Oliveoil
- **MEDITERRANEAN ESCARGOTS:** Production of Escargots/rare variety & ready meals
- **MEZE MEDITERANEE:**Production of Pastas
- **PETROMILOS:** Production of Pastas in all kinds
- **SITHON:** Cooperative Company of Honey products
- **SUNLAND:** Producer of canned fish & Dry Nuts

Main objectives:

The main objectives of Made in Greece Cluster are:

- 🚦 To inform small and medium- sized enterprises about the **importance of exports**.
- 🚦 To support small and medium-sized enterprises to **expand their works** to international markets, aiming at increasing the competitiveness of their products.
- 🚦 To promote of the **superiority of Greek products** in the international market.
- 🚦 To help Greek SMEs and producers to participate in **international events** and **exhibitions**.

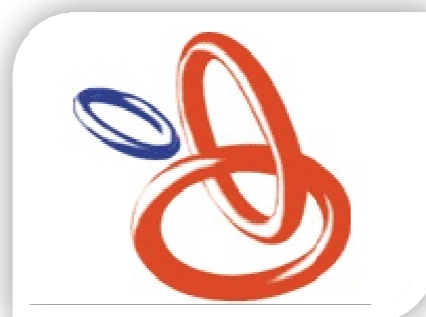
1.1.6 Business Network of Chalkidiki SA⁶

Business Network of Chalkidiki SA was established in June 2004 by 27 companies based on the Prefecture of Chalkidiki, and till then the number of its members is increasing constantly.

It is primarily considered as an Agro-Food Network of companies that operate mainly in Food and Drink Production and Accommodation and Catering the sectors.

Other members of the network are operating in Manufacturing, Construction, Trade and Service Providers, forming a network that represents the most characteristic and dynamic production sectors of the economy of Chalkidiki.

The aim of the network is to support the networking and clustering procedure of the Chalkidiki's companies, that operate in the sector of processing of local food products, with the companies involved in food marketing, as well as the companies that offer hospitality and catering services in Chalkidiki, for the development of an integrated supply chain of local products.



Main objectives:

⁶<http://www.diktiohal.gr/>

The main objectives and the services that Business Network of Chalkidiki SA provides to its members are:

- ✚ Designing and coordinating partnerships to **create horizontal networks** between members and other similar domestic and foreign companies, aiming at improving their **competitiveness**.
- ✚ Planning and coordinating the development of collaborations between members and other domestic and foreign enterprises in a value-added chain to **disseminate information** and **produce innovation**.
- ✚ Establishing **strategic alliances** with universities, research centers, suppliers, customers.
- ✚ Organizing and supporting **systematic** and **integrated programs** for the promotion and of its members' products.
- ✚ Development and management of a showroom - a **sales outlet** for members' products.
- ✚ Provide information and **technical assistance** to its members.
- ✚ Participate in **national** or **community programs** in order to achieve the strategic goals of networking.

1.1.7 Olive Oil Products Network of Crete⁷

Olive Oil Products Network of Crete consists of the "Olive Oil Exclusive Restaurants", which offer all their dishes, prepared exclusively with virgin Cretan olive oil.

This network is developing mainly in the rural area of Western Crete (Prefecture of Chania and West side of Rethymno Prefecture) and includes the following categories of enterprises:

- ➡ Traditional "Olive Oil Exclusive Restaurants" which offer meals prepared exclusively with virgin Cretan olive oil.
- ➡ Sale stores that offer traditional olive oil products including stores with traditional products, based on virgin Cretan olive oil of superior quality, according to the current EU Regulations.
- ➡ Traditional olive oil producers that manufacture or sell traditional Cretan products, of virgin Cretan olive oil.



Main objectives:

The main objectives of Olive Oil Products Network of Crete are:

- ✚ The promotion of **hygienic, tasting, quality** and **cultural** value of Cretan olive oil as a key element of the Cretan diet.
- ✚ The general qualitative **improvement** of the tourism and especially of the agro-touristic product of Crete in terms of quality and healthy diet.
- ✚ The promotion of local traditional products of Crete based on olive oil.

⁷<http://depek.sedik.gr/content/view/489/201/>

Benefits of network members:

The benefits of network members are:

- ✓ Certification by a special guarantee label for the exclusive use of olive oil.
- ✓ Promotion of sales stores and their products.
- ✓ Technical support with instructions and seminars.
- ✓ The possibility of developing collaborations for jointly supplying olive oil at reduced cost.

1.1.8 AmyndeonOenos Network⁸

Amyndeon Oenos Network was established in 2008 as a civil non-profit company, in order to meet the increased needs of the winery companies of the prefecture of Florina, and especially of Amyntaio.



Members of Amynteon Wine Network are mainly agricultural cooperatives and wineries. The main objective of the network is to undertake actions and initiatives that will contribute to the study, identification, preservation, promotion of the varieties of vines that are cultivated in the prefecture of Florina and in particular of the “xinomavro” wine variety, that is cultivated in Amyntaio.

Primary strategic goals

The primary strategic goals of AmyndeonOenos Network are:

- ✚ **Scientific analysis and study** of the identification of “xinomavro” wine variety and the promotion of the **cultural heritage** of Amyndeio region.
- ✚ **Collaboration with universities** for the study of “xinomavro” wine variety.
- ✚ **Collaboration with domestic and foreign** wine-producing institutions.
- ✚ **Submit proposals and transferring know-how** to the State.
- ✚ Supporting the **sustainable development** of the Amyndeio region.
- ✚ Participation in programs related to the **promotion of its objectives**, funded by the Greek State, the European Union, as well as the management and implementation of such programs.
- ✚ **Organization of conferences and information campaigns.**
- ✚ Organization of events for informing about issues related to the **culture and special characteristics of “xinomavro”** wine variety
- ✚ The **publication** of books, magazines,

1.1.9 Furniture Centers

At the beginning of the 1980s, the furniture industry demonstrated a significant innovation,

⁸http://www.amyndeonoenos.gr/index.php?option=com_k2&view=item&layout=item&id=41&Itemid=117&lang=el

regarding the establishment and operation of the “Furniture Centers”, which aimed at strengthening the domestic furniture production. These were secondary associations of factories – crafts, which primary objective was to optimize and promote their products in a more competitive way. The first association was the “Furniture Center 40” and the following five Furniture Centers are currently operating in Attica:

- ☑ 120 United Factories
- ☑ Epielokini
- ☑ FurnitureCenter of Attica
- ☑ Ena&Ena
- ☑ Furniture Center 45

The necessity of the establishment the afore mentioned Furniture Centers derived mainly from the need to enhance the competitive advantage of the domestic furniture manufactures.

