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# **Eco-Industrial Parks**

**A Green and Place Marketing Approach**

LUISS ACADEMY

# Eco-Industrial Parks: A Green and Place Marketing Approach

*Edited by Matteo Caroli, Marino Cavallo and Alfredo Valentino*



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# Marketing method for place management

*Matteo Caroli*

## THE MAIN REASONS OF PLACE MARKETING

A place grows successfully if it is able to create, attract, and retain the main factors for its sustainable development, i.e. productive activities, knowledge, competences, financial resources, flagship projects, the demand for products and services generated within it<sup>1</sup> (Landry, 2008). Thus, a place has to attract many different kinds of demand targets, i.e. enterprises, investors, people, and stakeholders. To this end, it should have a large amount of material and immaterial resources that represent the optimal “context conditions” to achieve the main aims of its demand targets.

However, a place can reach sustainable development not only by attracting these targets, but also if it is able to foster their settlement and their ability to create value for itself. The attraction capacity of a place has to “hold out” in the long run. Moreover, a place does not get immediate benefits from the attraction and the internal presence of its demand targets. In most cases, a place is able to “capture” the potential value created by these targets to its Community.

Place marketing guides the management of a place on how to create an offer system that is able to satisfy the needs of the demand targets, or rather the needs of the actors a place wants to attract and retain. Place marketing can be defined as a method to elaborate and implement policies aimed at improving the development of a demand-driven offer system. It guides the behaviour of each actor that has a direct responsibility on the place attractiveness (Neill, 2001). It is a common language and the essential “cultural glue” that gives cohesion to different actions, often implemented by independent and heterogeneous actors, and fosters their collaboration to strengthen the offer of a place<sup>2</sup>.

The relevance of place marketing comes from the fact that productive investments, big projects, competences, and people are characterized by higher mobility than in the past. As a consequence, they are interested in growing location-related opportunities in places more and more different from their place of origin. Looking at firms, the globalization of production has extremely reduced the relation between a firm and its country of origin. Firms can benefit from spreading their units throughout different locations where they can implement their competitive strategy, optimize their productive organi-

1. I am considering actors that manage and control the main attributes of the offer of a place.
2. See: Kotler and Levy, 1969; Ashworth and Voogd, 1990; Kearns and Philo, 1993.

zation and reach their market aims. In this picture, the country of origin is just one of these multiple locations.

Looking at places, this phenomenon has a conceptual value and also a considerable practical impact: it can attract new productive activities (originally located in other countries), and at the same time it can jeopardize its productive activities (originally located inside). So, now a place has to face a more variable and variegated location demand from firms and people than in the past.

Geographical areas have to compete with each other to attract this variegated location demand. Place marketing is an important tool to win this competition by improving the evolution of territorial material and immaterial attributes to attract new demand and retain the key players for the local sustainable development.

1. Broaden the territorial offer to create the maximum value for the demand targets;
2. Create favourable conditions for the “settlement” of the demand targets;
3. Activate proper mechanisms to probe into the factors that improve territorial sustainable development in the eyes of the demand targets.

Place marketing also provides guidance to every stakeholder that can significantly steer the territorial offer towards a demand-driven approach. So, it is neither aimed at selling areas or specific assets of a place, nor to harmonise the external communication about a place. It is a method and a combination of operational tools to manage the attractiveness of the territorial offer. In this perspective, place marketing is an important driver for innovation and cohesion in the geographical area where it is applied.

I speak about innovation because this method identifies an evolutionary path that can enable the territorial offer to meet the needs of the demand target. Place marketing stimulates change in order for a place to better satisfy its users and to foster their participation to the local sustainable development. Place marketing is also cohesion, because it incentivizes the sharing of a competitive strategy and the implementation of coordination mechanisms.

Since “internal” and “external” players characterize the demand, place marketing has to identify appropriate contents for each actor, in order to avoid a situation of moral hazard or opportunism.

Place marketing considers all place attributes as an “offer” to satisfy the identified demand segments that are able to generate a positive net<sup>3</sup> value for the place. In this sense, it is an intelligent tool to integrate and feed the local offer.

As Enzo Rullani observed twenty years ago, place marketing is a “discipline” that provides an analytical perspective, a method, services and tools to optimize the complex processes of material transformation of a geographical area, better connecting them to the needs on the demand side. The implementation of a place marketing programme can potentially strengthen a geographical area. Such a programme coordinates the actions that impact on the attractiveness of a place and improves the synergies among different players and stakeholders.

3. “Net” means that the value created for a specific user should take into account potential positive and negative externalities created for other place users.

The marketing approach supports: a) the understanding of competitive opportunities for the geographic area; b) the creation of an effective strategic approach in response to these opportunities and the aims of the stakeholders. Moreover, it supports the effective implementation of operational actions. These actions are on two different levels: 1. Integration; 2. Fertilization.

Through the first one, place marketing develops an integrated vision of its different elements that are the sources of its attractiveness. It is the driver that breaks down the tangible and intangible attributes of a place into a set of offers that create value for its clients. Marketing also establishes tangible and intangible interdependences among the attributes of a place. This integration also means that marketing promotes the capability of each player to maximize the connections and the synergies among different implemented actions.

Through fertilization, marketing provides the proper tools to make the most of the actions implemented in each area. For example, the re-organization of the artistic heritage in a city can increase the attractiveness of the whole area.

Furthermore, place marketing has a relational nature because it is aimed to strengthen the internal and external relational capital of a place.

The internal relational capital is about the interactions among actors that are part of the place. It improves the cohesion among main actors and the concrete possibility to implement place marketing actions.

The external relational capital has effects on the ability of the actors of a specific geographical area to collaborate with those in other geographical areas, improving the networks of value creation. The more the success of a place is related to the integration of its assets and activities, the higher the relevance of its relational capital.

The quality of the relations with the demand targets is essential to reinforce their settlement in the place, and hence their ability to contribute to the local sustainable development.

#### THE MAIN OBSTACLES IN THE IMPLEMENTATION OF PLACE MARKETING

Marketing is a business function and its implementation in a more complex contest (like a place) can generate practical and conceptual difficulties. So, it is really important to consider carefully these potential obstacles.

The first obstacle is related to the attractiveness of a place, which is the result of a combination of different factors. These factors are both internal and external and they are less, or absolutely not, influenced by marketing actions. Therefore, it is really important to understand in advance and take into account these external factors when formulating place marketing strategies.

The heterogeneity of the demand is the second obstacle to the implementation of the method of place marketing. Even if the different demand targets can be identified in advance, it is really difficult to formulate a place offer that is able to satisfy the needs of each demand target.

The third obstacle is related to the rigidity of the place offer. The basic assumption of marketing, i.e. the centrality of the demand needs, implies that the offer should be

suitable to meet those needs, and should adapt to their changes. Looking at a place, this assumption is undermined by the nature of the offer factors that impede the alignment of the offer contents to the demand needs. As a consequence, only in particular cases the place offer actually adapts to the changes in the demand needs. So, a marketing strategy should be formulated considering the structural conditions of a place, but also focusing on the more malleable offer components.

Because it is rigid by nature, the place offer evolves slowly in the course of time. In this sense, place marketing is a driver for change that supports the dynamism of the place offer. Place marketing encourages place evolution to create the maximum value for its demand (Clifton and Huggins, 2010).

When a place is in a crisis, place marketing plays an innovative role by bringing about structural changes to a place offer. In particular, its function is essential when the place offer does no longer satisfy the demand needs, when a place has to reduce the quality or quantity of its offer or when the demand it attracts is no longer positive for the local sustainable development.

Another limit of place marketing is related to the difficulty of clearly measuring the impact of marketing actions on the attractiveness of a place. It is really difficult to distinguish the specific impact of place marketing on the behaviour of the users of that specific place and isolate it from other forces.

However, the most relevant limit is related to the presence of many different players that implement marketing actions in a specific place. In a firm, marketing actions concern a specific function and the players in charge of their implementation are clearly identified. In the case of a place, everything is different. The players who implement marketing actions are many and they are often not connected to each other. This is due to the fact that different and independent players manage the attributes of the place offer. So, it is really important that these players are coherent and share common goals.

#### STRATEGIC FUNCTIONS OF PLACE MARKETING

In addition to the management of the attractiveness of a place, marketing has other six strategic functions. These functions are:

- To identify the potential demand target that is relevant for the place and its stakeholders.
- To understand the key success factors of its stakeholders.
- To define the strategic positioning of the place in the perception of the demand target.
- To guide the evolution of the place offer towards the creation of the maximum value for the demand target
- To develop a positive perception of the place through effective communication and promotion actions (Asworth and Voogd, 1994)
- To create and develop relations with the demand targets.

Place marketing plays an important role in reinforcing the perception and the competitiveness of the products and the services that represent a place in foreign markets. This function improves exports. Exporting means attracting people or enterprises to-

wards the products or the services produced in a particular context or country. The potential benefits that come from the improvement of export has a twofold effect: the “made-in effect” that improves the attractiveness of several products or services produced in a specific area or country; the enhancement of the general perception of clients and stakeholders, i.e. a product or a service becomes a symbol for a place or a country as whole and for their attractiveness.

So, place marketing may encourage exports and their positive effects on a place. These effects can be summarize as follows: 1. Added value, because they work to the advantage of a place; 2. Attraction of foreign direct investments (FDIs), as the exported products and services show the competitiveness and the attractiveness of the place of origin in the place of destination; 3. Development of local productions, since the presence in foreign markets through exports reduces the possibility that local firms invest in other countries; 4. Image, because exports improve the International image and visibility of the place; 5. Tourist attractiveness, because famous products that come from a specific place, and are the direct expression of its specific attributes, improve the reputation and the attractiveness of that place as a tourist destination.

#### THE DEVELOPMENT OF A TERRITORIAL OFFER

In the marketing perspective, a place is a system of “offers”, i.e. the context that includes a set of offers arranged to satisfy specific demand targets. Place offers are characterized by single (relevant) components (which are both material and immaterial) or by combinations of them. For example, Rome’s tourist offer includes the St. Peter’s Basilica as the single component of excellence that strongly characterizes the strategic positioning of the city.

The competitiveness of the system of territorial offer is related to the attractiveness of its single components and how they are interlinked and integrated in the single territorial offer. The integration of different material and immaterial elements leads to the presentation of the territorial offer as a real product, clearly addressed to the potential demand. This approach is typical in tourism: the offer of a geographical area includes different products characterized by various components, which are strongly related to the place, that together offer a unique experience to visitors.

The competitiveness of the place offer is also related to the quality of the integration among the other territorial components. So, the result is a system, that has to be managed as a “portfolio” of offers with two strategic aims: 1. To identify and exploit the interdependences among different offers; 2. To support the integration among place offers to maximize the value created for the demand target.

In the management of this “portfolio”, the coordination of the different actors involved is more and more complex. Therefore, the commitment and the leadership of the managing authority play a key role.

It is important to underline that this system is different from the entire offer of products and services created internally, even if they can be an important component of this system. Co-marketing actions are used to combine the system of place offer and the offer of products and services produced in a specific place.

Of course, the coordination of each actor within a place plays a fundamental role in improving the attractiveness of a specific area. The effectiveness of this coordination is due to these actors' sense of belonging to the place and to the quality of the internal social capital. So, it is really important to define a clear and shared vision of the future development of a place. Finally, the managing authority should have adequate technical and leadership competences that are clearly recognized by each internal actor.



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# Eco-industrial parks: the international state of art

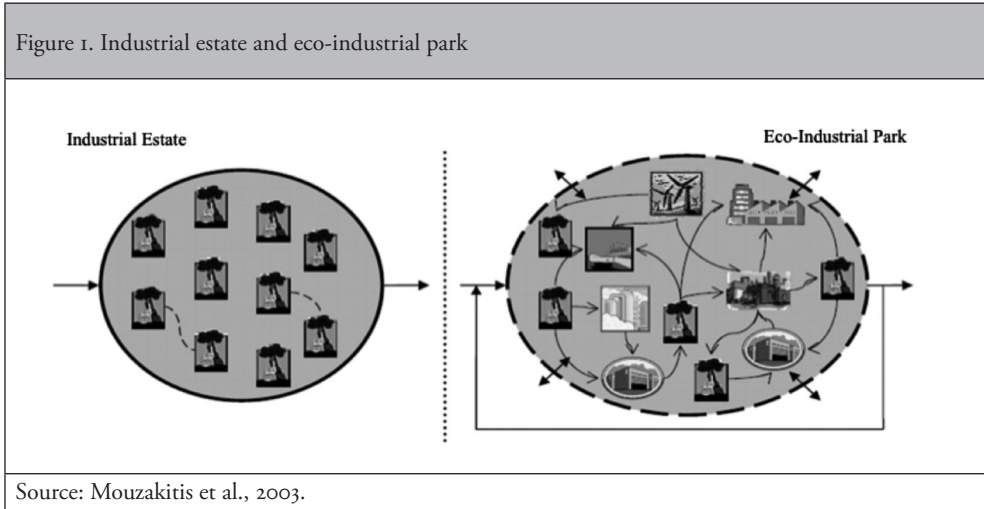
*by Alfredo Valentino*

## A BRIEF INTRODUCTION ABOUT ECO-INNOVATIVE INDUSTRIAL AND ENTERPRISE ZONES

After the Johannesburg World Summit, the attention of scholars and practitioners is focused on the concept of industrial ecology, a discipline that studies the energy and matter flows to optimize waste management and to reduce the global pollution (Tibbs, 1992). Following the idea of natural cycles, industrial ecology redefines the industrial facilities and infrastructures as if “they were a series of interlocking manmade ecosystems interfacing with the natural global ecosystem” (Mouzakitis et al., 2003, p. 85). The improvement of the “industry-environment” interactions is a way to realize the transition from a non-sustainable to a sustainable world (Mouzakitis, Adamides and Goutsos, 2003).

According to Erkman (1997), the main area of application for industrial ecology is the field of eco-industrial parks. An eco-industrial park is «...a community of manufacturing and service firms located together in a common property. Member businesses seek enhanced environmental, economic and social performance through collaboration in managing environmental and resource issues. By working together, the community of businesses seeks a collective benefit that is greater than the sum of individual benefits each company would realize by only optimizing its individual performance» (Lowe and Evans, 1995). The idea of eco-industrial parks is oriented towards a twisting of the classical industrial estate (based on a linear model: extract-consume-dump). It is like a “system” which includes business activities, natural sources, energy, raw materials, waste, final products, and labour. Moreover, the creation of exchange networks is at the basis of eco-industrial parks, that are considered like a natural system where no waste - defined as something that cannot be absorbed constructively in the system - is produced (Lowe, 2001). This aim is achievable by «making maximum use of recycled materials in the new production, optimizing the use of materials and embedded energy, minimizing waste generation and re-evaluating wastes as raw material for other processes» (Tibbs, 1992). This web of interactions (among individual firms and institutions) represents the main attribute of eco-industrial parks and one of the main differences with respect to the classical idea of industrial estate. Moreover, this web of interactions goes beyond the boundaries of industrial parks, involving other firms and institutions and improving sustainability at the regional level.

The transition to the logic of eco-industrial parks requires changes at three different levels: individual firm (dematerialization, eco-efficiency, etc.), industrial estate (collective management, exchange network, web of interactions, etc.), and at the boundaries of the system (legislation, institutions, etc.) (Mouzakitis et al., 2003).



Eco-industrial parks are a powerful tool that can benefit the involved firms, the local and the wider community (Lowe, 1997). In such a park, firms can achieve production cost savings through an efficient and sustainable use of materials, energy, and waste. Operational costs of infrastructures and facilities can be lowered, because they are shared by all participants in the park (Lowe, 2001). Moreover, firms can improve their performance by selling waste material as input for other firms (Lowe and Evans, 1995; Mouzakitis et al., 2003). Finally, the interactions with other firms improve the possibility to solve common problems, to spread knowledge, information, and innovation, and to share R&D investments.

An eco-industrial park can provide benefits also to the local and to the wider community. These parks can improve the quality of life in the area through the reduction of pollution, industrial waste, and harmful substances. Moreover, they increase employment, capital investment, and the visibility of the area, encouraging national and international firms to relocate into the park to benefit from knowledge spillover effects. For the wider community, an eco-industrial park can be considered as a working model to demonstrate how it is possible to apply the principles of sustainable development in the industrial world.