The “120 United Factory Furniture Center” was the 2nd Furniture Center that was established in Greece (1984) and has managed to maintain a very competitive position in the market. It operates as a Limited Liability Cooperative, whose members are manufacturing companies in the furniture industry.

Main objectives:

The main objectives and the services that Furniture Centers provide to its members are:

- 🚧 **Marketing and promotion** of members' products.
- 🚧 **Organization of sales reports** for members' products.
- 🚧 **Equal cooperation and mutual assistance** of partners.
- 🚧 **Promotion of exports.**
- 🚧 Technical and organizational **assistance.**
- 🚧 Provision of **guarantees** or other **financial facilities.**
- 🚧 **Accounting** services.
- 🚧 **Joint advertising** of members.
- 🚧 **Staff training.**
- 🚧 **Warehouses** sharing.
- 🚧 **Joint procurement** of raw materials.

1.1.10 The Greek Maritime Cluster ⁹

The Greek MaritimeCluster consists of owners and entrepreneurs who are mainly engaged in the dry cargo and the oil tanker markets. Most of the fleet operates in the greater Piraeus area, the largest port in Greece. The key factors contributing to the competitiveness of the Greek maritime cluster are the high degree of

⁹<http://www.maritimehellas.org/el/>



competition, supported by the large number of small businesses, from the favorable tax regime, strong institutions for cooperation, and the presence of specialist maritime education institutions. Greater weaknesses of the Greek maritime cluster are the absence of local demand for its services, unlike its competitors (China and Japan), as well as the weak links with the relevant industries to support it.













The cluster boosts entrepreneurship and unifies sectoral and branch forces, which today - almost - uncoordinated are usually observers of developments. An extroversion step with an organized structure, vision and strategy, covering gaps and incomplete practices of the past.

It consists of seven main categories and more than 100 subcategories:

- Ship management and chartering companies.
- Maritime technology, research and education.
- Constructions, repairs and equipment of ships.
- Sea tourism.
- Marine tradition and water sports.
- Administrative services and services to shipping.
- Supplychain.

Primary strategic goals:

The **strategic goals** of the Greek Maritime Cluster, as well as services that provides to its members are:

-  To promote entrepreneurship in Greek shipping.
-  To bring together the members of the wider maritime community.
-  To transfer know-how.
-  To establish cooperation networks within and outside Greece.
-  To provide instant and valid information.
-  To facilitate access to new technologies.
-  To create access to specialized products or services.
-  To encourage the development of innovation and extroversion.
-  To copyright the logo of the cluster worldwide.
-  To increase readability and improve corporate profile.
-  To provide communication with shipping companies.
-  To direct the members' advertising through the central campaign and the continuous promotion of its online platform (www.maritimehellas.org) in global shipping.

1.1.11 InnovationGreece¹⁰



The Innovation Greece Cluster is an association of innovative companies with the common goal of integrating innovation into everyday practices, new products and services. Its goal is not only to promote positions to state bodies, but mainly call out to companies and financial entities, flexible and eager to adopt the same vision. To be extrovert in all areas, both thematic

and geographic, to build mutually beneficial business partnerships, to facilitate the exchange of experience and knowledge in new fields and to encourage the participation of funding bodies both in Greece and abroad to examine and fund new innovative services and products.

Primary strategic goals:

The main **strategic goals** of Innovation Greece Cluster are:

- ✚ To transform Greece into a country of technological development, products and services of high added value at European and global level.
- ✚ To contribute to sustainability and social development through healthy entrepreneurship based on innovation.
- ✚ To raise awareness in society on innovation and extrovert entrepreneurship.
- ✚ To showcasing of business and technological excellence of Greek enterprises through the promotion of good business practices and models towards social equality, sustainability and welfare.

Members of Innovation Greece Cluster are:

- ➔ [Brite](#)
- ➔ [Draxis](#)
- ➔ [Helbio](#)
- ➔ [ETME](#)
- ➔ [Praxi Network](#)
- ➔ [Monolithos](#)
- ➔ [ProACTINA](#)
- ➔ [Streamlined](#)
- ➔ [Terracom](#)
- ➔ [Think Silicon](#)

¹⁰<https://innovationgreece.com/>

1.1.12 PRAXI Network¹¹

PRAXI Network is an organization providing technology transfer services to SMEs and research organisations throughout the country.



Primary strategic goals:

Its mission is to enhance the competitiveness of Greek enterprises and research laboratories by linking research to production, promoting innovation, supporting entrepreneurship and transnational cooperation.

It started out in 1991 through the initiative of the Foundation for Research and Technology (FORTH) and SEV Hellenic Federation of Enterprises, and later the Federation of Industries of Northern Greece (FING). Since then it has been undertaking significant initiatives leading to the development of technology partnerships between Greek and foreign companies and organizations, initially operating as one of the European Commission's "Innovation Relay Centers" and then as a member of the European Business Support Network [Enterprise Europe Network](#) and Coordinator of the Greek Network. In parallel and since 1999, PRAXI Network is an official information and advisory body for the Framework Programmes for "Research and Technological Development" and "Horizon 2020" taking on the role of the National Contact Point (NCP).

1.1.13 HellenicBioCluster¹²

To "Hellenic Bio Cluster" (HBio) is the first biosciences cluster in Greece bringing together the innovation leaders of Greece in the sectors of Pharmaceuticals, Biotechnology, Diagnostics, Medical Devices and Specialist Services.



Founded in 2006 by a group of 8 companies and the PRAXI Network, the technology transfer arm of the Foundation of Research & Technology Hellas (FORTH), and since then "Hellenic Bio Cluster" has grown to over 30 companies with intense innovation and international perspective.

HBio aims to boost the development of the Life Sciences industry in Greece, to promote the Greek Life Sciences sector in the international scene and to facilitate business and research collaborations between local and international companies and research groups.

HBio is often an interlocutor of the Hellenic government on matters of policy design in the areas of innovation support and life sciences strategy. HBio's mission is "good health", which is at the center of a happy, productive life. Proper use of science and collaboration are critical to advancing technology and providing better health for all.

¹¹<http://praxinetwork.gr/el/>

¹²<http://hbio.gr/>

Primary strategic goals:

The main strategic goals of “Hellenic Bio Cluster” are:

- ✚ To promote the contribution of the Greek Healthcare industry on the global scene.
- ✚ To foster collaborations between HBio members and international enterprises and organizations.
- ✚ To support the export orientation of its members.
- ✚ To foster the exchange of knowledge between HBio members and the international healthcare community.
- ✚ To encourage and support entrepreneurship and innovation in the healthcare space.
- ✚ To organize meetings / workshops / info-days, aiming at the promotion of networking among the key players in the field of Life Sciences in Greece (companies, universities and research centers, hospitals and clinical laboratories, investors, national authorities and organizations).
- ✚ To foster the networking of its members with Greek and international research institutes.
- ✚ To support networking activities for its members, with basic biotechnology players in Greece and Europe.

1.1.14 Technopolis Thessaloniki ICT¹³



Technopolis Thessaloniki ICT Business Park is an initiative of the Association of Information Technology Companies of Northern Greece (SEPVE) and was founded in 2001 with the participation of Information and High Technology companies from all over Greece, as well as

public bodies.

The company's aim was the establishment of the first high technology Business Park in Greece not only for the solution of some of the problems of the companies in the sector, such as housing needs, but also for the creation of a grid for the existing investment opportunities, which will be a development opportunity both for Thessaloniki and Northern Greece, and the country in general.

Technology parks provide state of the art telecommunication infrastructure, but also a full range of additional services such as conventions centers, sports facilities, restaurants, hotels. They are active in the creation of pilot projects for new technologies, demonstration projects, training management and diffusion of new technologies.

They are ideal spaces for attracting local and foreign investment and are actively pursuing public and international visibility through organized promotional activities.

¹³ <https://www.technopolis.gr/mainpage>

Primary strategic goals:

The company's goal apart from the official launch of Technopolis Thessaloniki, the first High Technology Business Park in Greece, is the utilization of the accumulated experience to create a network of Technopolis – Incubators in other regions of the country.

1.1.15 Cluster of Bioenergy and Environment of Western Macedonia (CLUBE)¹⁴

The Cluster of Bioenergy and Environment of Western Macedonia (CluBE) is a non-profit legal entity which was established in 2014 and was composed of members among local actors and businesses of the Region of Western Macedonia. It is the result of the collaboration of local actors under European and national projects in the fields of bioenergy, biomass and the environment. Analyses of the biomass potential in the Region, the basic structures of the Clusters and the Regional Innovation Systems in the energy sector, etc., were held, among others, during these projects.

**Primary strategic goals:**

CluBE aims to develop business activities and Research & Development in the fields of bioenergy and environment, in order to reinforce green and circular economy in the region and the neighboring area.

The **strategic goals** of the Cluster include:

- ✚ Energetic exploitation of biomass for household and industrial use.
- ✚ Energetic exploitation of biomass for district heating systems.
- ✚ Mixed lignite combustion in existing PPC's Steam Power Stations or in future plants for the production of heat and / or electricity.
- ✚ Optimization of heating systems performance.
- ✚ Saving energy in the household sector.
- ✚ Energy saving in the business and service sectors.
- ✚ Utilization of waste (forestry, agricultural, urban and food industry waste) to produce clean energy.

1.1.16 Pharmacist's Supplying Cooperative of Attica (PRO.SY.F.A.P.E.)¹⁵

Today, Pharmacist's Supplying Cooperative of Attica (PRO.SY.F.A.P.E.) is the biggest and the most contemporary, dynamically developing, Group of companies that operates in the sale and distribution of

¹⁴<https://clube.gr/>

¹⁵<https://www.prosyfape.gr/profile>



pharmaceutical and parapharmaceutical products and services, focusing on the future needs of the specific sector activities.

The inspired entrepreneurial initiative of a small group of visionary pharmacists was the driving force to establish a steady success story, to which many more pharmacists added their strengths.

Primary strategic goals:

PRO.SY.F.A.P.E. group of companies aims at examining opportunities and taking initiatives to continue investing, in order to remain the sole partner of the pharmacists– shareholders and to guarantee the development of the group's activities and to ensure its leading position in the market.

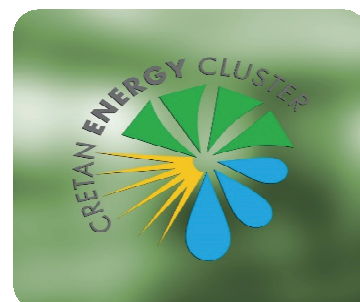
PRO.SY.F.A.P.E. is currently comprised of the Pharmacist's Supplying Cooperative of Attica, Peristeri and its four subsidiary companies in Alimos, Corfu, Lamia and Ioannina.