Looking at their characteristics, eco-industrial parks can be divided into two main groups: public and private parks. Public parks are owned by the local authorities frequently in collaboration with the main local universities. Usually a company is established which is controlled by the local authorities and whose managing board includes a delegate of each participating company, of the local authorities and of the universities or research centres (Lowe, 2001; While, Jonas & Gibbs, 2010; Senlier & Albayrak,

2011). The managing board plays mainly a supporting and coordinating role (While et al., 2010; Boons, Spekkink & Mouzakitis, 2011). The main tasks of this board are to (Lowe, 2001; Gibbs, Deuz & Proctor, 2005; While et al., 2010; Senlier & Albayrak, 2011):

- Help companies to create their network and solve their problems;
- Organize specific projects on environmental topics;
- Organize meeting/events;
- Manage public infrastructures and facilities of the park;
- Promote the image of the park outside.

Companies use to pay an annual fee to be part of the managing board (Lowe, 2001).

In private parks, the owner is a private company that usually owns the site where park is built. This leading company plays an executive role and is pivotal for the development of the park. Its main tasks are to (Lowe, 2001; Boons et al., 2011):

- Identify and select potential EIP members;
- Keep out companies that are not in line with the quality standards of the park;
- Manage infrastructures and facilities;
- Organize events and promote the park at national and international level;
- Create the web of interactions among firms within and outside the park.

#### BENCHMARK ANALYSIS

To show the state of the art of the eco-industrial parks at the International level and to understand their main attributes, a benchmark analysis has been carried out describing and comparing the main eco-industrial parks worldwide. The geographical location, the infrastructures and facilities, the services, the communication and promotion plan, and the factors of excellence have been investigated for each case study. The parks have been selected based on the frequency with which their name occurs in newspapers, academic papers, and specialised magazines. So, these parks could be considered as the best practices for industrial sustainability. I only included parks in Europe, in the USA, and Canada, excluding Countries of Eastern Europe, the Middle East and developing Countries, because of the lower availability of quality Internet sources. Following these selection criteria, I identified 8 case studies: 6 in Europe, and 1 in Canada:

1. Kalundborg eco-industrial park (Denmark);
2. Value Park in Schkopau (Germany);
3. Crewe Business Park in Cheshire (UK);
4. Environment Park in Turin (Italy);
5. Vreten Park in Stockholm (Sweden);
6. Hartberg Ecopark (Austria);
7. Devens eco-industrial park (Canada).

I developed the case studies by collecting data from private and public reports, the web sites of the parks, where available, and the main web portals on this topic (see the following table 1 for more information).

Table 1. Web portals on eco-industrial development	
Portal	Link
United Nations Environmental Programme	<a href="http://www.unep.org/">http://www.unep.org/</a>
European Partners for the Environment	<a href="http://www.epe.be/">http://www.epe.be/</a>
European Eco-sites Federation	<a href="http://ec.europa.eu/research/environment">http://ec.europa.eu/research/environment</a>
Ecomark Project	<a href="http://www.ecomarkproject.eu/it">http://www.ecomarkproject.eu/it</a>
University of Hull, Department of Geography	<a href="http://www2.hull.ac.uk/science/geography.aspx">http://www2.hull.ac.uk/science/geography.aspx</a>
Smart Growth Network	<a href="http://www.smartgrowth.org/">http://www.smartgrowth.org/</a>
Indigo Development	<a href="http://indigodev.com/">http://indigodev.com/</a>

#### KALUNDBORG ECO-INDUSTRIAL PARK

Kalundborg is a small town on the west coast of Zealand in Denmark, 120 km away from Copenhagen. It has a population of about 50,000. It is famous all over the world because of the presence of the most important symbiotic industrial park, defined by Chertow (1998) as an area characterized by the continuous exchange of energy, waste, and water between clusters of firms and the municipality. Even if it is considered as an eco-industrial park, it was created without specific and clear strategic planning. As a matter of fact this park was conceived as an answer to the problems of firms localized in that area. To solve their problems, these firms spontaneously developed intense economic and strategic relationships with one another. Over the years, this “non-planned” park has attracted a growing number of private and public actors, interested in the exchange of productive input.

Currently, the Kalundborg Industrial Symbiosis model is made up mainly of five firms besides the Kalundborg Municipality: Asnaes DONG Energy (power plant), Statoil (refinery), Gyproc (plasterboard manufacturer), Kara-Novoren (waste management company), and Novo Nordisk (pharmaceutical and biotechnology company). In addition, there are many other small firms outside the industrial area of Kalundborg that have symbiotic relations with the main facilities.

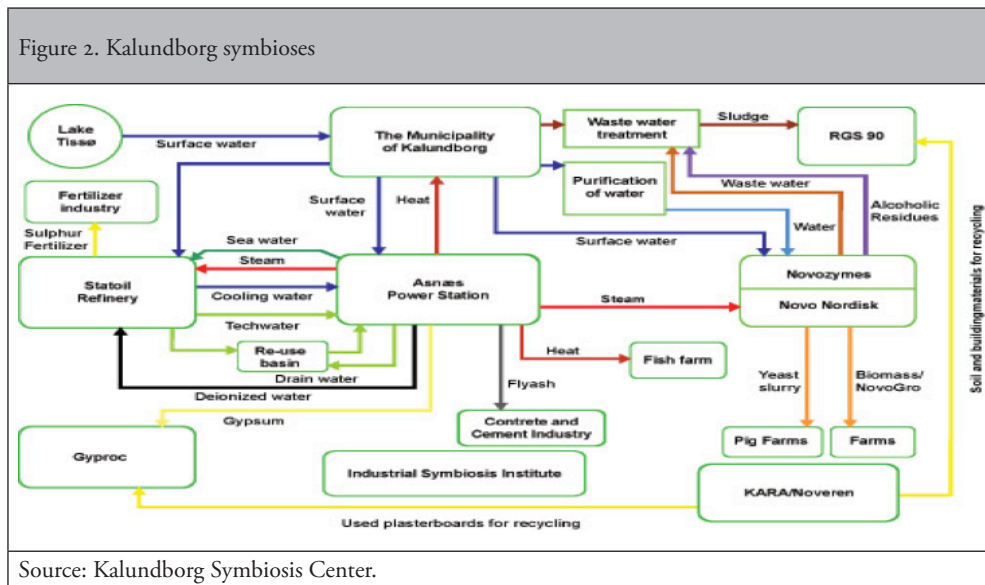
The industrial symbiosis started when Gyproc decided to localize its plasterboard factory in the area. This decision was taken to reduce their production costs through the exploitation of surplus gas burned unprofitably by Statoil. Both firms achieved economic and productive benefits through this exchange. On the one hand, Gyproc reduced its supply costs, buying low-cost gas; on the other, Statoil sold overproduced gas. From that moment, neighbouring firms understood the potential and the benefits of these “win-win” productive relationships.

To face the underground water shortages, Asnaes transformed its water supply system (in return for energy) combining water from Lake Tisso with cooling water and

wastewater from the Statoil refinery. Gradually, Asnaes started to reuse its own wastewater, reducing by 100% the use of underground water.

The municipality of Kalundborg gets energy from Asnaes in return for the water from Lake Tisso. So, the power plant provides energy for the district heating system which replaces around 3,500 individual heating systems. Moreover, Asnaes also uses overproduced gas from Statoil, reducing carbon and greenhouse gases emissions.

The ashes and the gypsum produced as waste in the desulphurization process of the power plant are used by Aalborg Portland to make cement and by Gyproc for plasterboards. These are some examples of the symbiotic exchanges among firms in Kalundborg Park. The following chart shows every relationship established within the park.



During an interview I conducted with Mette Skovbjerg, one of the managers of the Kalundborg Symbiosis Center, she defined the park as «an International example of industrial sustainable development where communication and human relationships are more important than technology». In the Kalundborg Park, sustainability comes mainly from the willingness and the need to reduce supply and production costs.

Being part of an industrial symbiosis as Kalundborg creates benefits both for firms and for the local authorities. Firms minimize costs related to production input and to waste disposal. Moreover, cost savings for firms are also related to lower “green” taxes. Finally, in this park firms can achieve knowledge spillover effects and share innovation.

Local authorities, on the other side, benefit from a reduction of environmental pollution and of harmful industrial substances. Moreover, the park increases the quality of life, the employment rate, and the attractiveness of the area by improving its image.

The main results achieved by the Kalundborg Park in the last years can be summarized essentially in three main macro-areas: environmental savings, reduction of pollutant emissions, and re-utilization of industrial waste. In the first area, savings amounted

to 19,000 tons of oil, 30,000 tons of coal, and 600,000 m<sup>3</sup> of water (out 3 million). Moreover, emissions were reduced by 130,000 tons of CO<sub>2</sub> (out of 4 million tons), and 3,700 tons of SO<sub>2</sub> (out of 29,000 tons). Regarding the last area, the reuse of waste products included 135 tons of fly ash, 2,800 tons of sulphur, 80,000 tons of gypsum, and 800,000 tons of nitrogen in sludge. Moreover, the firms have reduced the overall consumption by 25% by recycling water and by letting it circulate between the individual partners. They have also reduced their oil consumption by 20,000 tons per year, corresponding to a 380-tonne reduction of sulphur dioxide emissions on a yearly basis. The combustion of coal and Orimulsion at Aesnaes Power Station results in approximately 80,000 tons of ash, which are used in the construction and cement industries for the manufacturing of cement or the extraction of nickel and vanadium<sup>1</sup>.

### *Kalundborg infrastructures and services*

In the park, there are many green infrastructures, which are both public and private. The park is equipped with:

- Two sewage treatment plants;
- Two cooling systems;
- A water purifier and a water container;
- A nitrogen disposal plant;
- Two waste recycling plants;
- Two power plants that will generate only green energy from 2015;
- A waste incinerator.

The involved firms have direct access to these infrastructures, as well as to different services offered by the recently established managing board. These services range from area analysis and monitoring of environmental emissions to assistance for the recruitment of qualified human resources and the identification of potential commercial and productive partners.

### *The managing board in Kalundborg*

The managing board is consists of one delegate from each firm and one delegate of the Kalundborg municipality. Initially, it was an executive and administrative body, but its power has been reduced by the strong opposition of firms determined to maintain their autonomy. Today, the main tasks of the managing board are:

- To stimulate the collaboration between firms in the park;
- To organize annual meetings with firms;
- To implement ad-hoc projects to solve the problems firms encounter, which are discussed during the annual meetings;
- To manage the public infrastructures and the services.

1. Data come from the Kalundborg Symbiosis Center.

The managing board organizes once or twice yearly meetings with firms to discuss their main problems or needs and how to address them through specific projects. These projects are carried out in collaboration with the interested firms and they are coordinated by the managing board. They mainly tackle environmental issues. Currently, there are on-going 33 projects divided as follows:

- 14 on water reuse;
- 7 on green energy production;
- 12 on waste recycling.

The managing board is also in charge of promoting the park by organizing events, conferences, and workshops where its economic and environmental benefits are highlighted. Once a month the park hosts foreign entrepreneurs who are interested in better understanding how the park works and what benefits it can offer. There are also partnerships with local universities, and in particular with the Copenhagen Business School and the Roskilde University. Finally, the park has been discussed in the media and in academic papers because it is considered a unique example of industrial symbiosis.

### *The strengths of Kalundborg park*

In a nutshell, the strengths of Kalundborg park can be summarized as follow:

- the presence of many big firms in the area;
- the short distance between the firms grouped within the industrial area of Kalundborg;
- the absence of competition among firms;
- the economic incentives for the firms involved in pollution reduction;
- the absence of legal barriers;
- the absence of a pyramidal structure within the park, because the main task of the managing board is to foster the relationships among firms;
- the autonomy of the involved firms.

### VALUE PARK

The Value Park is an example of private park. It was established in 1998 by Dow Olefinverbund GmbH (a large-scale chemical and plastics multinational enterprise) and its subsidiary Bsl supported by the Federal State of Saxony-Anhalt (Sachsen-Anhalt) and Saxony. It was created after the reclamation of the production area where Bruna, the first industrial manufacturer of synthetic rubber, was located.

The park is located in the small town of Schkopau (about 3,500 inhabitants) in the central German region near the cities of Leipzig, Halle, and Dessau. It has a ground surface of 100 ha, about 50,000 m<sup>2</sup> of floor space and 15 main buildings. Its main aim is to offer a potential location to rubber manufacturers, related to Dow and Bsl, and to their suppliers, in order to create long-term relationships and to improve the productivity and attractiveness of the region. The idea is to set up a value-added network for raw material and service suppliers, and firms:

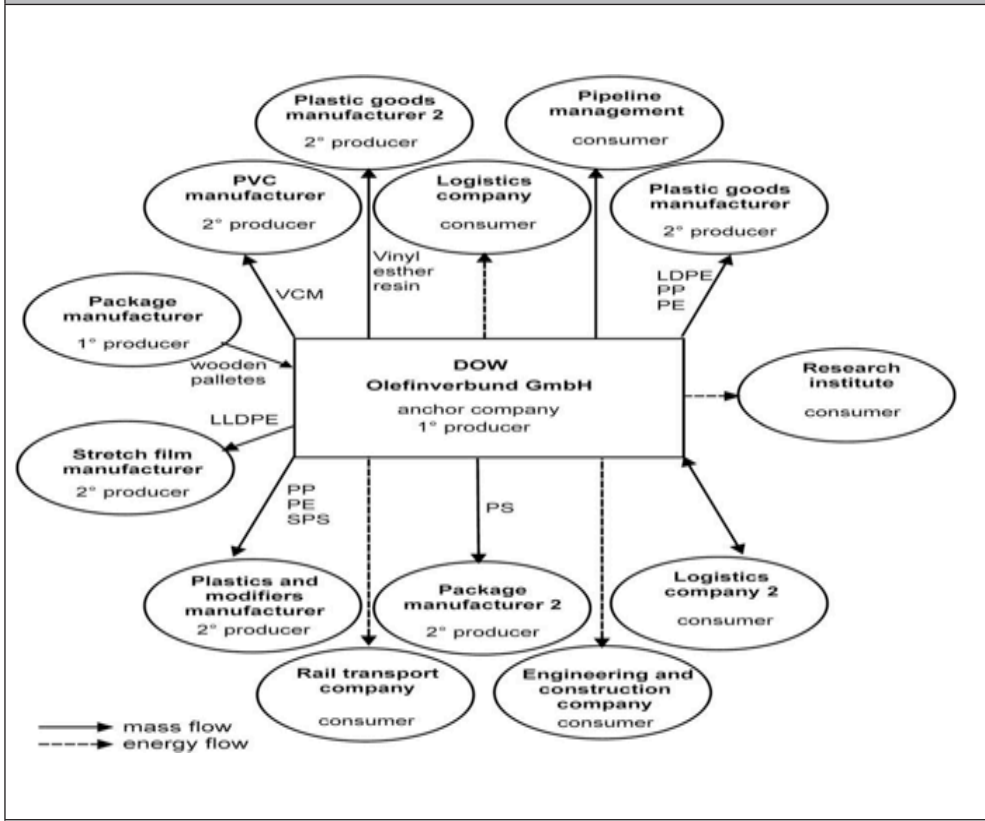
- to share infrastructures and services



- to supply raw materials and services
- to buy and manufacture products .

This network is characterized by the presence of a big chemical firm, Dow Olefinverbund GmbH, and other 13 secondary firms related to the main one. This is the industrial community within the park. Dow is the first producer and plays the role of the anchor firm. Among the 13 companies, six firms are identified as the secondary producers and one as the first producer. «The second-order producers have the symbiotic relationships with the anchor company and manufacture the polyolefins and other chemicals into stretch film, modifiers, PVC windows and many other plastic goods, while the first-order producer supplies wooden pallets to the major company» (Liwarska-Bizukojc et al., 2009). The other five companies in the park are labelled as consumers. Their activity is connected mainly with transport and logistics. This network is represented in figure 3 below. In this figure, only the relationships between the main firm and the other 13 secondary ones are represented. Of course, these 13 companies also cooperate among themselves.

Figure 3. Symbiotic network in Value Park



Source: Liwarska-Bizukojc et al., 2009.