The services provided by the group to pharmacist members include:

- ✚ Sorting of products (medicines and parapharmaceuticals), by using high-end automatic systems.
- ✚ Product distribution in pharmacies - members.
- ✚ Management of overdue items under pharmaceutical legislation.
- ✚ Negotiations with pharmaceutical and parapharmaceutical companies in order to provide offerings that enhance the competitiveness of its members.
- ✚ Developing marketing infrastructures by supplying pharmacies - members with a wide range of promotional materials.
- ✚ Development of a single identity and "Green Pharmacy" brand (400 members), aiming at enhancing the bargaining power of pharmacists.
- ✚ Provision of merchandising services (product placement on shelves and associated labeling) for refurbishing and upgrading the pharmacy by optimizing the existing spaces per company and product category.
- ✚ Category Reporting Service, so as to provide statistical data based on the product classification applied by the commercial department, in order to better assess the performance of each product category as the pharmacist is able to know the categories of products with a high market share, resulting in targeted sales growth.
- ✚ Computer-aided pharmacy management.
- ✚ Organization of educational and informative seminars and workshops.

1.1.17 Cretan Energy Cluster (Ecosolutions)¹⁶

"CretanEnergy" Cluster is a cluster of companies engaged in the construction of **energy production** and **energysaving** projects. CLUSTER was created at the initiative of the Chamber of Heraklion in April 2011 with the participation of 10 members.









¹⁶<https://ecosolutions.gr/sxetika-me-mas/>

Primary strategic goals:

The services offered by this Cluster include detailed design and high-quality applications with the ultimate goal of maximizing the energy efficiency of each interested enterprise or private individual.

The choice of technologies and the professional consistency that distinguishes it, aims to improve the quality of life through the familiarization and application of modern systems and activities in the field of renewable energy.

The strategic objectives of the "Cretan Energy Cluster" include:

-  Organized promotion of renewable and energy saving systems.
-  Promotion of natural energy resources.
-  Providing information to government authorities and educating members on new markets.
-  Establishment of communication with local educational institutions and public bodies.
-  Organized contact with suppliers.
-  Consumer information.

CHAPTER 2. Benefits enjoyed by members of business clusters

Business clusters in Greece are fairly limited, but they cover a wide range of areas of activity. The main advantages of networking business in groups are as follows (Caniels&Romijn, 2005; General Secretariat of industry, 2003; Eommex, 2009):

- ↳ **Innovation**
- ↳ **Complementarity and interdependence**
- ↳ **Expertise and continuous education**
- ↳ **Reputation**

2.1 Innovation

In a network of cooperating companies, are given plenty of stimuli for innovation. Repeated collaboration among businesses favors innovation and helps the business through repetition to better learn its role within the cluster and to be improved. This creates fertile ground for innovation, resulting in better collaboration and resource savings in the production process. Then, the university institutions and research centers that are part of a cluster are working towards the creation of new technological knowledge, which are then made available to businesses.

Also, direct business access to productive actors within the cluster facilitates and accelerates the application of these knowledge. In addition, the fact that companies are geographically close is helping to implement and spread innovations, since it is easy for an enterprise to "observe" the other cluster firms (direct observation) and apply some innovation.

Another reason why there is a strong tendency for innovation in a cluster is healthy competition and "noble rivalry" that develops between businesses. Within the cluster companies compete on equal terms at the production, purchase, distribution, etc. Every business compares herself with others and gets easier in the process of making efforts to improve its performance. This positive "pressure" between businesses offers a strong incentive to continuously improve their productivity and therefore creates the right conditions for innovation.

The proper functioning and development of a cluster is directly dependent on innovation, so that the pace of innovation creation and implementation is considered to be a cluster health indicator. Therefore, the creation and application of innovations is a crucial factor for cluster's companies to achieve a competitive advantage and to overtake their competitors.

2.2 Complementarity and interdependence

Another feature of the cluster, as important as the previous one, is the great degree of complementarity and interdependence that exists between the collaborating businesses. Strong interdependence is a natural consequence of the geographical proximity and frequent collaboration of cluster's businesses. Businesses have similar characteristics, coexist in the same space and face similar needs for human capital, technology, infrastructure, distribution and information. All these common needs, in order to deal better with them, often lead businesses in partnership, which over

time approaches the limits of interdependence. Businesses that manage to work together will be able to optimize the efficiency of the use of infrastructure or resource-producing resources from which they derive raw materials. Relationships developed within the cluster are often ex-ante relationships of interdependence, such as the relationship that a business maintains with its suppliers, since in order to produce it is necessary to feed itself in time with the necessary inputs. Complementarity has as its main consequence that businesses often end up interdependent to the extent that each performance is highly dependent on the performance of others. It is possible that a negative performance of a business might entrain other businesses and create a bad picture or degrade the quality of the product or service produced. A typical example of such phenomena is the tourist cluster, where the nature of the product offered is such that low-level service provision, e.g. at the transport level is likely to generate negative impressions on visitors for the entire tourist product, even if the rest of the companies offer high-quality services.

2.3 Expertise and continuous education

Business clusters are characterized by external economies. More specifically, a kind of external economy is the creation and diffusion of technological knowledge from universities, research institutes or R& D departments of enterprises. This knowledge is made available to any interested person or disseminated to the community in the form of innovations. More generally, access to information on a variety of issues within the cluster (e.g. technical issues, market trends, etc.) is easy and at a small cost, as it also avoids the cost of searching for business information, thus recommending a (semi) public good. In addition, the education and training of the workforce involved in a cluster of enterprises is the external economy. This is primarily a medium or a lower labor force with limited mobility, which is trained and specialized through work within cluster. This results in a "pool" of skilled labor at a local level, where companies are able to "get" skilled workers now to meet their higher-level staffing needs by eliminating the cost of searching and training them within the company. Often, the maintenance, improvement and construction of the necessary cluster infrastructure is at the expense of its businesses because they have a direct interest in using them. However, these infrastructures are used by the whole community, they are a purely public good, so their maintenance by the cluster enterprises is a positive external impact. The fact that a cluster is present at a location, thus attracting general investments (public or private), with multiplier effects on income of residents of the wider region, is also an external economic effect.