These firms are carefully selected by the anchor company, Dow, and are related to its main productive activity. The main requirement to be part of the park is being ready to create long-term relationships with the other actors within the park to improve the total value of park. The main firms are:

- Dow Bsl, the anchor company;
- EVC GmbH, Europe's largest PVC producer;
- Hoye GmbH, logistics firm in the chemical industry;
- Kurotec GmbH, manufacturer of glass fibre-reinforced tubes;
- Manuli Stretch GmbH, manufacturer of fully recyclable industrial quality LLDPE stretch film, BOPP film, and self-adhesive film;
- Pasec Industrieverpackung GmbH, manufacturer of wooden pallets;
- RP-Compound GmbH, manufacturer of rubber products.

Moreover, the park is well connected to the main cities of the Eastern and Central Europe, two really important markets in the rubber industry.

Motorways running north-south (A9, Berlin-Munich) and east-west (A14, Dresden-Magdeburg) are easily accessible. The Leipzig airport is close to the park and is expanding.

#### *Infrastructures and services in Value Park*

The firms located in the Value Park can share green infrastructures which include in particular:

- A sewage treatment plant;
- Three cooling systems;
- Two water purifiers and two water containers;
- A plant for nitrogen disposal;
- A fire-protection system directly linked to the nearest fire station;
- Two warehouses and a logistics center;
- A R&D centre for new technologies owned by Dow.
- Two waste recycling plants;
- A power plant and a cogeneration system that provides power to the firms in the park;
- A Dow-owned waste incinerator.

Moreover, Value Park offers additional services, classified into three main categories:

- Consultant services;
- Environmental services;
- Human resource management services.

The first category regards the constant advice given to potential and involved firms concerning:

- The business plan and the definition of the amount of the investment to enter in the park;
- The bureaucratic entry procedures and the required permissions (especially the environmental ones);
- The public and private fundraising;
- The accommodation.

The second set of services consists mainly of:

- The treatment of sewage;
- The heat treatment of productive waste;
- The monitoring of industrial waste, pollution, and temperature;
- The storage of products;
- The routine maintenance;
- The laboratory tests.

Finally, the third category is related to:

- The help in the recruitment of qualified human resources in the chemical industry;
- The free entry into the training centre of Dow;
- The selection of employees through park database.

### *Dow in the Value Park*

Dow founded the park in 1998. It plays an executive and hierarchical role within the park, selecting firms and keeping out those who are not in line with the park's aims. Moreover, it directly promotes the image of ValuePark and its main benefits locally and worldwide. The website of the park is very useful to this end. It is the place where potential firms can find all information about the park and its main infrastructures and services. Moreover, Dow organizes events, conferences and workshops not only with firms and entrepreneurs, but also with students and researchers to directly sponsor the main attributes of the park. Finally, the park is open to interested visitors every month.

### *The strengths of Value Park*

The main strengths of Value Park can be summarized as follow:

- Central geographical position and proximity to the active and ever-growing Eastern European markets in the chemical-rubber industry;
- The presence of firms in the same industry;
- Cost savings generated by sharing of resources and infrastructures;
- The reduction of pollution and of costs for waste disposal;
- The presence of environmental infrastructures;
- The provision of advisory, environmental and management services to the local firms;
- The International image of the park through the marketing activities of Dow;
- The sharing of new knowledge and innovations through the free access to Dow's R&D centre;
- The possibility to hire highly qualified employees via Dow's recruitment and training offices.

Finally, the Value Park can be considered as a vertical network of firms in the same industry, linked by commercial relationships with the anchor company, Dow. These firms can share the same productive infrastructures and the same services with considerable production cost savings. Moreover, they can also reduce R&D and training costs as they get free access to Dow's R&D and training centres of Dow.

## CREWE BUSINESS PARK

Crewe Business Park is located in the Crewe and Nantwich Borough (the population of this area is about 114,000) in North West England. It is a 67 acre site, only 25% of which is used for construction purposes, while the rest is a natural park. It was found in 1986 by the Cheshire, Crewe and Nantwich Country Council. The Royal Society for Nature Conservation (RSNC) also played an important role in particular providing technical help on the legal aspects of environmental protection. This is considered to be the first ecological park in the UK and is labelled as “Britain’s first genuine eco-business park”. It has received a number of awards, including a Millennium Marque for Environmental Excellence in 2000; it was one of just two business parks in the United Kingdom to receive this award.

From its inception in 1986, the development of the park has been managed by a strong ecological policy that protects the natural features of the site with a “high-density of pagodas and clipped lawns variety”. Moreover, the park includes a brook, ponds, a species-rich grassland and an ancient hedgerow. These have been enhanced with the planting of thousands of native shrubs and trees, native aquatic plants on the edges of ponds, and wildflowers.

The main policy of the park is that businesses have to support the conservation of the natural aspects and the wildlife of the park. Its vision is to combine business with the respect of the environment and nature.

The involved firms belong exclusively to the technology, communication, software, and service industries. They are carefully selected by the Cheshire, Crewe and Nantwich Country Council based on their activities and their environmental certifications. Currently there are 30 firms; the most important ones are:

- Fujitsu, a Japanese company leader in the Information and Communication Technology
- Barclays Bank, a British International bank
- Red Eye International, an information service enterprise
- Air Products, international firms in chemical products.

The park is well connected to the main cities in the UK. It is possible to arrive quickly and without problems to Liverpool (66 km), Manchester (80 km), Birmingham (140 km), and London (272 km). The International airports of Liverpool, Manchester, and Birmingham are really close to the park. Moreover, the main railway terminal of Hams Hall, that annually manages 170,000 tons of products, is 90 km away from the park.

The Crewe and Nantwich Country Councils are responsible for the management of the park and for its marketing activity. They invest mainly in international marketing, organizing events, workshops and conferences and inviting American, Japanese and Chinese entrepreneurs to visit the park. Moreover, they frequently collaborate with the Universities of Manchester and South Cheshire. The internal nature conservation policies are not only direct to improve environmental sustainability, but also to improve the image and the attractiveness of the park. They are an important marketing tool.

### *The infrastructures and services in Crewe Business Park*

The Crewe Business Park is different from the other eco-industrial parks due to the total absence of ecological infrastructures with the exception of storm sewer systems. The park is an example of “Green Infrastructure”, where ecological infrastructures stem from the respect for the local nature and the landscape features. Its layout has been designed to follow the natural lines of the place, such as trees, rivers, hedges, and so on. Moreover, the buildings have been designed to complement the current landscape.

The Crewe and Nantwich Country Councils offer mostly consultant and environmental services to the involved firms. Their aim is to help firms implement their business plan, deal with bureaucratic procedures, fill out the necessary forms to comply with public and private funding, and find suitable premises. Furthermore, they provide environmental services which include rain water treatment and the monitoring of industrial waste, pollution, and temperature.

### *The strengths of Crewe Business Park*

The main strengths of Crewe Business Park can be summarized as follow:

- The respect of the natural landscape of the place
- High quality of life in the park
- Reduction of pollution
- Cost savings and financial benefits for the involved firms to rent offices and/or houses for employees. Firms receive a 10% to 30% discount on the rent price.
- The International image of the park and the involved firms, because in the technology industry clients are really sensitive to green activities.

## ENVIRONMENT PARK IN TURIN

The Environment Park was founded in 1996 by the Region of Piedmont, the Province of Turin and the European Union. It stands out among the European scientific and technology parks for its ability to combine innovation and eco-efficiency. It has a ground surface of about 30,000 m<sup>2</sup> that includes laboratories, offices and productive sites.

The Environment Park is an accelerator for businesses looking to use eco-efficient solutions to expand their market share. It provides businesses and public with solutions for energy saving, waste disposal, clean energy, new materials, and financial resources, so that they have the possibility to completely change their *modus operandi*.

Today, the park has proper governance. Its main aim is to develop environmental sustainability by fostering relationships between private firms and public authorities as well as innovation and eco-efficiency. Its mission can be summarized in three main points:

- To be a talent scout of green economy in the industrial and economic context of Piedmont;
- To introduce eco-sustainable innovations at local and national level;
- To offer an high quality environment to involved and partner firms.

The Environment Park is well connected to the main Italian and European cities through airports, railways and motorways. It is 11 km away from Turin-Caselle airport and 140 km from Malpensa airport. Turin's Porta Nuova railway station is 4.2 km from the park. Moreover, Turin is perfectly linked to Milan, Genoa, Genève, Nice, Zurich and Lyon, as well as other central-European cities by motorway.

The website of the park is well organized and provides a lot of practical and technical information. It is an important marketing tool for the park. Each section of the website features the contact details of the managers from whom additional information can be obtained. As in most eco-industrial parks, some events are periodically organized in the conference centre involving firms, public stakeholders, and researchers.

### *The infrastructures and services of Environment Park*

Focusing on green infrastructures, the industrial park is equipped with:

- A really small hydroelectric power station;
- A system for the production of hydrogen, with three lines for the pre-treatment of biomass and for the gas cleaning;
- A photovoltaic totem, that is able to produce about 17,000 Kwh/a;
- Three research centres for energy efficiency, building, and sustainable transport;
- Two water purifiers and two water containers.

The industrial park is completely eco-friendly, and fully relies on energy from renewable sources. Moreover, to improve the mobility of products within the industrial park, firms can share the same warehouses and logistics centres. There is also a conference room where the involved firms can organize meetings, workshops, and events on environmental topic.

As in other eco-industrial parks, the involved firms can have access to many services. The Environmental Park is organized in two main business units. The first provides expert technical advice and market solutions in the fields of Green Building, Plasma Nano-Tech, Green Chemistry (biomass treatment), Advanced Energy (energy production and storage) and Clean Tech (technology transfer). The Green Building sector of the park consists of a highly professional team that is responsible for:

- Environmental energy certification;
- Energy management;
- Environmental construction site management;
- Sustainable building.

The Green Building sector of the Environment Park also takes part in European research projects.

The Green Building sector studies how to turn waste into profit. They research new solutions to increase both the economic and the environmental sustainability of agro-industrial production chains and that can be customised at the demand of individual businesses. They provide:

- Studies to the production of energy and biofuel from renewable sources;
- Research and development for the improvement of anaerobic digestion technologies;

- Research into economically sustainable solutions;
- Expert advice on anaerobic digestion systems design.

The Advanced Energy sector is one of the main experimental sectors of the EnviPark and is devoted to electricity production and storage using alternative high-efficiency technologies.

The Plasma Nano-Tech sector provides small businesses and large firms with new eco-efficient solutions based on plasma technologies.

Finally, the Clean Tech sector is dedicated to providing technology transfer support services to promote innovation among firms and public administrations within the field of clean technology.

The second business unit is based on Real Estate Services. It is the operational area of the Environment Park. It is responsible for focusing on the management and re-launching of the business area, which covers over 30,000 m<sup>2</sup> and houses around 70 firms devoted to technological innovation.

### *The strengths of Environment Park*

The main strengths of the Environment Park are the following:

- It is the first park completely self-sufficient from an energy point of view through the use of renewable sources;
- The presence of public and private organizations that work actively together;
- The 25% energy consumption reduction compared to 2005, even if the area has grown by about 15%;
- The sharing of knowledge and technologies;
- 30,000 m<sup>2</sup> of offices and labs for the involved firms.

### VRETEN PARK IN STOCKHOLM

Vreten Park is located in Sweden close to Stockholm. It was founded by Solna, a municipality in Stockholm County in east central Sweden, located just north of Stockholm's city centre. The Vreten Park is populated especially by Swedish small and medium enterprises. There are about 80 firms with 50,000 employees. This park is an example of the Cluster Approach, where firms, divided in Business Cycles, study and find solutions to their social, environmental and economic problems. These business cycles are small groups of firms that periodically organize internal meetings to discuss about projects and problems. They strive to::

- Reduce energy consumption and increase the use of renewable sources;
- Manage industrial waste efficiently;
- Improve logistics centres;
- Reduce pollution;
- Implement eco-sustainable building logics.
- Build sustainably.

The Vreten Park is well connected to the International airport of Stockholm and to the main railway stations and motorways.

### *Business cycles and environmental services in Vreten Park*

The peculiarity of Vreten Park is the presence of Business Cycles, i.e. working groups of involved firms focused on specific environmental topics. Each business cycle is responsible for a project on:

- Energy
- Waste management
- Logistics
- Building.

These groups have meetings every three weeks where they discuss the progress made on ongoing projects. Moreover, the park offers several environmental services to the involved firms, mainly in the field of waste management, commuter transport, water and energy consumption reduction, and environmental performance. In the industrial park there are waste sorting deposits and a waste disposal plant. Moreover, the management of Vreten Park makes unused stocks of raw materials available to all firms involved in the business cycles. The commuter transport has been improved in different ways: reducing loss of time, creating cycling lanes, and carrying out projects to improve the efficiency of freight traffic. Tools for water and energy management and reuse have been implemented in the involved firms. These tools generate an average saving of 20%. Moreover, a special heating system has been implemented not only to improve heat comfort and work quality, but also to reduce the energy consumption by 10%. Finally, the environmental quality of each building is checked using specific information systems. The aim is to improve the environmental performance of buildings and lead to cost savings for firms.

### *The main results of Vreten Park*

The business cycles are the main characteristic of Vreten Park. They are able to create really strong public-private relationships that generate benefits to both firms and the local community. In the last years, the firms involved in the business cycles have made considerable cost savings. Moreover, they have increased their green image, their resources and competences. The local community has improved its image and attractiveness as well. Furthermore, it has spread the use of green buildings and reduced:

- industrial waste by 50%;
- the freight traffic by 50%;
- water and energy consumption by 20%;
- unemployment by 30%.

#### HARTBERG ECOPARK IN AUSTRIA

The Hartberg Ecopark is located in Styria (Austria) close to Hartberg, a small town of 6,600 inhabitants. This is a really strategic location close to main European markets, but also to the active market of Croatia, Slovenia, and Hungary. The park has a ground surface of about 15 ha. The firms involved in this eco-industrial park are active mainly in the production and commercialization of environmental products and services.



The park is well connected to the main Austrian cities through the motorway (A2) and to the main international locations through the airport of Vienna.

There are currently 30 small and medium firms involved in the Hartberg Ecopark. These firms have generated 200 new jobs in the last years. The main ones are:

- NeoVoltaic AG, which makes products for energy supply
- ÖKOPLAN Energiedienstleistungen GmbH, which specialises in energy optimization
- Peinsipp Trockenbau, which offers solutions for eco-sustainable buildings
- Montagen & Handel GmbH, which produces high-insulation windows, doors, and floors
- Saubermacher, that is about industrial waste recycling.

Moreover, there are also many research centres that investigate environmental solutions to improve energy efficiency in the industrial park.

The park has a twofold aim: first, to underline and to demonstrate the viability of environmental techniques in industrial parks; and, second, to promote those techniques at international level.

To reach these goals, three interconnected approaches have been adopted:

1. The creation of park for eco-businesses
2. The creation of an applied research centre
3. The creation of an exhibition and a leisure park.

The last approach may be more difficult to understand. It is implemented mainly through the dissemination of promotional material and the creation of exhibition itineraries and spaces, in addition to other attractions like the Underwater & Aquarium World, the limestone cutting workshop, the paper making workshop, the energy and nature trail. To this end, promotion and communication are two important activities that the park carries out by organising public events on environmental topics as well as through social initiatives to help children and public buildings, such as schools. A weakness is the website of the park. It is only in German, which reduces the attractiveness of the park for foreign potential firms and investors.

The Hartberg Ecopark is part of an ecological Styrian project based on the application of industrial ecology principles not only within an industrial park, but within an entire region. The qualitative result of the project is the creation of a regional network of firms and research centres. These actors work together to improve the environmental performance of the region through the recycling of industrial waste. The main quantitative results could be summarized as follows and are related to the reduction of:

- 250,000 t of industrial waste from steel plants
- about 100,000 t of industrial waste from blast furnaces
- 13,000 t of recyclable paper
- 500,000 t of wood
- 30,000 t of bark
- 150,000 t of ferrous waste.

### *Infrastructures and services in the Hartberg Ecopark*

The main infrastructures in the Hartberg Ecopark are:

- A plant for sewage disposal;
- Three cooling systems;
- Two water purifiers and two water containers;
- A plant for nitrogen disposal;
- Solar panels on the roof of each building to produce and use clean energy;
- A regional power plant that generates energy mainly from renewable sources.