2.4 Reputation

A strong, growing cluster leads to a good reputation for the region, and as a result even more investment can be attracted. Also, a growing cluster could become an indirect way of advertising, attract potential customers, and contribute to further rising standards of living.

In addition to the positive externalities, some negative externalities may arise as a result of the cluster's operation. The main ones are environmental pollution, the bottlenecks of the cluster due to its size, information imperfections, high pricing, loss of resources efficiency due to potential monopolistic or oligopolistic situations, etc.

In summary, the main advantages of business clusters are:

- ✓ Increased **business productivity** due to innovation.
- ✓ **Proper addressing of common needs** through business cooperation, resulting in an effective use of productive resources.
- ✓ **Positive external economies.** Creating and disseminating knowledge to the community, upgrading the region thanks to the presence of the cluster, creating human capital, etc.
- ✓ **Economies of synergy.** The production of cluster enterprises is greater than the sum of each separate production of the enterprises if they did not cooperate. Therefore, additional income and added value are generated in GDP, as a result of business cooperation. Economies of synergy are the most important asset of building clusters.

CHAPTER 3. Transfer of technology / know-how

The transfer of technology and know-how creates and develops new economic activities both on local and international markets and strengthens transnational relations, trade, transport and communications. As a result, transfer of technology / know-how not only contributes to the progress and development of a country, but also bridges the economic gap between developed and developing countries.

Technology transfer is an issue of increasing international interest and has been recognized as a key factor for industrialization and growth of economies. Its important role was highlighted very early, and thus it was the subject of theoretical and empirical study after the World War II and especially during the last decades.

The understanding of technology / know-how transfer mechanisms is a prerequisite for its successful outcome. Any transfer between units (individuals, enterprises or countries) requires the timely selection of technology / know-how transfer mechanisms or a combination of those that will be used.

Technological agreements or licensing agreements are probably the main technology and innovation transfer mechanism between enterprises. These agreements grant the licensee with the exploitation of the transferor's know-how on various topics such as technology, quality, organization and education and / or receive specific services from him / her.

The sender / supplier / vendor and the recipient / buyer of the transferred technology seek to successfully transfer it, but for different reasons both of them. The process of transferring technology and innovation requires effective cooperation between both sides.

Autio and Laamanen (1995) define as a technology transfer channel the connection between two or more entities (countries, enterprises, individuals) through which, different transport mechanisms can be activated. According to the above, there are five basic technology / know-how transfer channels:

- ☑ Cooperation **among people**.
- ☑ Cooperation **among enterprises**.
- ☑ Cooperation of enterprises with **educational or research institutions**.
- ☑ Cooperation among **educational or research institutions**.
- ☑ Cooperation between countries (transnational partnerships). **Transnational partnerships** to transfer technology / know-how and innovation are carried out with the cooperation of all countries' units (individuals, enterprises, institutions) through the four first channels mentioned above.

3.1 Technology / know-how transfer mechanisms

A technology transfer mechanism is defined as any interaction between two or more entities (countries, enterprises, individuals), through which, the technology / know how is being transferred.

Concerning the cooperation among enterprises, active in the same or similar sector, they can cooperate locally or internationally using the following technology / know-how and innovation mechanisms (Doinakis, 2007):

- ✓ Exchange of views, experiences and information between executives (researchers, engineers, directors) of enterprises.
- ✓ Visits of an enterprise's specialist executives to other enterprises.
- ✓ Provision of technical support and consultancy to solve any problems such as maintenance and repair of equipment, quality control, organization / management issues, employee education / training, etc.
- ✓ Use of technical methods such as patents, production "secrets", machine designs, special technical applications, product designs and specifications, production know-how, management, marketing, financial, etc.
- ✓ Exports.
- ✓ Purchase or leasing of capital goods / mechanical equipment such as instruments, tools, appliances, machinery, etc.
- ✓ Franchising.
- ✓ Use of commercial or industrial labels.
- ✓ Technology agreements / licensing agreements.
- ✓ Marketing contracts.
- ✓ Management contracts.
- ✓ Turnkey contracts.
- ✓ Subcontracting.
- ✓ Co-production of products, such as: design of new products, production, etc.
- ✓ Development and support of joint R & D activities.
- ✓ Joint use of laboratory and mechanical equipment.
- ✓ Exchange of researchers or engineers for a fixed period of time.
- ✓ Joint ventures.
- ✓ Creation of strategic partnerships.
- ✓ Exchange of licenses (cross-licensing / reciprocal-licensing).
- ✓ Merging / acquisition of a foreign enterprise operating on the same sector.
- ✓ Foreign Direct Investment.

Technology agreements or licensing agreements are probably the main technology and innovation transfer mechanism between enterprises.

The enterprise's objective that receives technology through technology agreements is (Doinakis, 2007):

- ↳ **Effectiveness** improvement.
- ↳ Maintenance or improvement of its **market position**.
- ↳ Promotion of new products on the market or use of more **efficient** production procedures.
- ↳ The **diversification** of its production when it is established that the product is losing ground on the market.
- ↳ To obtain a **distinct advantage** over its local or foreign competitors.

While the supplying enterprise of technology agreements aims to (Doinakis, 2007):

- ✚ **Secure monopoly profits** due to its technological avant-garde.
- ✚ **Transfer** more of its profits abroad and **return** them in the form of **royalties** (income from royalties' payments are usually more favorably taxed than profits).

There are cases where enterprises are discouraged from entering into technology agreements when (Doinakis, 2007):

- ✚ The total cost of granting technology to a foreign enterprise is large due to the complexity of the required constraints and the checks to prevent leakage.
- ✚ The "opportunity cost" of capital in the host country is greater, having as a result the recipient enterprise not to achieve the expected benefits.
- ✚ The cost of transferring technology to a subsidiary is less than that of a foreign / independent enterprise.