Moreover, the Hartberg Ecopark offers additional consultant and environmental services, like the identification of the right area for firms within the park, the recruitment of human resources, and the selection of potential partners. The firms involved in the park get a (20% to 40%) financial discount on rent. Environmental services concern sewage disposal, monitoring and treatment of industrial waste.

The research centres work on many environmental projects. Currently on-going projects deal with ecological buildings, biomass engines, renewable raw materials, sewage disposal, and so on.

### *The strengths of Hartberg Ecopark*

Firms are attracted to the Hartberg Ecopark because they wish to be part of a strong network and to collaborate directly with research centres and other firms on environmental problems. Cost savings and the access to new green technologies are other important drivers.

Some internal studies estimate an average annual reduction of:

- water consumption by 10%
- energy consumption by 30%
- costs related to the disposal of industrial waste by 60%.

#### DEVENS ECO-INDUSTRIAL PARK

The Devens eco-industrial park is internationally considered the most successful eco-industrial development in the United States. It was selected as a case study for the UMore Park (University of Minnesota) precisely for its eco-industrial performance.

The park is located within the Devens community (Massachusetts) really close to Ayer, Harvard, and Shirley. It has a ground surface of 1,780 ha, and it is characterized by the perfect union among residential areas, productive activities, and community centres. The site of the park was the home of a US Army base. After the closure of the base the area was acquired by MassDevelopment, a quasi-public finance and development authority, and renewed. Currently, the park is managed by the Devens Enterprise Commission (DEC). DEC is the regulatory and permit granting authority for the Devens area: its funding comes from permitting fees.

From the beginning, the park has been divided into three small units, each with a core identity and mission: one devoted to environmental improvement, one to logistic

and transport, and the last one to commercial and productive activities. Each business unit includes an innovation and technology centre and community facilities as part of the added value offered by the DEC to increase liveability for employees. The units are perfectly linked to each other both by road infrastructure and by active relationships.

The creation of an eco-industrial park in Devens had two main aims: the transformation of the existing industrial activities into an industrial ecosystem concept and the attraction of future industrial activities to create new local opportunities.

The main idea was to create an eco-industrial network connecting firms and local authorities (see figure 4) and enabling these actors to work together. So, DEC has implemented “EcoStar”, a specific programme to achieve different goals: decrease environmental pollution, improve environmental efficiency, spread sustainable practices, promote respect for the environment and help local communities. “EcoStar” has established 25 environmental standards to measure the performance of each member. Rather than setting mandatory thresholds, these standards provide guidance and assess the members’ vision, employee morale, activities on water and energy conservation, and so on.

Today, 28 organizations are involved in the Devens eco-industrial park. They are small and medium-sized enterprises, non-profit organizations, research centres and public institutions. The most important ones are:

- Bristol-Myers Squibb, a leading pharmaceutical firm;
- Kraft Foods, a leading firm in the food industry;
- Image Software Solution, a company that sells digital products;
- Evergreen Solar, a solar panel manufacturer;
- Devens Recycling Center, a recycling centre in Devens;
- NetStal, a Swiss service firm;
- Northrop Grumman Corporation, a leading security company.

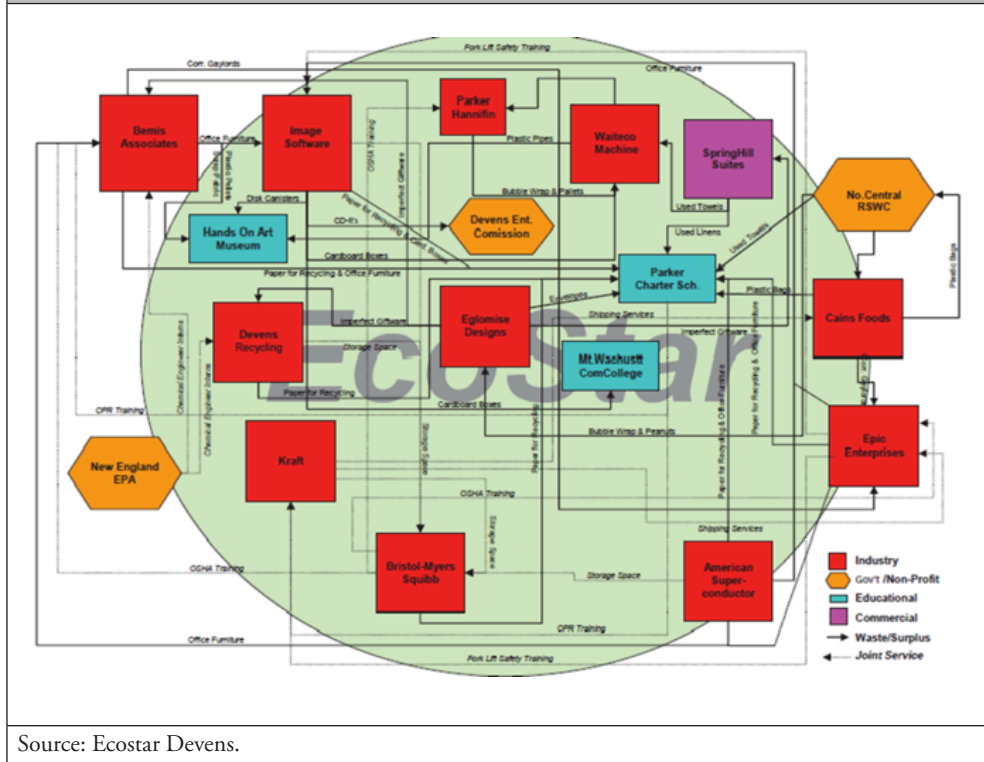
The Devens Enterprise Commission is in charge of the promotion of the park and every year it invests a considerable amount of money. The website is one of the most important marketing tools, where a potential member can find all information about the park. Moreover, DEC periodically organizes meetings and workshops on environmental topics.

#### *Infrastructures and services in Devens eco-industrial park*

The Devens eco-industrial park has many eco-sustainable plants and infrastructures that can be used by the firms in the park and by the local community can use. In particular, some of them are:

- A plant for sewage disposal;
- An industrial waste incinerator and a plant for recycling and re-using paper, glass, plastic and other materials;
- Two water purifiers and two water containers;
- Three power plants, managed by the Devens Eco-Efficiency Center and the Devens Recycling Center;
- The Eco-Efficiency Center aimed to disseminate sustainable values.

Figure 4. Network in Devens eco-industrial park



Moreover, the centre offers technical support to eco-industrial participants. Its approach with firms is really simple: the reduction and elimination of waste is a “no-brainer” for the businesses’ bottom lines, and in their best economic interest. The Eco-Efficiency Center also offers services such as:

- Recycling assistance
- Energy efficiency assistance
- Green business certification
- Monthly roundtable forums
- Educational tours

### *The strengths of Devens eco-industrial park*

The main strengths of the Devens eco-industrial park can be summarized as follows:

- The presence of several public and private organizations, which have created more than 4,500 jobs in the last years
- The strong reduction of pollution and productive costs through many eco-sustainable programs and actions, that generated an average annual saving of \$124,000
- The technology and knowledge sharing among members

- The willingness to match the growing demand through the construction of 106 residential units and 4.2 million square feet of commercial and productive real estate in the last years.

#### CONCLUSION

As can be seen from the case studies, eco-industrial parks have different aims, which include: recycling and re-use of industrial waste; energy efficiency; assistance to members; social actions and sustainable buildings. These aims can be achieved combining sustainable needs and economic benefits, generated by the reduction of costs incurred for waste disposal and energy provision. Eco-industrial parks are characterized by the creation of networks among their members to share knowledge, innovation and products. The most important example is Kalundborg, where each firm works in symbiosis with the others like a human being. Social needs are very important in the park as well. So, the managing authority of the park organizes on a regular basis events, workshops, educational tours and so on.

These parks may be managed by public or private bodies. Publicly-run parks do not have a well-defined governance. They are managed by a managing board, composed of a delegate for each member (that pays a participation fee) and for local authorities. Private parks are managed by a leading firm that usually owns the area and creates the park. The leading firm plays a real important role in the growth of the park and the creation of internal and external networks.

The analysed case studies underline how communication and promotion are two important activities in eco-industrial parks. To attract potential members, eco-industrial parks need to be promoted at national and international level. To this end, the managing authority has to prepare a proper marketing plan. The most widely used marketing tools are the website of the eco-industrial park, which should be very informative, and the organization of events, workshops and conferences on environmental topics. Moreover, parks often host on a regular basis foreign entrepreneurs who are interested in better understanding their operations and their benefits. Unfortunately, the power of these activities could be reduced in public eco-industrial parks due to the absence of a well-structured managing authority. Another weakness is the fact that sometimes the website is only available in the local language (like in the case of the Hartberg Ecopark), which reduces the attractiveness of the park for potential foreign investors.

The following table summarizes the main attributes of each case study. Each park is analysed based on 7 main criteria: recycling and re-use of industrial waste, resource efficiency, sustainable buildings, landscape safeguard, environmental actions, social actions and assistance to members.

Table 2. Common features in analyzed case studies

Case studies	Recycling and re-use of industrial waste	Resource efficiency	Sustainable buildings	Landscape safeguard	Environmental actions	Assistance to members	Social actions
Kalundborg Park	*	*			*	*	
Value Park	*	*				*	*
Crewe Business Park				*		*	
Devens Eco-industrial park	*	*				*	*
Environment Park in Turin		*	*	*	*	*	
Vreten Park	*	*	*		*		*
Hartberg Ecopark	*	*	*		*	*	*

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# Bioeconomy, circular economy and industrial symbiosis: towards a new concept of productive processes

*Marino Cavallo, Elisa Gerussi*

## THE CONCEPT OF BIOECONOMY

The concept of “bioeconomy” comes from the combination of the two terms “bio” and “economy”, referring each to a specific science based on specific laws and mechanisms. While biology refers to the study of the living world, both animal and plant, economy focuses on human organizational systems with the aim of optimizing the use of available resources. Over the past years these two worlds have started to interact and the result has been a new science that is now becoming more and more popular due to the growing attention given to the environment. More specifically, by the bioeconomy approach, economists take inspiration from biological models and link the classical economic perspective more closely to the real world.

Generally speaking, the bioeconomy refers to the production of bio-based products from organic food and non-food resources. Beyond the several definitions that we can give to the term “bioeconomy” two general aspects are worth mentioning:

- The relationship between biology (natural world) and economic systems (Frosch and Gallopoulos, 1989), which falls far outside the mainstream and classical view according to which business models and Nature are separated fields: the former generates profits whereas the latter provides oil, coal, water, solar energy, and other natural resources exploited into the business models.
- The opportunity to convert biomass<sup>1</sup>, otherwise discarded, into new value-added products in order to reintroduce them into the economic cycle, as in the case of ethanol from sugar cane or corn that can replace gasoline.
- The multidisciplinary of its origin entails a number of related concepts and interpretations. A few key words may help catching the deep meaning of the bioeconomy: *the link between economy and ecosystem, renewable resources, biotechnologies, sustainable development, circular economy, integrated systems, industrial ecology*.

The bioeconomy is part of what is generally called “green economy”. Although some economists like Malthus or Schumpeter drew the fundamentals of their theories from the

1. According to the European Directive 2009/28/EC the biomass is «the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste».



study of the natural world, only in the nineties the bioeconomic concepts begin to spread. Thus, the analysis of potential connections between the ecosystem and economic business models (Ayres, 1997), aimed at optimizing the use of available resources, rapidly accelerated as a result of the common perception of the deterioration of the environment. On the other side, the development of a new science came along with a more active involvement of governments and international institutions, especially the European Union, and a stronger awareness that there is no industrial growth without environmental preservation.

Despite the general assumption taken from the mainstream theories that natural resources were available with no limits nor costs (including energy that had the essence of the uncontrolled growth in the last 50 years), the first oil crises in 1973 and 1979 mark the beginning of a new era. Soon, the paradigm underpinning the fast pace to capitalism and industrialization becomes a matter of discussion among scientists. Energy shortages, climate change, pollution, natural disasters and struggles for survival in developing countries: it is now clear that the planet is no longer a place of inexhaustible resources nor our economic system can go further on without reconsidering a new model of development. The bioeconomy aims at designing a new sustainable approach.

On this purpose, in 1993 the White Paper of the European Commission (EC) suggests a greater role of biotechnology research in favour of economic growth. The same does the Lisbon Agenda in 2000. Finally, the European Union officially launched the concept “bioeconomy”, also known as “bio-based economy” or “Knowledge-Based Bio-Economy (KBBE)” during two international conferences in 2005 and 2007, respectively.

Several interpretations and definitions have been given starting from the pioneering works of Georgescu-Roegen focused on the concept of both entropy, as a measure of the energy not available (“chaos”), and “economic process” deemed as a chain of activities leading to irreversible depletion of raw materials and energy (Bonaiuti, 2003). As for the interpretation by the international institutions, the European Union defines the bioeconomy as the production of renewable bio-resources and subsequent conversion into food, feed, organic products and bio-energy through innovative processes started by the biotechnology industry<sup>2</sup>. In the same way, the OECD stresses rather biotechnology as the main driver for the bioeconomy, which is basically deemed as the study of renewable cells finalized to sustainable development<sup>3</sup>. Finally, in the Blueprint signed by the Obama Administration, bioeconomy refers more generally to Research and Development (R&D) in the biological sciences that brings about economic development and public benefits<sup>4</sup>.

However, there is a substantial difference between definitions which refer to specific characteristics of the bioeconomy and broader definitions that tend to enclose different aspects of this applied science through a more flexible approach. De facto, by considering bioeconomy mainly as the application of new biotechnologies (such as the OECD approach shows) leaving behind the concept of “recovery”, we might not detect its main

2. European Commission, *Innovating for Sustainable Growth: A Bioeconomy for Europe* and European Commission, *The European Bioeconomy in 2030*.
3. OECD, *The Bioeconomy to 2030. Designing a policy agenda. Main findings and policy conclusions*, 2009.
4. The White House, *National Bioeconomy Blueprint*, 2012.

benefits. Therefore, the concept of bioeconomy ought to be linked to the one of sustainable development which is the main long-term objective of all policies and technological innovations stemming from bioeconomy approaches.

It is widely recognized that biotechnologies are a key contribution of this science and must be supported by national and international policies, as well as the biorefineries, which turn into bio-based products discarded material from cultivations, biomass and even algae (McCormick and Kautto, 2013). Nonetheless, their promotion might be useless or even counterproductive when implemented beyond a “re-use” perspective and environmental considerations. A valid example of such a partial approach to bioeconomy is given by the diffusion of crops based on genetically engineered seeds or crops that take away land from indigenous plant species to establish the production of products generally named biodegradable and eco-friendly (such as palm oil plantations in Indonesia at the expense of local forests).

Thus the bioeconomy assumes added value when linked to the concept of circular economy, which refers to “an economy that is regenerative by design” according to the definition of the Ellen MacArthur Foundation. In a circular economy, biological materials can be reintegrated in the ecosystem whereas “technical materials, designed to circulate with minimal loss of quality, in turn entrain the shift towards an economy ultimately powered by renewable energy” (Ellen MacArthur Foundation). So bioeconomy is basically the production of bio-based products from organics, but it entails an important mechanism of re-use and regeneration as well.

In this framework, it is worth spending a few words on the so-called integrated systems, which allow to achieve more efficient results starting from the application of bioeconomy models. An integrated system is a set of relationships in which different actors from diverse economic sectors interact through cause-and-effect forces coming from upstream processes. With specific reference to the agricultural and industrial production processes, integrated systems arising from bioeconomy applications may imply lower costs of production and fewer resources due to the recovery of waste. Such a mechanism can easily represent an efficient reaction to the current challenges of the globalized world.

Integrated systems are at the basis of industrial symbiosis consisting in «place-based exchanges among different entities» that allow the whole community of subjects to gain advantages while sharing resources (Chertow, 2000). The term “symbiosis” in biology refers to the sharing of living conditions of two organisms, which implies a material exchange and mutual benefits. Industrial symbiosis models tend to reproduce the ideal III-type cycle where the waste from a process is re-used as a resource in another process. Industrial symbiosis lies on the concept of industrial ecology and it is the main output of related studies. The key factor of this functioning is the collaboration between all the entities involved in the system and the geographical proximity that facilitates synergies and decreases transport costs. It is a successful model, a response to the new needs of firms and a way to face several environmental issues. Industrial symbiosis is undoubtedly the best way of establishing a bioeconomy mechanism since these kinds of models tend to reproduce in reality the ideal closed-loop cycle where the waste from an industrial process is re-used as a resource in another industrial process.

De facto, the model of an “integrated system” maximizes resources optimization deriving from bio-based strategies. As Ganapini notes (Ganapini, 2013), «the law of conservation of matter states that the latter can be neither created nor destroyed by humans, but it can only be transformed». Thus, production waste does not vanish but remains in the environment causing pollution, lack of balance to the ecosystem and other pathologies; waste reduction and management is one of the main objectives of bioeconomy.

What are the main applications of bioeconomy in the real world? Bioeconomy involves a large number of industries from the primary and secondary sector: agriculture, forestry, floriculture, fisheries and aquaculture, as well as the food&beverage, chemical, textile, paper, wood, pharmaceutical, energy industries, and many more. Relevant is the “cascade” effect of bioeconomy – mainly related to research-intensive sectors, such as chemicals and pharmaceuticals – from which positive effects ensue that can affect also *labour-intensive* sectors, such as textiles or paper.

By implementing international policies and establishing national rules and programmes supporting the development of bioeconomy initiatives, more space will be created for a green production, with less waste for a healthier environment.

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# Territorial marketing, green marketing, industrial areas

*Marino Cavallo*

## INTRODUCTION

Even if the economic crisis has destroyed a large part of the global wealth and many economic assets, it also swept away some well-established business behaviours of economic actors in the most important countries. In fact, the economic crisis has also raised the possibility of investing in ecology and in environmental protection.

A new paradigm is becoming more and more important: it puts in connection environment, social security and innovative development. Now it is time to review the priorities and to set out the conditions for a new type of economic pattern, closely intertwined with the surrounding environment. This can be summarized in the concept of green economy.

This is the definition provided by UNEP: «Green economy [...] results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest expression, a green economy is low-carbon, resource efficient, and socially inclusive»<sup>1</sup>.

The relationship between sustainability and green economy is not a relationship where a new concept replaces a previous one. As deeply clarified by UNEP: «The concept of a “green economy” does not replace sustainable development, but there is now a growing recognition that achieving sustainability rests almost entirely on getting the economy right. Decades of creating new wealth through a “brown economy” model have not substantially addressed social marginalization and resource depletion, and we are still far from delivering to the Millennium Development Goals. Sustainability is still a vital long-term goal, but we must work on greening the economy to get us there. To make the transition to a green economy, specific enabling conditions will be required. These enabling conditions consist of the backdrop of national regulations, policies, subsidies and incentives, and international market and legal infrastructure and trade and aid protocols. At present, enabling conditions are heavily weighted towards, and encourage, the prevailing brown economy, which, inter alia, depends excessively on fossil fuel energy»<sup>2</sup>. Green innovation may bring important opportunities for empowering territorial systems and productive fabrics such as job vacancies, start-ups, synergies among economic actors and public bodies.

1. [http://www.unep.org/greeneconomy/portals/88/documents/ger/GER\\_synthesis\\_en.pdf](http://www.unep.org/greeneconomy/portals/88/documents/ger/GER_synthesis_en.pdf).

2. *Ibidem*.

This essay is aimed at describing how the transition to a sustainable and innovative development may represent an opportunity for reinforcing the economic fabric and should be supported by specific communication tools leading to green marketing. Furthermore, this essay will point out how turning to a green economic pattern and adopting green marketing tools may be a lever for promoting the whole territorial capital in the framework of sustainable and green innovation. In this respect, this essay will highlight how the role of the policy level is crucial because of their territorial programming powers and how eco-industrial parks can be a driver both for sustainable development and territorial empowerment.

In order to translate these principles into concrete actions and tools for economic development, it is necessary to measure the progress towards a green economy and to assess the contribution of the green economy to economic development<sup>3</sup> and its impact on communication strategies.

#### FROM GREEN ECONOMY TO BLUE ECONOMY

Rethinking economics with a green perspective has led Gunter Pauli to propose some suggestive analysis on the current situation. From his point of view, the economic crisis can provide an opportunity for an effective review of the mechanisms underlying the profit of companies and organizations. Instead of aiming at increasingly small profit margins, which require abnormal economies of scale to provide sufficient earnings, it is much better to invest in quality and innovation.

It is crucial to invest in the proper use of natural resources and in the assessment of the environmental impact due to production and industry. The economy of depletion is called by Pauli *red economy*. The concept suggests the idea of a failed system, with respect both to financial results and to outcomes in terms of environmental and social impact. The potential of the green economy has been described above, but there are margins for improvement also in this case. According to Pauli, the green economy actually asks enterprises and consumers to spend more to preserve the environment or it requires substantial investments to improve manufacturing processes or to convert pollutants. On the other hand, it is clear how difficult it is to ask, especially in times of crisis, to pay more for more sustainable and environmentally friendly products and services.

Actual discontinuity, Pauli says, is represented by “blue economy”: a new form of economy based on the same principles by which natural ecosystems operate. Blue economy aims not only to preserve the environment, but also to regenerate it ensuring the possibility of evolutionary paths of the ecosystems and a constant flow of creativity, adaptability and abundance of nature.

The principles of this new economy refer to the conceptual models developed several years ago by economists such as Nicholas Georgescu-Roegen and Herman Daly. Georgescu-Roegen, for example, has tried to introduce the principles of thermodynamics in the laws regulating the economy (Georgescu Roegen, 1975). In particular, he fo-

3. Cavallo M., Degli Esposti P., Konstantinou K. (edited by) (2012), *Handbook of Green Communication and Marketing*, Franco Angeli, Milano, p. 42.

cused his attention on the second law of thermodynamics, which shows the inevitable degradation of the energy used in processes and activities involving the exchange and the use of energy. Energy is not conserved, but it is rather incessantly consumed: this is why it is necessary to carefully assess the final energy balance of any energy-consuming application. In the footsteps of this approach, the American economist Herman Daly highlighted the need to plan the levels of economic growth capable of maintaining the whole system in a steady state. This implies a careful planning of the exploitation of resources and of the benefits arising from industrial development and production.

GREEN MARKETING AND TERRITORIAL MARKETING:  
AN ALLIANCE FOR EMPOWERING THE TERRITORIAL CAPITAL

The positive impact of rethinking economics with a green perspective has to be highlighted by specific communication strategies leading to green marketing.

Green marketing is a strategic mix-up of different components to be managed, such as: know-how and actions to operate in the eco-market; managerial and commercial plans to minimize the environmental impact of productive activities; matching green demand and green offer; research and development of competences for the promotion of green products and green services; planning of actions to maximize the opportunities of the green market and to enable the environmental goals to be achieved.

With respect to the aim of this paper, it is worth highlighting that green marketing shares many fields of intervention with territorial marketing: as a matter of fact, to promote in a sustainable perspective tangible and intangible capitals of an industrial area means to promote the competitiveness of the overall territorial supply. The territorial supply can be considered as the complex of tangible and intangible components characterizing the territory they are placed in and, at the same time, affected by the territory.

The marketing of the territory is a function that contributes to the balanced development of the area through the design and implementation of an interpretation of the spatial features in terms of identified segments of supply that meets current and potential demand; this satisfaction is achieved through the creation of a net positive value (Caroli, 1999).

Another definition of territorial marketing is more oriented to capture dynamic and relational features between the actors of the territorial marketing process. According to this definition, territorial marketing is aimed at maintaining and strengthening positive relations with local stakeholders (internal territorial marketing) and with external audiences (external territorial marketing). The main objective is to increase the value of the territory and its economic attractiveness, by activating a virtuous circle of satisfaction-attractiveness-value<sup>4</sup>.

Green marketing and territorial marketing can establish an alliance as a lever for territorial competitiveness. The unstable and competitive economic scenario of the last decades has made socio-economic players aware of the importance of marketing both for attracting new investments and for retaining established businesses that might con-

4. Valdani, E., Ancarani, F. (edited by) (2000), *Strategie di marketing del territorio*, Egea, Milano.

sider alternative locations (e.g. countries offering cost savings and production factors or incentives and tax relief for promoting development and industrialization).

According to the analysis proposed by Matteo Caroli, territorial competitiveness determines a sort of virtuous circle, where contextual local conditions (availability of financial resources, know-how, skills, infrastructure and intangible assets) generate real competitive advantages for the firms located in that territory. The last step is the production of the value created by local companies for the benefit of that territory. In fact, the relationship between companies and territory results in net benefits for local institutions, so that they can count on more and better resources – which can be reinvested by starting a positive circle and mutual interactions between the local context and the existing production system (Caroli, 2011)<sup>5</sup>.

#### THE ROLE OF THE POLICY LEVEL IN GREEN TERRITORIAL MARKETING

In the last years the concept of “green economy” has become part of the mainstreaming policy discourse. The recent attraction for the issues dealing with green economy has been affected by «widespread disillusionment with our prevailing economic paradigm, emanating from the many concurrent crises and market failures experienced during the very first decade of the new millennium, including especially the financial and economic crisis of 2008. Governments are more and more committed to levelling the playing field for greener products by phasing out antiquated subsidies, reforming policies and providing new incentives, strengthening market infrastructure and market-based mechanisms, redirecting public investment, and greening public procurement»<sup>6</sup>.

In this framework, much attention is being focused on enhancing the role of European Regions and macro-regions as central actors in international and global competition. Globalization has brought – according to Sergio Zucchetti – a sort of polarization of the impact on economy. On the one hand, the challenge is more and more similar to a match between some sets of firms, regions, and production systems. On the other hand, the free flow of ideas, financial capital and goods required national and local bodies to give powers to transnational regulatory bodies, and to entities more extended than a specific area (Zucchetti, 2008)<sup>7</sup>. “Europe of regions” well summarizes these opposite thrusts. The competitive project to invest in territorial marketing actions should take sustainability as a value capable of integrating all the instances governing the relationship between marketing and development. In particular, this project should keep together economic competitiveness, social capital (and the common goods that feed it), and environmental sustainability of economic choices (which implies the ability not to jeopardize future initiatives with a strong impact on the ecosystem).

5. Cavallo M., Degli Esposti P., Konstantinou K. (edited by) (2012), *Handbook of Green Communication and Marketing*, Franco Angeli, Milano, p. 48.

6. [http://www.unep.org/greeneconomy/portals/88/documents/get/GER\\_synthesis\\_en.pdf](http://www.unep.org/greeneconomy/portals/88/documents/get/GER_synthesis_en.pdf).

7. Cavallo M., Degli Esposti P., Konstantinou K. (edited by) (2012), *Handbook of Green Communication and Marketing*, Franco Angeli, Milano.



As for the local policy level, adequate public policies and careful planning by local authorities become key factors for the enhancement and diffusion of green marketing plans to be applied to local territorial systems and to local industrial areas.

On the basis of the perspective described above, it is increasingly clear that the key for successfully attracting investments largely depends on the identification of the optimal level of targeted marketing policies. As a matter of fact, there is a very strict connection between local economic development and green territorial marketing: enhancing the territorial system can actually be a strategy against crisis and can represent an added value in the competition among territories.

There are many examples of national, regional, area-wide, and local marketing and it is worth noting that regional levels have a wide variety of experiences, and. The need for marketing-oriented regional policies is probably due to the high level of integration required to carry out incisive actions for territorial promotion.

According to Caroli, determinants of attractiveness include tangible, material capital, intellectual capital, and policies for development. The first category includes the geographic location, the topography of the area, and the environmental conditions in a broad sense. The second category includes the social and economic infrastructures, the productive resources essential for companies localized in the area, and the local business system. In the third category there are elements taking an increasing importance: social capital, spread skills, well-established vocation and corporate image. Finally, we have to mention policies dealing not only with rules and regulations but also with procedures for the use of public goods and services with benefit for territory and business.

In the current situation it is indispensable to understand the evolution of the concept of territorial attractiveness and to focus on factors determining success in close challenge and global competition between different areas. From this point of view, local and regional marketing policies offer a strategic, coherent and integrated support for an efficient use of public resources, for the development of public-private partnerships in management and supply of services, for product innovation, and organizational strengthening of local business.

#### ECO-INDUSTRIAL PARKS: FROM THE TECHNICAL FEATURES TO THE STRATEGIC GREEN POTENTIALITIES

Eco-industrial parks may play a very active role in empowering a green approach to development and sustainable growth.

The close relationship between blue economy and innovative design of eco-industrial parks is embodied in some shared principles that are borrowed from biomimetics. Biomimetics derives from the observation of the behaviour of ecosystems, the closure of cycles in the use of resources, the integration of material and energy flows in order to encourage the reduction of waste.

Some of the main features of eco-industrial parks are the following: the planning of energy exchanges within industrial areas and between production units located in the park; the use of devices and systems to minimize the consumption of energy and raw materials; the reduction of waste materials; the establishment of relationships that

can simultaneously improve the social, economic and environmental contexts in which businesses are located. The main characteristic of an eco-industrial park is the presence of symbiotic processes to create a sort of “bridge”, or at least very strong analogies with biomimicry.

Eco-industrial parks aim at closing cycles and maximizing the efficiency of materials used in production processes. The implementation of eco-industrial parks may be favoured by some priority actions. Planning eco-parks requires highlighting managerial conveniences and competitive advantages for companies who decide to settle in eco-parks. An eco-park can save resources because there are common shared services; it can also improve efficiency because of innovative solutions and economies of scale. Other points of strength are: propensity to network, to be able to share the results of innovation, to create networks of exchange that can improve the flow of materials, energy, and information.

Apart from technical features and from technical requirements, eco-industrial parks may play a strategic role for the whole territorial development not only from the environmental point of view but also in more general terms. In order to develop this potential, the role of green marketing and territorial marketing is crucial.

#### GREEN MARKETING FOR INDUSTRIAL AREAS

Until now green marketing has been limited to the identification of strategies and actions necessary to make a company (or a group of companies) more attentive to environmental issues. This involves monitoring the effects of waste, scrap, and lead emissions on the surrounding environment to search for appropriate solutions to improve the relationship between business and environment. Other companies are now working meticulously on product features in terms of packaging, life cycle of materials, certification of subcontracting chain, and sourcing of resources and raw materials. Finally, there are management tools and management processes that enable companies to improve their energy efficiency, reducing emissions or harmful materials, and optimizing the distribution and logistics associated with the introduction of a product on the final market (Foglio 2008).

Consistent with these approaches, increasing importance has been taken on over time by eco-labels, environmental quality labels and certified environmental management systems, based on similar systems that have met great success in the field of total quality and certification of supply chains.

These systems have not reached the same level of coverage and dissemination as quality management systems. While being adaptable to different industrial instruments, the labels ISO 14001 and EMAS spread only partially in small and medium enterprises. There are many reasons for this and many researchers agree on a common interpretation of this issue. These management systems are expensive and require highly specialized structures, dedicated organizational units, a business database and complex management software. These investments can be hardly afforded by small businesses (Cariani, Cavallo, 2009).

An increasing attention to green issues is crucial in the analysis by John Grant, which offers a real “Green Marketing Manifesto”. This can disrupt established habits and deeply

change all the attitudes tending to oppose economic profit, business and budget to sustainability and environmental sensitivity. On the contrary, in the approach proposed by Grant, green marketing becomes a real opportunity that can change visions and attitudes driving the choices of individuals and social groups. The matrix he proposes lines up the steps that companies can follow: from greener and greener behaviour. In terms of concrete actions this means to mark the difference between an occasional good example and an innovative, ambitious and challenging new business concept, which incorporates values of green marketing in the very nature of new products and services (Grant, 2009).

However, all these observations have been developed for individual organizations, or at least for large companies that manage brands and product lines differentiated per sector or commodity.

Eco-industrial parks may be an occasion to develop green marketing tools and methods oriented to industrial areas and clusters that may be adopted by economic bodies involved in local development.