The supplying enterprise of technology imposes its own terms on technology agreements it concludes. These terms are limitations for the receiving enterprise which should give them special attention.

Restrictions on technology agreements concern issues such as (Doinakis, 2007):

- **Exports** (partial or total restriction on export activities).
- **Supply of raw materials and mechanical equipment** (partial or total obligation to purchase the above from the supplying enterprise or from another specific supplier).
- **Production and distribution** of products.
- **Pricing Policy.**
- **Technology and Intellectual Property.**
- **Legal issues.**

In cases where the receiving enterprise is controlled by the supplying enterprise (subsidiary or majority share), the restrictions included in the technology agreements are relatively fewer and different from those in agreements with other enterprises (zero or minority share). These limitations, however, reduce the efficiency of the transferred technology. From the above it is clear that the supplying enterprise presents a strong dominance when the technology is transferred with technological agreements. The recipient enterprise is at risk due to the restrictions imposed to (Doinakis, 2007):

- Restrict its bargaining power against to the supplying enterprise.
- Depends heavily on the supplying enterprise.
- Purchase the largest volume of raw materials from abroad.
- Limit its production to fewer products or limit it to assembling products only.

3.2 Difficulties faced by enterprises during the transfer and implementation of technology / know-how

The legislative environment of a country is perhaps one of the most important factors affecting the transferred technology degree of success. The degree of success of the transferred technology depends on the fact that a non-robust legal framework leaves much room for foreign technology owners to exploit local industries. This exploitation can take many forms, from over / under-costing of imports and exports respectively, to very restrictive terms in licensing agreements. If a country's legal framework does not provide the required protection to domestic industry, the latter becomes vulnerable to the foreign technology owners wishes.

Government policy connected with a proper legal framework, are the basis for an effective management, at least at the beginning of the imported technology. Further technology management is left to enterprises, but now they have the support of a legal framework.

In addition to the legislative environment, there are also legal constraints in technology transfer contracts by technology suppliers (Akhavan, 1995). These clauses hinder the unrestricted use of the purchased technology by the recipient, while being the main reason for introducing national legislation that limits technology funds and use of restrictive terms in contracts.

Driscoll and Wallender (1974) have indicated that most suppliers believe that these restrictive terms are important factors that protect the valuable technology assets and maintain the global prestige of the enterprise's marketing strategy. As a result, technology suppliers are discouraged by the transfer of their technology to those countries that have any kind of restrictive terms.

Other restrictions related to transfer of technology / know-how are the socio-technological restrictions. Peters (1975) formed a list of these barriers under the title "Our unique characteristics, our experience, the language we speak, our nationality, our behavior". He also commented that with this number of potential barriers, it is a mystery how any information can be effectively transferred. In general, these barriers can be placed in different categories such as infrastructure barriers, cultural barriers, communication barriers and language barriers.

The most basic barrier to technology transfer is the infrastructure barrier and its existence could cause the launch of any other barrier. A large number of researchers argued that the technological infrastructure (sometimes defined as a scientific and technological basis) would be a serious barrier to technology transfer. The technological infrastructure concerns the enterprise's policy and recipient country, for the absorption and utilization of the transferred technology.

Indicatively, according to Kodama (1981), the factors that contribute to the creation of the infrastructure and facilitated the rapid expansion of imported technology in Japan are:

- ☑ A high level of workforce training.
- ☑ A permanent work system.
- ☑ A relatively large number of engineers compared to scientists.
- ☑ A system for assessing research.
- ☑ Funding for research.

In a study evaluating the possibilities for technical cooperation among developing countries, Sharif and Haq (1981) have identified the following factors that reflect the technological infrastructure of a country:

- ✓ The level of expenditure on Research and Technology as a percentage of GDP.
- ✓ The number of scientists and technological potential per 10,000 population.
- ✓ The number of scientists and engineers involved in Research and Technology per 10,000 population.
- ✓ Integration of higher education into scientific and mechanical education as a percentage of the total population.

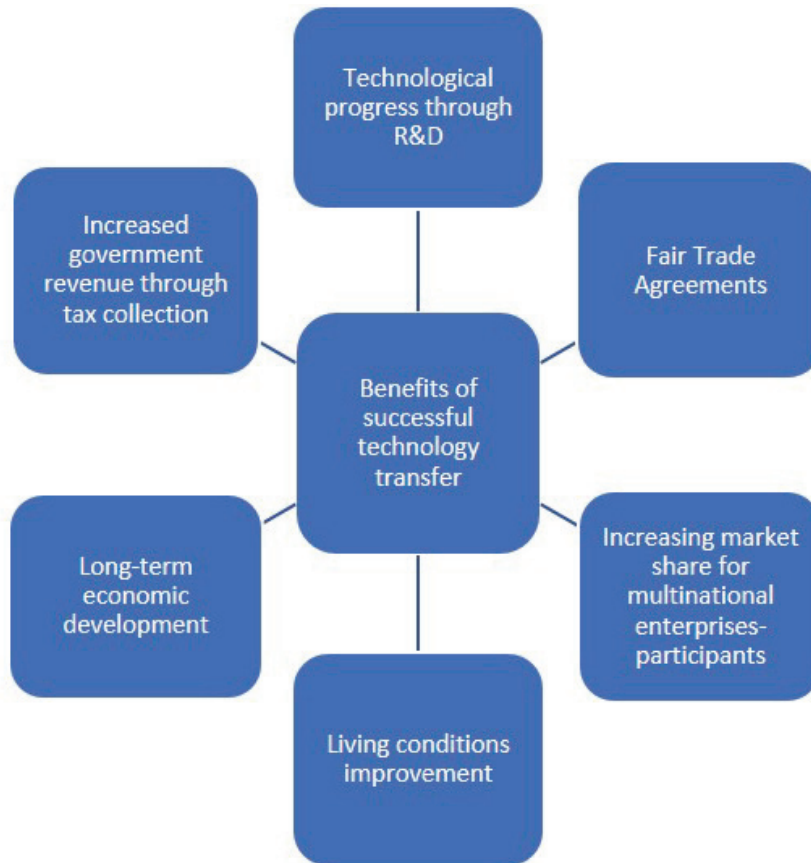
According to Martino (1982) there are three indications for assessing the level of technology, i.e. the nature of the patent, the technical documents and the amount spent on Research and Technology each year. All of the following factors are called "the core" by Islam and Kaya (1985) and reflect the technological infrastructure of a country even though they do not cover all the data and are:

- ✓ Scientific and technological potential.
- ✓ Research and Technology activity.
- ✓ Integration of science and engineering into higher education.
- ✓ The level of public education.