Below we will briefly provide some contents that have to be included in the marketing plan of an eco-industrial park. Each production area should adapt them to its own context and to the type of firms that are already settled in the area or that they want to attract. The analysis of competitors can be achieved by performing benchmarking studies through a set of indicators divided into the following categories: local structural characteristics, characteristics of environmental management, research and innovation activities, green marketing and communication activities undertaken to promote the opportunities available in the area.

This comparison can provide very useful suggestions on the placement of a new area and on the package of services to develop<sup>8</sup>.

As explained in the *Handbook of Green Communication and Marketing* developed within the European Med project Ecomark, the operational components of a marketing plan should be aimed primarily at developing the key areas of an eco-industrial park: urban and territorial area, environmental area, socio-economic area, and service management area. The marketing strategy should highlight the points of strength of each one of these areas in order to improve the positioning of the eco-industrial park with respect to its competitors and to make it more suitable for new investments by companies or for the expansion of existing companies.

The set of services provided by an industrial area is the actual field where the competition with other regional systems can be won thanks to the quality and value of the services provided in comparison with other areas. Furthermore, providing a specific type of service can support the positioning of the industrial area with respect to its competitors and it can be a lever for the promotion of the area.

In this competition among territories, regions and local systems, it is worth investing in the creation of a “territorial brand” in order to communicate the specific vocation of the territory and its excellence. The environmental quality can be a strategic compo-

8. Example of international benchmarking developed within the European project “Ecomark”: [www.ecomarkproject.eu](http://www.ecomarkproject.eu).

ment of this territorial brand because of its consistency with the growing demand for sustainable products and services that can be applied also to territorial marketing strategies.

In promotional and communication activities it is essential to divide targets into established firms (brownfield) and businesses to be attracted from scratch (greenfield). Promotional activities involve (new) media campaigns, and detailed planning of specific actions aimed at different segments (for example developers, trade associations, business groups, business consultants, etc.). A “red thread” for the communication of territorial identity can be achieved through a “concept”, made of logos and messages to be repeated over time in order to create a cognitive and conceptual framework. This conceptual red thread should be recognizable in a rapid and intuitive way. As a branded product, which becomes uniquely identifiable by a brand, each area should aim at creating an actual brand integrating territorial features and values to attract businesses, investors and talents to a specific industrial area<sup>9</sup>.

#### CONCLUSION

The green marketing marketing applied to productive areas is a still largely unexplored theme. While there are many experiences in the field of marketing for green products and services, there are few proposals for green marketing targeted to areas, territories and industrial parks. Anyway, the local development and competitiveness of the European countries in the coming years will depend more and more on the capacity of these areas to offer innovative services to businesses.

The European regions of the Mediterranean area can effectively intercept the demand for a high quality of life and a high environmental quality, that are becoming increasingly important social themes, and they can use these common needs to effectively promote their industrial areas. As in the past there were forms of green supply chain in production, today it is essential to focus on optimizing tangible and intangible exchanges between companies, by applying industrial symbiosis at the national level.

The principles of biomimicry and closing cycles of resource use in the productive areas may represent factors of innovation and efficiency, and can minimize waste and adverse impacts on the environment. These approaches can become a lever also for promoting the whole territory: it is time to invest in local marketing and to integrate the promotion of industrial districts, production chains, and clusters with the promotion of the so-called “territorial brand”.

On this basis, , new territorial marketing tools can be implemented, by paying particular attention to sustainability, environmental quality, and urban development, to provide innovative services for businesses and to consistently audit business needs.

These will be the terms of the challenge for future developments which will be made of intersections between innovation, effective management of resources, expertise and know-how.

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# Green marketing for the promotion and growth of sustainable industrial areas

*Marino Cavallo, Valeria Stacchini*

## BACKGROUNDS: FROM RED, TO GREEN AND BLUE ECONOMY

In this period of economic hardship, we must find new directions to orient the development and innovation of the production system. A new vision of the world is possible, provided that we are ready to abandon old habits to embrace new ones, as the economist Gunter Pauli (2010) wrote. Instead of delivering a terrible debt to future generations, that is the result of financialization and dematerialization of the real economy, it is much better to invest in the proper use of natural resources and in the assessment of the environmental impact due to production and industry. The economy of depletion is called by Pauli red economy. The concept suggests the idea of a failed system, with respect both to financial results and to outcomes in terms of environmental and social impact.

It is no coincidence that UNEP, the UN agency dealing with the environment, has recently produced a relevant study on prospects and development of economic activities concerning environment and ecology. In this study the new green economy is put in relation with the ability to intervene in a meaningful way on the poverty and the imbalances exacerbated by economic globalization (UNEP, 2011). It is time to review the priorities and come up with a future based on another type of economy, closely intertwined with the surrounding environment, that is to say a green economy.

Gunter Pauli goes a step further by introducing the concept of blue economy: a new form of economy based on the same principles by which natural ecosystems operate. Blue economy aims not only to preserve the environment, but also to regenerate it.

## ECO-INDUSTRIAL PARKS AS TESTING GROUND

In recent years the need to restructure production areas, to link them to urban and territorial structures in a harmonious way and to rationally and effectively use areas and territory has become increasingly urgent. Lowe and Evans (1995) define the concept of eco-industrial park as «...a community of manufacturing and service firms located together in a common property. Member businesses seek enhanced environmental, economic and social performance through collaboration in managing environmental and resource issues. By working together, the community of businesses seeks a collective benefit that is greater than the sum of individual benefits each company would realize by only optimizing its individual performance». This goal can be achieved by planning and

re-qualifying industrial areas and their infrastructures to reduce pollution and improve symbiotic cooperation and energy efficiency (Lowe, 1997).

Current industrial estates consist of a linear model (extract-consume-dump), where resources and waste are used in an unsustainable and inappropriate way, causing an intense disturbance to natural ecosystem (Valentino & Caroli, 2014). Eco-industrial parks aim at closing cycles and maximizing efficiency of materials used in production processes. This means that waste materials and outputs of a process can become raw materials or can be used in the production cycles of other companies within the area. Even with regard to energy usage, there are sophisticated programming systems that make it possible to balance peak demand of energy by distributing it among the various production units and by setting up smart grids. The result is a sort of life cycle of the production chain, tested on the basis of life cycle assessment (Baldo, Marino, Rossi 2008).

In Northern Europe and in other parts of the world, there have been some significant experiences (Franco, 2005; Cavallo, Stacchini, 2007; Massard et al., 2014). Companies that settle in an eco-industrial park can decrease production costs through an efficient and sustainable use of materials, energy and waste. They can achieve extra income through the sale of waste material as input for other firms (Lowe and Evans, 1995; Mouzakitis et al., 2003). Operational costs related to infrastructures and facilities (used for production and energy supply, treatment of water, logistics, etc.) are shared by all participants at the park (Lowe, 2001). Interactions among firms improve the possibility to solve common problems and to spread knowledge, information, and innovation.

At the local community level, eco-parks make the area more liveable, reducing pollution, congestion and noise. The eco-industrial development may lead to additional employment and capital investment, and improve the visibility of the area, pushing national and international firms to relocate into the park to get knowledge spillover effects (Valentino & Caroli, 2014).

According to the international survey carried out by Sofies (Massard et al., 2014), analysing 168 eco-innovation parks detailed for 27 countries, the success factors can be summarized in the following points:

- direct business interests of companies in reducing expenses and/or increasing profit by implementing synergies;
- strong involvement of the local authorities, action trough policy, regulatory framework and incentives;
- effective coordination body (e.g. trust companies in charge of the coordination and services for stakeholders, like environmental services, risk analysis, information and training, marketing and communication, help for getting permits): openness, communication and mutual trust are of major importance for inter-firm collaborations;
- access to advanced technologies and knowledge through cooperation with academia and research institutes;
- location and infrastructures (being close to major conurbations/cities or near specific resource extraction or importation sites is an asset);
- diversity of local economics activities that increases the opportunities to create new sets of feedback flows;



- clear commitment, clear definition and differentiation from other parks as far as marketing and communication standards are concerned.

#### TERRITORIAL MARKETING OF SUSTAINABILITY

The unstable and competitive economic scenario of the last decades has made socio-economic players aware of the importance of marketing both for attracting new investments and for retaining established businesses that might consider alternative locations (e.g. countries offering cost savings and production factors or incentives and tax relief for promoting development and industrialization). Some of the most comprehensive and articulated definitions of territorial marketing are the following ones: «The marketing of territory is a function that contributes to a balanced territorial development, through designing and implementing an interpretation of spatial features as a supply that meets identified segments of current and potential demand; this satisfaction is achieved by creating a positive net value» (Caroli, 2006). The definition below is more oriented to capture dynamic and relational features between the actors of the territorial marketing process: «Local marketing refers to the needs of stakeholder/customer/market and it is aimed at maintaining and strengthening advantageous relationships and exchanges with stakeholders (internal territorial marketing) and with external audiences (external territorial marketing). The main objective is to increase the value of territory and its economic attractiveness, by activating a virtuous circle of satisfaction-attractiveness-value» (Valdani, Ancarani, 2000).

According to the analysis proposed by Matteo Caroli, territorial competitiveness determines a sort of virtuous circle, where contextual local conditions (availability of financial resources, know-how, skills, infrastructures and intangible assets) generate real competitive advantages for the firms located in that territory. The last step is the production of the value created by local companies for the benefit of that territory. The relationship between companies and territory results in net benefits for local institutions, so that they can count on more and better resources – which can be reinvested by starting a positive circle and mutual interactions between the local context and the existing production system (Caroli, 2011).

It is increasingly clear that the key for successfully attracting investments largely depends on the identification of the optimal level of targeted marketing policies. There are many examples of local, regional, wide-area, and national marketing plans. The optimal level is never fixed once and for all, but it may be put in connection with the type of investments and challenges ahead. The recent strong push for marketing-oriented regional policies is probably due to the high level of integration required to carry out incisive actions for territorial promotion.

According to Caroli, the determinants of attractiveness include tangible, material capital, intellectual capital, and policies for development. The first category includes geographic location, topography of the area, and environmental conditions in a broad sense. The second category includes social and economic infrastructures, productive resources essential for companies localized in the area, and local business system. In the third category there are elements taking an increasing importance: social capital, spread skills, well-



established vocation and corporate image. Finally, we have to mention policies dealing not only with rules and regulations but also with procedures for the use of public goods and services with benefit for territory and business (Caroli, 2011, pp. 29-30).

In the current situation it is indispensable to understand the evolution of the concept of territorial attractiveness and to focus on factors determining success in close challenge and global competition between different areas. From this point of view, local and regional marketing policies offer a strategic, coherent and integrated support for an efficient use of public resources, for the development of public-private partnerships in management and supply of services, for product innovation, and organizational strengthening of local business.

It is here that incentive levers, simplifications, and interventions on supply chains identify a unified and systematic context for practical application. The strategic planning of the European Union has contributed to increasing the relevance of regional marketing policies. Indeed, the European Union is focusing on enhancing the role of European Regions and macro-regions in international and global competition. Globalization has brought – according to Sergio Zucchetti – a sort of polarization of the impact on economy. On the one hand, the challenge is more and more similar to a match between some sets of firms, regions, and production systems. On the other hand, the free flow of ideas, financial capital and goods required national and local bodies to give powers to transnational regulatory bodies, and to entities more extended than a specific area (Zucchetti, 2008). “Europe of regions” well summarizes these opposite thrusts. In the phases of development and growth these dichotomies are offset and complement each other. In the phases of recession and crisis it becomes much more difficult to hold together competing demands and conflicting trends between different levels of territorial governance.

A cautious optimism about the prospects for Europe’s attractiveness comes from Ernst & Young’s annual report on the global competitive position of our continent. Benchmarking on a global scale shows that Europe should focus on digital and green economy, on a favourable fiscal environment, on attractive and sustainable cities, on industrial areas planned and built as eco-parks, and on qualified training bodies. Whilst China is the most quoted area as listed by potential investors (38% of choices), Europe remains firmly in second place with 35% of votes. The main reasons for companies to settle are: logistics infrastructures (63%) and analysis of communication infrastructure (62%). Stability and transparency of policy, as well as legislative and regulatory conditions are top priorities for a company that decides to undertake a process of settlement in another part of the world.

#### GREEN MARKETING FOR INDUSTRIAL AREAS

Until now, green marketing has been limited to the identification of target areas and actions necessary to make a company (or a group of companies) more attentive to environmental issues. This involves monitoring the effects of waste, scrap, and lead emissions on the surrounding environment to search for appropriate solutions to improve the relationship between business and environment. Other companies are now working meticulously on product features in terms of packaging, life cycle of materials, certifica-

tion of subcontracting chain, and sourcing of resources and raw materials. Finally, there are management tools and management processes that enable companies to improve their energy efficiency, reducing emissions or harmful materials, and optimizing the distribution and logistics associated with the introduction of a product on the final market (Foglio 2008).

Consistent with these approaches, increasing importance has been taken on over time by eco-labels, environmental quality labels and certified environmental management systems, based on similar systems that have met great success in the field of total quality and certification of supply chains.

These systems have not reached the level of coverage and dissemination of quality management systems. While being adaptable to different industrial instruments, the labels ISO 14001 and EMAS spread only partially in small and medium enterprises. There are many reasons for this and many researchers agree on a common interpretation of this issue. These management systems are expensive and require highly specialized structures, dedicated organizational units, a business database and complex management software. These investments can be hardly afforded by small businesses (Cariani, Cavallo, 2009). Given these investments, the economic returns seem uncertain and difficult to be quantified.

That is why green communication has recently become an essential marketing and competitive tool for positioning. If a company and a product are green, they should communicate it with strength to their customers and to their target market. So, specific green marketing strategies have gradually emerged, which are based on effective actions to respond to the needs of eco-consumers, on the development of commercial and management projects to reduce the environmental impact of production, and on the improvement of tools to bring together green supply and green demand.

At the same time, research and development initiatives have been launched with the specific aim of developing skills for the enhancement and the promotion of eco-products and eco-services. Moreover, specific measures have been taken to maximize the opportunities of the green market.

Paying increasing attention to green issues is crucial according to John Grant, whose analysis offers a real "Green Marketing Manifesto". This can disrupt established habits and deeply change the tendency to oppose economic profit, business and budget to sustainability and environmental sensitivity. On the contrary, in the approach proposed by Grant, green marketing becomes a real opportunity that can change visions and attitudes driving the choices of individuals and social groups. The matrix he proposes lines up the steps that companies can follow: "from greener and greener behaviour". In terms of concrete actions, this means to mark the difference between an occasional good example and an innovative, ambitious and challenging new business concept, which incorporates the values of green marketing in the very nature of new products and services (Grant 2009).

However, all these observations have been developed for individual organizations, or at least for large companies that manage brands and product lines differentiated per sector or commodity. It would be still rather premature to introduce a green marketing

methodology that requires specific local measures and the collaboration of social, economic and institutional actors. These actors collectively contribute to a local economic development strategy or policy based on vocations and attractiveness of production systems. In this respect, eco-industrial parks may represent an interesting laboratory to develop green marketing tools and methods that are area/cluster-oriented and can be put at disposal of economic entities involved in local development programmes.

#### GUIDELINES FOR A MARKETING PLAN

The marketing plan is a fundamental tool for the implementation of market policies and strategies. It includes all the essential information necessary to transpose decisions and choices into concrete actions and work programmes in order to achieve specific and verifiable objectives. Similarly, a marketing plan pools all the energies in a territory and all the economic players affected by the actions undertaken to enhance the territorial and local attractiveness. The territorial marketing partially relies on the same tools and methods used to market products and services. However, it also requires some specific methods to adapt business concepts to local contexts.

A marketing proposal for a production area that wants to stand out as an eco-industrial park should include the following basic elements:

- vision and strategic aims
- competition analysis;
- positioning analysis;
- market analysis;
- strategic positioning
- operational components of the marketing plan;
- mix of services;
- description of one or more distinctive services;
- main promotion and communication activities.

Below, we will briefly provide some contents that have to be included in the marketing plan of an eco-industrial park. Clearly, each production area should adapt them to its own context and to the type of firms that are already settled in that area or that they wish to attract.

The first step is to define the vision (the eco-industrial park is presented as a “community” working together to create shared values for the firms involved and the local players) and, accordingly, the strategic aims: to achieve the best environmental and competitive standards, to identify the firms to be attracted that could have a positive impact on the sustainable development of the area, to develop symbiotic relations.

The analysis of competitors can be achieved by performing benchmarking studies through a set of indicators divided into the following categories: local structural characteristics, characteristics of environmental management, research and innovation activities, green marketing and communication activities performed to promote the op-

portunities available in the area. This comparison can provide very useful suggestions on the placement of a new area and on the package of services to develop<sup>1</sup>.

The positioning analysis can be based on specific benchmarking tools to identify the most threatening competitors out of different territorial systems. Carrying out a SWOT analysis at regional level can also be interesting and effective. These tools can highlight the opportunities of an industrial area (in terms of incentives, infrastructures, and investments) as well as the actual and potential threats (vulnerable areas, trends of demand, competitors, etc.). However, in order to carry out the SWOT analysis, regional actors should perform an accurate and detailed examination of the strengths and weaknesses of a given production system. This makes it easier to put in place improvement actions or measures to better align local assets with the characteristics of an eco-industrial park<sup>2</sup>.

The market analysis can be performed by applying classical research methods: qualitative survey tools (focus groups, open interviews) and/or a quantitative approach and statistical methods (questionnaires or statistical data). The key areas that should be investigated to detect the needs of a production area or a specified territory include: direct demand targets (potential newcomers and involved firms), indirect demand targets (local stakeholders); structural business characteristics (a summary of the main elements identifying a company or group of companies), and characteristics of the local organization and production (business networks, clusters, productive chains). Furthermore, a part of the survey should be dedicated to elicit opinions and assessments of the services already existing in a production area. When new areas are being planned, a section of the research should be aimed at highlighting the most important services needed to optimize the settlement of businesses and to better support the companies operating in a given territory.

After having gained a thorough understanding of the current positioning, the second step is to move forward and identify the target positioning. Useful tools to this end are cognitive maps that represent the customers' perceptions. Cognitive maps are built as a matrix whose parameters are the main positioning factors of the eco-industrial park. Cognitive maps also feature the competitors' offers. They are also useful to identify unmet needs, as perceived by the customers, that the offer of the eco-industrial park should target.

The results of these analyses should be translated into inputs for the design of services and for the development of infrastructures, public works and utilities. Eco-industrial parks represent a complex "place product"; therefore, the operational components of a marketing plan should be aimed primarily at developing the following key areas: urban and territorial area, environmental area, socio-economic area, and service management area. In each of these areas it is possible to implement improvements and innovations for eco-parks and for territorial competitiveness and attractiveness. Efficient logistics, advanced water treatment and energy management, collective welfare services for work-

1. Example of international benchmarking developed within the European project "Ecomark": [www.ecomarkproject.eu](http://www.ecomarkproject.eu).
2. Example of SWOT analysis developed within the European project "Ecomark": [www.ecomarkproject.eu](http://www.ecomarkproject.eu).

ers, a single managing body in the area are actual “plus points” that can enhance the positioning of the eco-industrial park, attract new investments by companies and favour the expansion of existing companies. The mix of services offered to an industrial area lies at the heart of the innovative offer made by the industrial park. The competitive challenge with other regional systems can be won by those who are able to provide a higher quality and value compared to other areas. To this end, the mix of services provided by eco-industrial parks can be focused on different fields of action: services for the development of high-quality premises (in particular by upgrading the existing buildings or constructing energy-efficient industrial buildings); services for the development of sustainable mobility (by favouring the collective transport of people and improving the mobility of goods by though IT systems to optimize loads and routes, reduce traffic and CO<sub>2</sub>-emissions); services for energy efficiency (smart energy networks and shared energy infrastructures that can produce energy from renewable sources, which will bring tangible environmental benefits and significantly reduce energy costs). Further services in the waste sector may include carrying out experiments on “waste exchange”, i.e. a symbiotic process in which waste materials resulting from a production process feed other production processes in the area. This can create a virtuous cycle of transformation of secondary materials in raw materials. There are no limits to new ideas and proposals, ranging from the most obvious environmental services (waste treatment, purification, improvement and maintenance of collective green spaces) to highly specialized services such as the creation of specialized training, and welfare for employees. Each eco-industrial park should invest in services that are able to differentiate it from other industrial areas: the design of specific services for the companies settled in the park is one of the levers to be used in a systematic and consistent way for the promotion of the area. These innovative services generate benefits to involved and targeted firms in terms of knowledge and competence transfer, agglomeration economies, social capital, reduction of the energy/water consumption, a lesser bureaucratic burden, improvement of the perceived corporate image and, of course, greater competitiveness.

Pricing policies play a decisive role in operational marketing too. There are two main determinants of price for eco-industrial parks: the cost of the area within the park (development costs, higher planning fees, shared infrastructures, etc.), and the cost of added-value services. Thereby, settlement costs in eco-industrial parks are about 20-25% higher than in other industrial areas. These costs are perceived negatively from potential newcomers, so one of the important aims of the marketing plan is to reduce this negative perception, through the introduction of financial incentives or favourable credit terms for environmental investments, and to highlight the benefits coming from the available infrastructures and services.

Promotion and communication activities of the territory are essential: an eco-industrial park is part of a geographical place, and its attractiveness is influenced by the attractiveness and attributes (material and immaterial) of the place in which it is settled (exogenous factors). In a global, highly competitive scenario, it becomes necessary to create an image of the territory and to communicate its excellence. A positioning based on environmental quality can be successful because the sensitivity to responsible

consumption has expanded in the society, leading to a strong demand for sustainable products and services. The market, even in times of crisis, rewards companies that pay attention to the environmental impacts of their production processes. These trends can be applied also to territorial marketing activities. In promotional and communication activities it is essential to divide targets into established firms (brownfield) and businesses to be attracted from scratch (greenfield). Communication tools are one-to-many (for example advertising, sponsorships, fairs/exhibitions/events, internet), and one-to-one (contact centre and direct one-to-one relations with institutions, authorities, etc.). One-to-one tools are the most effective; however, other promotional activities involving (new) media campaigns, and detailed planning of specific actions aimed at different segments (for example developers, trade associations, business groups, business consultants, etc.) also play an important role. A “red thread” for the communication of territorial identity can be achieved through a “concept” made of logos and messages to be repeated over time in order to create a cognitive and conceptual framework. This conceptual red thread should be recognizable in a rapid and intuitive way. As a branded product, which becomes uniquely identifiable by a brand, each area should aim at creating an actual brand integrating territorial features and values to attract businesses, investors and talents to a specific industrial area.

#### CONCLUSION

It is time to invest in local marketing and to finalize the organization of districts, production chains, and clusters. Economics and ecology should no longer be considered as opposing perspectives and opposite poles, but rather as networks of opportunity and innovation for businesses and production systems. In particular, blue economy, a coherent evolution of green economy, attempts to apply the evolutionary processes of biological systems to industrial production. In this regard, biomimetic processes, which transfer the rules of ecosystems to other fields, are similar to the symbiotic cycles of eco-industrial parks. As a matter of fact, eco-industrial parks aim at creating closed-loop cycles in the use of resources and raw materials. On this basis, new territorial marketing tools can be implemented by paying particular attention to sustainability, environmental quality, and urban development to provide innovative services for businesses and to consistently audit business needs. These will be the terms of the challenge faced by future manufacturing processes, which lie at the intersection between innovation, effective management of resources, expertise, and knowledge applied to natural systems and production systems.

These issues have been stressed in the framework of the MER project (Marketing and Governing Innovative Industrial Areas), a project developed within the European MED Programme, aiming to identify innovative tools to support businesses; these tools may become the economic factors that can enhance the economic appeal of a production area. The MER project paid special attention to fine-tuning operational marketing tools, web platforms for the provision of innovative services, and training tools for the development of the skills required to promote technologically advanced services in support of business networks.

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# Marketing actions for eco-industrial parks

*Alfredo Valentino*

## INTRODUCTION

In the chapter “Eco-industrial Parks: the international state of art” the benchmarking analysis shows the main strengths and weaknesses of the eco-industrial parks (EIPs), considered as the best practices worldwide. One of the main problems is related to their external communication and promotion. These activities are under-developed and sometimes underestimated in eco-industrial parks. Of course, there are many differences between private and public industrial parks, as the benchmarking analysis shows. In private parks, the marketing function is better organized than in public ones. Specific units or directly the EIP managing board are in charge of doing marketing functions. However, these parks can create value if they are able to attract firms and stakeholders. This aim can be achieved only if the industrial park is properly promoted inside and outside its region. The offered infrastructures and services alone cannot be sufficient. They need to be supported by a clear identification of targets and proper marketing strategies. Furthermore, these strategies should be consistent with the marketing approach and the policies implemented by local and regional institutions.

An EIP is a product of a place (a region or a province) and part of its material and immaterial resources. EIPs play an active role in place competition, improving the visibility and the attractiveness of the area in which they are located. At the same time, they create value for the involved firms in terms of social, economic, and environmental performance. This is possible because they are communities where firms and local stakeholders work together sharing resources, competences, services, and infrastructures. The added value lies in the upgrading of the area, the exchange of waste materials, energy, services and competencies, and the use of green infrastructures and technologies. This value needs to be properly communicated. Once this need is understood, the marketing activities are up to the EIP managing board, i.e. the authority in charge of managing the park and its services and infrastructures. In some industrial parks the managing board is not only entrusted with the supervision of the involved firms, but also with the promotion of the park, and the creation of a proper network between firms and local authorities/stakeholders. Sometimes, though rarely, marketing activities are delegated to a specific organizational unit, in charge of promotion and communication initiatives. When the communication and promotion need is not clearly perceived, promotion and communication are left to each single firm that sometimes implements strategic decisions without an overall view.

Empirical analysis, like the above-mentioned benchmarking exercise, has shown the extent to which these activities are underestimated within eco-industrial parks, and yet their implementation and development are essential for their survival. So, it is necessary to identify and select specific units or managers within the organizational structure of the industrial parks and put them in charge of these activities. Moreover, these units or managers should adopt and develop a clear strategic marketing approach. To achieve this aim, they should first and foremost understand the strategic importance of marketing activities and tools. These tools should be used to properly communicate the main attributes of the industrial park and its benefits in terms of performance and value creation. Moreover, they should influence the perception of potential newcomers and push them to choose the park as the best location for their productive activities.

The aim of this chapter is to describe the process and the marketing strategies that industrial parks can implement to enhance their attractiveness. This chapter is divided into two main parts: the first part concerns the methodology to elaborate marketing strategies for EIPs; the second one describes the main contents of an EIP marketing plan.

#### THE RATIONALE BEHIND THE DEFINITION OF A MARKETING STRATEGY FOR ECO-INDUSTRIAL PARKS

In the management literature scholars have shown how strategy is not a rational and ex ante process (Simon, 1991). Mintzberg and Waters (1985) identified three different types of strategy: deliberate, emergent, and realized. A strategy is “deliberate” in its essential and main contents, but it becomes “emergent” in the contents that are closer to business. These considerations are valid especially in the case of eco-industrial parks. The presence of different actors and the complexity of these parks make it really difficult to formulate a comprehensive marketing strategy, which is influenced by the strategies implemented by each actor, but at the same time is not a (more or less complex) synthesis of them.

The starting point is the analysis of the EIP demand and offer to understand the general approach of the EIP marketing strategy. This strategic approach could be summarized in the following phases (Caroli, 2014) (see figure 5):

- Translation of the sustainable development aims into marketing aims;
- Analysis of the EIP demand and competitors;
- Competitive analysis of the EIP offer;
- Identification of the target demand;
- Strategic positioning;
- Definition of the EIP value proposition;
- Definition of the proper operative marketing actions.

This strategic marketing approach serves then as a basis for the identification of the proper operating marketing policies.

The first three phases are related to the definition of the EIP aims in terms of its sustainable development and the in-depth analysis of the EIP demand and offer. Moreover, these prior analyses focus on EIP main competitors, i.e. the industrial parks that offer the same services and attract some customers, satisfying the same needs (Valentino &

Caroli, 2014)<sup>1</sup>. The last phases are strictly related to the identification of the EIP strategic marketing approach and they are the main focus of this chapter.



#### THE IDENTIFICATION OF EIP DEMAND TARGET

After the precise analysis of the EIP offer and potential demand, and the main attributes of local, national and international competitors, the demand target for the eco-industrial park needs to be clearly identified through segmentation. In literature, segmentation means: on the one side, the identification of different demand segments with homogenous attributes; on the other, the strategic choice of the main demand segment (or segments) to address the offer (Caroli, 2014).

Considering eco-industrial parks, there are two main macro-demand targets: potential newcomers and involved firms, which can be considered as the customers of EIPs

1. On this topic see Valentino & Caroli (2014).

(direct demand target), and local stakeholders (indirect demand target). Local stakeholders consider EIPs as an important tool to improve the sustainable development and the attractiveness of their territorial area of competence. Firms or customers view this type of park as the suitable place where to settle their productive activities and find positive conditions to boost their competitive advantage. These two macro demand targets deserve a more careful in-depth analysis.

The potential newcomers and the involved firms can be more deeply segmented according to their main activities and role within the productive value chain, their size (in terms of number of employees and turnover), awareness of sustainable initiatives, and potential role played within the eco-industrial park. Moreover, the strategic choice in terms of direct demand target may differ for existing eco-industrial parks as opposed to new ones. In the first case, potential target firms should have the same attributes as the leader (considering private eco-industrial parks) and/or as the other involved firms to better exploit industrial symbiotic benefits (Valentino & Caroli, 2014). Furthermore, they should share their same strategic and environmental aims and view to work together within an industrial “community”. In new eco-industrial parks, the potential demand target is initially wider and strongly related to the leader or to the aim of the managing board. Of course, potential newcomers must satisfy precise quality standards in terms of low environmental impact of their productive activities, willingness to share knowledge, innovations, infrastructures, and facilities to create shared value<sup>2</sup> within and outside the park.

Local stakeholders, on the other side, look at the environmental and industrial performance of these productive areas and their effects on the sustainability and attractiveness of the place where these parks are located. So, they look at the presence of a competitive and high-quality productive system in the park, the presence of firms with high environmental awareness, the efficient and effective management of local productive and industrial areas, and the reduction of negative industrial effects. They evaluate especially how the EIPs impact on the area in terms of employment rate increase, life quality improvement, and pollution and industrial waste reduction. To achieve these aims, they support financially the development of eco-industrial parks. They finance investments in environmental infrastructures, facilities, and services, and also co-finance marketing programmes to improve the perceived image of the EIP and the competitiveness of the place where EIP is located. Moreover, they can allocate financial incentives and tax breaks to potential newcomers to increase the EIP attractiveness.

#### STRATEGIC POSITIONING

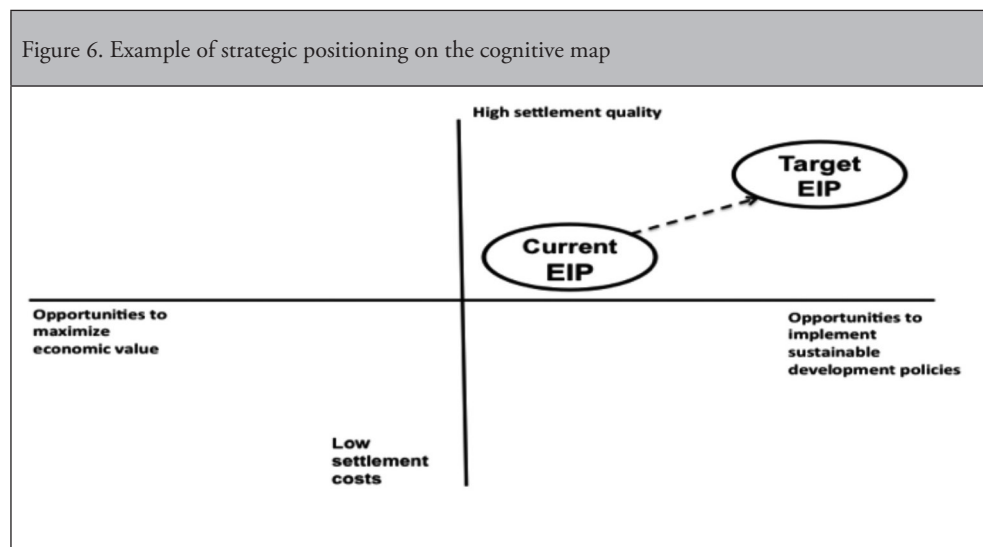
In marketing literature, the strategic positioning of a product or service identifies the place a product or a service has within the customer’s perception compared to its main

2. «The concept of shared value can be defined as policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress» (Porter & Kramer, 2011, p. 66).

competitors. It is the result of the main attributes that differentiate (more or less considerably in the eyes of customers) the product/service from the others within a specific market. So, the strategic positioning is the answer to three different questions: 1. What are the attributes customers look for in a product/service to satisfy their needs? 2. How do customers evaluate these attributes in the product/service provided by competitors? 3. How should the product/service be perceived by customers?