3.3 Advantages of technology / know-how transfer

In the international literature, the benefits of technology / know-how transfer are summarized mainly at country level. Benefits, such as long-term economic growth as a result of technological progress and growth in foreign direct investment (Marton, 1986). The above can be achieved if economic and political structure become more stable and also, if there is innovation, research and development.

Madeuf (1983) presented economic models to measure the efficiency of technology / know-how transfer. Such models, incorrectly, do not take into account of unpredictable factors in technology transfer. Technology transfer must therefore be studied at a fundamental level. Each model of measurement mechanism should be able to study the quantitative and qualitative factors that affect the transfer of technology / know-how, such as social inequality, social backwardness, economic stagnation and environmental contamination, frequently referred in the bibliography. Models such as the analytical hierarchy process that can be applied to multi-critical decision theories are of great importance in technology transfer. According to Madu C.N. (1989), the benefits of successful technology transfer refer to technological progress, long-term economic growth, expansion of state wealth, better living conditions for citizens, and so on.



Source: Madu C.N. (1989), «Transferring technology to developing countries-critical factors for success»

Regarding the **benefits of technology / know-how transfer** for enterprises, Dunska A. in his article (2017), refers to the advantages and disadvantages for some types of technology transfer. Indicatively:

➤ **Technology License Agreement**

The advantages of purchasing a license / patent include low costs in comparison with other methods of technology transfer. However, purchasing a license requires sufficient knowledge, experience, specialists and production base for independent implementation of technology.

➤ **Technical support and consultancy by technical consultant to solve any problems**

Attracting a technology developer in a process of transferring ensures closer cooperation between two parties, which promotes the full transfer of knowledge and skills. Thus, the technical support agreement can become a part of the Licensing Agreement, thereby increasing efficiency of a transfer.

➤ **Joint Ventures**

The main advantage of the joint venture includes a long cooperation between parties, motivation of all participants in successful technology implementation and lower expenses compared to if the

enterprises worked separately. On the contrary, it should be noted that each enterprise of the joint venture presents different vision and different purposes of partners and restrictions of independence in management. Besides, the enterprises cannot always objectively determine the value of the contributed capital of each party and, therefore, and further profit distribution.

➤ **Franchising**

The main benefit of franchising is the fact that the enterprise purchases already ready brand. Together with technology, it receives the checked business model, instructions in management and marketing.

Disadvantages include the enterprise's dependence upon the owner of technology. In most cases, the enterprise has to buy raw materials, the equipment and products only from certain suppliers. According to the term of the contract, it is often limited in selling business and in expansion into new markets. The enterprise has to follow the rules and procedures of the enterprise owner. Besides, the deterioration of the business image of the franchise owner may affect enterprises that has purchased this franchise.

➤ **Strategic partnership**

Typically, the joint efforts of partners give better results than independent development of a new direction. During the joint work, each company can get necessary expertise in new areas and forms of governance.

The disadvantages of strategic partnerships include difficulties in management connected with different culture of companies and two teams of managers which have different approaches. The companies may have different goals and strategies of joint technology.

➤ **“Turnkey contracts”**

The company signs the agreement only with one contractor who takes full responsibility for the project execution; project costs are fixed, except force majeure circumstances; the customer obtains a guarantee that the project will be not just executed, but also will work with a certain efficiency.

The disadvantages of this form of international transfer are the following:

The company should know in advance, all the functions and output parameters that should be inherent the technology after its launch. In the case of complex or large-scale technology, it requires deep knowledge in the field where the technology is purchased; the price of «turn-key» transfer is usually much higher than any other method (besides, the more the contractor assumes the risk, the higher the price is); the company has no complete control of the progress and quality of each stage of the transfer; for buyer it is difficult to determine the financial position of the contractor and its ability to self-finance all phases of transfer (financial problems of the contractor can entail the termination of all project).

➤ **Purchase or leasing of capital goods / mechanical equipment**

Purchasing of equipment is simple and one of the most common methods of technology transfer. The main disadvantage of this method is the fact that the company limits itself by technical knowledge embedded in equipment and does not get new competence in management and organization of production. In addition, the equipment available in the market does not give the buyer unique opportunity, as this equipment can be purchased by its competitors.

➤ **Visits of specialized executives of an enterprise to other enterprises**

This method of a transfer is the least expensive, but tends to be effective only for small projects with fairly simple technology. Also, the technology should not be patented.

➤ **Merging / Purchasing of foreign firm of the same sector**

The company can purchase / merge the foreign firm that provides perspective innovative developments. In this case, the company gets not only new technology, but also a team that is able to develop it further and also purchasing of a foreign firm automatically brings the company into new international markets. To the main risks upon purchasing the existing firm we can refer possible departure of key employees after its sale. As a rule, if the technology is successful, the firm owners agree to sell it only at a price which several times exceeds market price that in turn creates big risk of the technology payback.

➤ **Foreign Direct investment**

Attracting foreign direct investment is one of the main methods of technology transfer at the national level. A foreign company often invests in a developing country in order to create a new market, to bypass export barriers and to get an access to a cheap labor.

In this case, the country gets all advantages of the technology transfer, including development of its own research activity. In addition, this is a way of creating new workplaces, getting taxes and other dividends which aren't connected directly with the technology. However, in most cases, to attract large investors, the government has to make some concessions in its policy. Practice shows that without providing necessary conditions, large international corporations don't agree to large-scale investments into developing countries.

BIBLIOGRAPHY

Greek

General Secretariat for Industry. (2013). "Clustering – Guide for Promotion Networking of SMEs". Ministry of Development. Athens.

Doinakis, D.M. (2007). "Technology Transfer: An Innovative Process", 4th Student Congress of Administrative Science and Technology (Economic University of Athens). 'Administrative Science, Technology and Corporate Social Responsibility'.17 May. Athena.

National Observatory for Small and Medium Enterprises. EOMMEX. (2009). Manual for Networking and Clustering. Athens.

English

Akhavan, A. N. (1995). «Technology Transfer to Developing Countries: The Iranian Experience». Ph.D. Thesis. University of Bradford.

Autio, E. &Laamanen, T. (1995). Measurement and evaluation of technology transfer: Review of technology transfer mechanisms and indicators. International Journal of Technology Management. Vol. 10 (7/8).pp. 643-664.

Caniëls, M. &Romijn, H. (2005). What drives innovativeness in industrial clusters? Transcending the debate. Cambridge Journal of Economics. 29. 497-515.

Dricoll, R. E. &Wallender, H. W. (1974). «Technology transfer and development: A historical and geographical perspective». New York: Fund for Multinational Management Education. p.3.

Dunska, A. (2017). International Technology Transfer as a Form of Innovative Development of Enterprise. International Marketing and Management of Innovations international scientific e-journal (ISSN2451-1668) №2 – 2017

Islam, N. and Kaya, Y. (1985). «Technology assimilation in the less developed countries of Asia: Lessons from Japan». International Journal for Development Technology. pp 261-278.

Kodama, F. (1981). «Science and technology policy outlook: main trends and issues Japanese case study in the inter-disciplinary and international approach to science and technology policy». A project report of the university of Tokyo. pp 22-23.

Madeuf, B. (1983). «International technology transfers and international technology payments: Definitions, measurement and firms' behavior». CEREM, University of Paris X. Nanterre. France.

Madu, C.N. (1989). «Transferring technology to developing countries-critical factors for success». Long Range Planning 22(4). pp 115-124.

Martino, J.P. (1982). «Technological indicators of market shift». Technological Forecasting and Social Change. pp 77-83.

Marton, K. (1986). «Technology Transfer to Developing Countries via Multinationals». The World Economy. v.9, no4, pp 409-426.

Peters, E.B. (1975). «Cultural and language obstacles to information transfer in the scientific and technical field». Management International Review. 15(1), pp 83-85.

Sharif, M.N. & Haq, A.K.M. (1981). «Evaluating potentials of technical cooperation among Developing countries», Technological Forecasting and Social Change, 16, pp 3-31.

ElectronicSources

Corallia. 2019. Coralliaspiring Innovation driving excellence. [ONLINE] Available at: <http://www.corallia.org/el/>. [Accessed 6March 2019].

Si-Cluster. 2019. Si-cluster, a Corallia initiative. [ONLINE] Available at: <http://www.si-cluster.gr/>. [Accessed 6March 2019].

Mi-Cluster. 2019. Mi-cluster, a Corallia initiative. [ONLINE] Available at: <http://www.mi-cluster.gr/>. [Accessed 6March 2019].

Gi-Cluster. 2019. Gi-cluster, a Corallia initiative. [ONLINE] Available at: <http://www.gi-cluster.gr/el/about-gi-cluster.html>. [Accessed 6March 2019].

Made in Greece Cluster. 2019. Made in Greece. [ONLINE] Available at: <http://www.expertexperts.gr/index.php/gr/made-in-greece-cluster>. [Accessed 7March 2019].

Anetxa. 2019. ΔίκτυοΕπιχειρήσεωνΧαλκιδικήςΑ.Ε. [ONLINE] Availableat: <http://www.diktiohal.gr/>. [Accessed 12March 2019].

Olive Oil Products Network of Crete. 2019. [ONLINE] Availableat: <http://depek.sedik.gr/index.php>. [Accessed 12March 2019].

AmyndeonOenos. 2019. AmyndeonOenos. [ONLINE] Availableat: http://www.amyndeonoenos.gr/index.php?option=com_content&view=featured&Itemid=103&lang=el. [Accessed 12March 2019].

Maritime Hellas – Navigate the Greek Cluster. 2019. Maritimehellas. [ONLINE] Availableat: <http://www.maritimehellas.org/el/>. [Accessed 12March 2019].

Innovation Greece. 2019. Innovation Greece. [ONLINE] Availableat: <https://innovationgreece.com/>. [Accessed 12 March 2019].

PRAXI Network. 2019. Praxi - Technology Transfer & Innovation Support in Action. [ONLINE] Availableat: <http://praxinetwork.gr/en/>. [Accessed 12 March 2019].

Hbio. 2019. Hbio Hellenic Bio Cluster. [ONLINE] Availableat: <http://hbio.gr/>. [Accessed 12 March 2019].

Technopolis. 2019. Technopolis - Thessaloniki ICT Business Park. [ONLINE] Availableat: <https://www.technopolis.gr/mainpage>. [Accessed 12 March 2019].

Clube. 2019. Clube – Bioenergy and Environment Cluster. [ONLINE] Availableat: <https://clube.gr/>. [Accessed 12 March 2019].

Prosyfape Group. 2019. PROSYFAPE. [ONLINE] Availableat: https://www.prosyfape.gr/en_US/profile. [Accessed 12 March 2019].

Ecosolutions. 2019. Ecosolutions – Led lighting and lighting systems. ONLINE] Availableat: <https://ecosolutions.gr/sxetika-me-mas/>. [Accessed 12 March 2019].