This reasoning can be directly applied to eco-industrial parks, even if the choice of strategic positioning is more complex due to the presence of a large number of actors. In this case, it is possible to identify three main positioning factors. These factors can be summarized in: the high quality of settlement (i.e. the availability of strategic assets to achieve a competitive advantage), the proximity to target markets, and the proximity to the main actors of the production value chain. A useful tool to define the strategic positioning is the cognitive map. This map is built as a matrix, whose parameters are the main positioning factors of the EIP under investigation. Here, the competitors' offers are shown and "empty" spaces in the customers' perception are identified. Through the cognitive map it is possible to identify where the offer of the EIP can be strategically placed.

When the current strategic positioning of an EIP is inadequate, unclear, and questionable, the cognitive map can be used to reposition it. The main challenge for an EIP in defining its new strategic target positioning is to highlight its environmental standards and its willingness to improve firms and place competitiveness as well in a shared value logic (sustainable development for the place and competitive/economic advantages for firms) (Valentino & Caroli, 2014). Furthermore, the rigidity and the reluctance to change of the territorial actors can hinder the strategic repositioning of the park.



To be successful, the strategic positioning has to be consistent with the vision, the characteristics, and the environment of the EIP. Moreover, to make it believable, eco-industrial parks should meet four relevant conditions. They should have:

- A rich portfolio of environmental infrastructures;
- A leading firm within the park;
- A highly competent management team;
- An ambitious strategic plan.

#### DEFINITION OF THE EIP VALUE PROPOSITION

The value proposition explains the reason why the target demand chooses a specific product and is able to pay the required price. Usually, it is a sentence that clearly highlights the sources of the value created for the demand target. It answers the questions: “What are the needs of the target demand that the specific attributes and contents of our offer satisfy?” Looking at the specific case of EIPs, the value proposition explains why customers (potential newcomers and involved firms) should settle and perform their activities in the Eco-industrial park. At the same time, the value proposition should consider the indirect demand target as well. So, it explains also why local stakeholders should support the park development financially and strategically.

According to the definition, a successful value proposition should be based on the analysis of the customers’ needs (in this case the needs of newcomers and involved firms) and of the competitors’ offer. Furthermore, the presence of two different demand targets may require the formulation of two different value propositions.

Regarding potential newcomers and involved firms, there are three main strategic factors:

- Availability of high quality services;
- High quality/price ratio of inputs;
- Low settlement costs.

Hence, EIPs can create value for this demand target through:

- The increase of efficiency and the reduction of environmental externalities;
- The improvement of environmental sustainability of the involved firms with a positive effect on their external image;
- The presence of a unique and highly qualified player that manages environmental, administrative, and technical issues;
- Financial incentives and benefits;
- The web of interactions between firms and local authorities;
- The sharing of knowledge, innovations, infrastructures, and costs;
- The involvement in the implementation of local policies for the sustainable development of a place.

In addition, firms can also achieve positive economic advantages and seize opportunities unavailable somewhere else by exploiting the characteristics of the place where the EIP is located and the agglomeration economies (spillover effects). The value proposition of EIPs for the direct demand target should clearly underline these aspects and these sources of value creation.

As for the other demand target (local stakeholders), the key success factors are:

1. The involvement of high quality of firms;
2. The willingness of the involved firms to create value and share it with local stakeholders;
3. The integration between firms and local stakeholders.

EIPs contribute as:

- An important tool to promote sustainable development creating benefits for firms, local stakeholders and the wider local community;
- A tool to improve the attractiveness of the place and its green image;
- An instrument to improve the competitiveness of a place and its ability to retain firms;
- A community where financial incentives and tax benefits for firms can be tested;
- A community where public-private partnerships can be created and implemented.

These potential benefits offered by EIPs should clearly feature in the value proposition to the indirect demand target, i.e. the local stakeholders.

#### THE DEFINITION OF ADEQUATE OPERATIONAL MARKETING ACTIONS

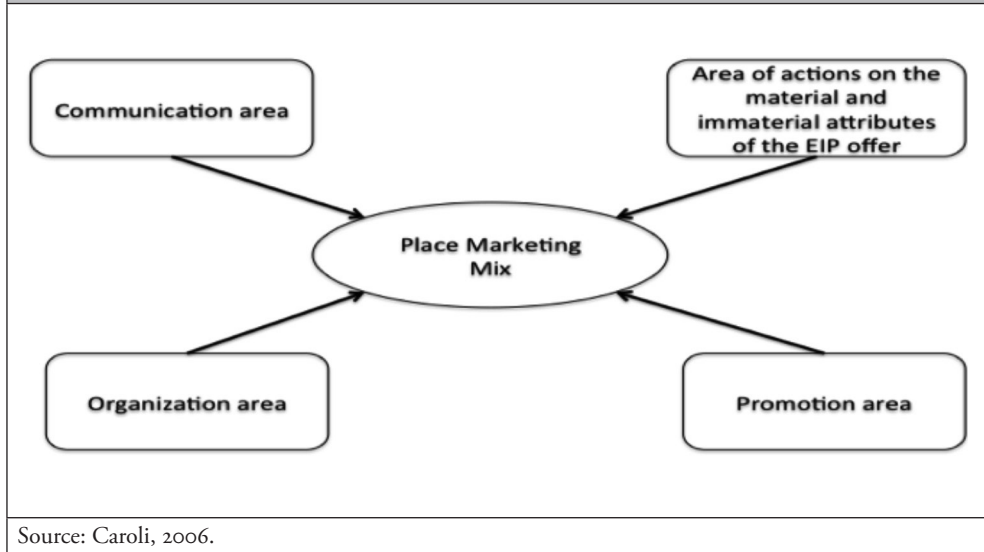
The operational implementation of a marketing strategy is determined by the place marketing mix plan. This plan contains the operational actions to achieve four main aims:

1. Development aims: reached through actions designed to strengthen or innovate the EIP offer.
2. Communication aims: reached through the dissemination of information about the main factors and characteristics of the eco-industrial park that attract the demand targets.
3. Organization aims: reached through the coordination of the different actors involved in the management of the eco-industrial park and in the definition of its marketing strategy.
4. Support aims: reached through the development of operational policies designed to facilitate the creation of the web of interaction among different actors involved in the eco-industrial park, i.e. involved firms, newcomers, local stakeholders, public/local authorities, and EIP management team.

These aims are discussed in four areas of the place marketing mix, where managers take the operational decisions and actions to implement the strategic marketing plan. As shown in the figure 7, these areas concern:

- The actions on the material and immaterial attributes of the EIP offer
- Communication
- Organization
- Promotion.

Figure 7. The four areas of the place marketing mix



The first area consists of all actions designed to update, modify or innovate the EIP offer. These actions have costs that should be considered. So, here managers have to take also all decisions about “price” and financial support for firms that decide to locate their productive activities within the eco-industrial park.

The communication area concerns all actions designed to communicate outside the EIP its opportunities and advantages, but also to create a proper image of the EIP and to strengthen its competitive and strategic positioning. This area includes advertising and promotional actions, public relations, and direct marketing initiatives. Furthermore, eco-industrial parks also communicate through workshops, conferences on specific sustainability topics, or local events.

The organization area concerns all actions designed to establish the EIP managing board, responsible for the management of the relations with the market and, more in general, for the implementation of the operational marketing plan. Here, it is also important to define how to create and manage the relations between the EIP managing board and the local authorities and stakeholders interested in the implementation of the marketing plan. So, proper coordination mechanisms have to be defined to better implement the operational marketing actions. Moreover, in this area managers are also responsible for the availability and the supply of financial resources to implement these actions and to reinforce the EIP offer. Finally, proper monitoring mechanisms are activated. These mechanisms verify the attained performance and its consistency with the marketing strategy, and the vision of eco-industrial park.

Last but not least, the promotion area consists of two main sub-areas: the first is about establishing an initial contact with the potential newcomers; the second is about the organization of proper pre- and post-assistance services for potential newcomers and



involved firms. Other matters that also fall within this area include: the organization of meetings with potential newcomers, involved firms, and local stakeholders (conferences, workshops, open days, and so on); the management of potential customers and the provision of all necessary information about the eco-industrial park; customer assistance with the bureaucratic entry procedures and the required permissions (especially the environmental ones), with the forms to comply with public and private funding, and with the start of the productive investment in the eco-industrial park. Sometimes, the promotion area overlaps with the communication area.

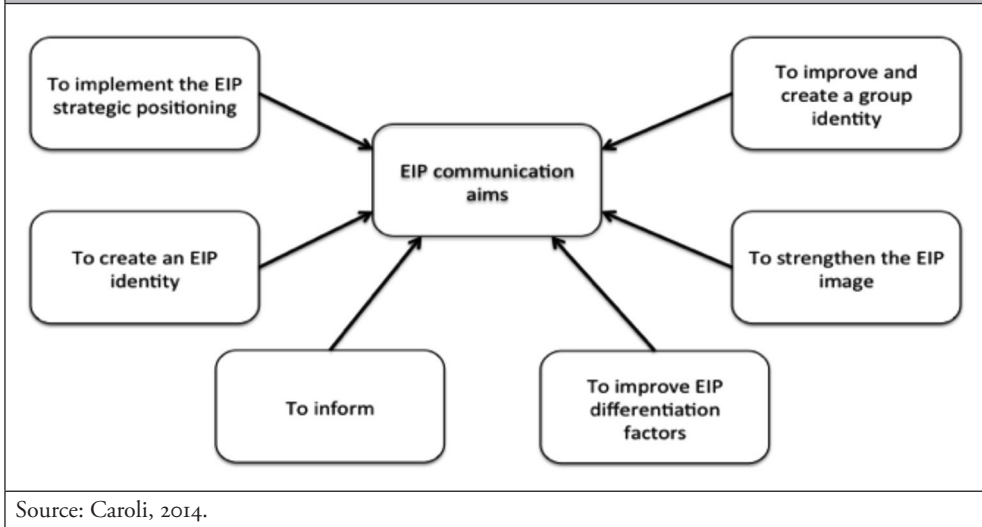
#### THE SPECIFICITIES OF EIP COMMUNICATION

Theoretically, communication is a dynamic and interactive process that has direct effects on the target demand's perception and behaviour (Caroli, 2014). Following this definition, communication aims to influence the target demand in terms of:

- Perception/knowledge;
- Differentiation;
- Identity;
- Choice.

Communication plays a central role in the management of EIPs. The EIP *raison d'être* lies in the presence of a large number of firms that carry out their productive activities in the park, and of local stakeholders interested in the development of the EIP. So, the EIP's board of directors should develop a proper and effective communication plan in response to the attributes, image, and strategic positioning of the EIP as perceived by each demand target. It is possible to identify three different communication targets for Eco-industrial parks: involved firms (internal communication target); newcomers and local stakeholders (external communication target); and "key influencers" (i.e. opinion leaders, national and international media). Each target has its own characteristics that should be taken into account in the choice of communication contents and tools. So, the communication aims may be different for each communication target. For example, communication towards newcomers aims to inform them about direct and indirect benefits of the EIP and to get the image and identity of the EIP across; communication towards local stakeholders aims to underline the positive environmental impacts on the productive activities within parks; communication towards key "influencers" aims to promote the EIP model as the best practice to reduce negative externalities of productive activities and to foster firm competitive advantage in the long run. Moreover, particular attention should be paid to internal communication. Here, the involved firms are the targets of communication and communication aims to improve their group identity and their web of interactions. These aims can be summarized in the following figure 8.

Figure 8. EIP communication aims



#### THE EIP COMMUNICATION MESSAGE

In theory, the communication message is the result of three main elements: contents, modality, and source. They answer the three main communication questions: “what”, “how”, and “who”.

In the case of EIPs, the contents are “what” the message wants to communicate about them. They have to be in line with the communication aims and the characteristics of each demand target. Moreover, they are usually related to the EIP strategic vision, based on believable and verifiable elements, and focused on the key factors that differentiate the EIP from its main competitors. Potential contents should highlight for example:

- The uniqueness of the environmental infrastructures, facilities and services compared to other industrial parks
- The environmental and financial benefits of the EIP that offset the higher settlement costs;
- The environmental impact of the productive activities carried out inside the park;
- The projects implemented by the EIP to optimize sustainable development and the competitiveness of firms.

These contents are differently perceived by each demand and communication target. This different perception has to be carefully considered when EIP managers define the contents of communication messages (as shown in the following figure 9). So, it is possible also to define different contents for each target.

Modality is “how” these contents are communicated. In theory, there are two different modalities: the “informative” modality and the “evocative” one. In the case of EIPs, the first one aims to inform targets more or less in depth about the main EIP character-

istics, and to stimulate targets to a rational elaboration of the contents. The second one encourages targets to link immaterial attributes and positive emotions to the EIP image, shaping the targets' psychological perception. So, the "informative" modality is strictly related to the object of the communication (eco-industrial parks), while the "evocative" one is focused on the relevant topics for each target. In practice, both modalities are combined to communicate the contents of a message about eco-industrial parks. Their combinations are strictly related to the communication tools that will be discussed in the following sections, as well as to the characteristics of target demands and in particular to how they want to receive a specific message.

Figure 9. Contents-targets matrix

	Firms	Local Stakeholders	Key influencers
Environmental and financial benefits of EIP to balance higher settlement costs	*****	**	****
The environmental impact to productive activities realized inside	***	*****	*****
The unique environmental infrastructures, facilities and services respect to other industrial parks	*****	***	****
The EIP project to optimize sustainable development and confirm competitiveness	****	****	*****

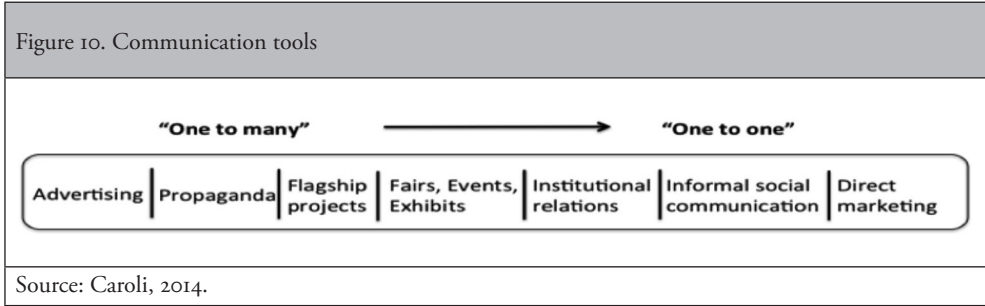
Source: Valentino & Caroli, 2014.

Finally, the source is "who" communicates the message. It plays a really important role and has a considerable impact on the credibility of the message. Thus, it has to be clearly and positively identified by the demand targets. For these reasons, it is important to establish a proper marketing unit within the EIP organizational chart or to entrust marketing activities to identifiable managers. The more it is clear who is in charge of these activities within the EIP organization, the more the communication message is powerful and credible.

#### THE EIP COMMUNICATION TOOLS

In literature, scholars divide communication tools into two main groups according to who communicates and who is the communication target: "one-to-many" and "one-to-one". These groups include a vast array of tools, such as: advertising, propaganda, flagship projects, fairs/events/exhibitions, institutional relationships, informal social communication, and direct marketing (see figure 10). The main difference between these tools is related to the type of communication. "One-to-many" tools are mass communication tools, disseminating the message to all receivers. On the other hand, "one-to-

one” tools communicate in a targeted manner, addressing the message to a specific and pre-selected target.



The most effective way to communicate about eco-industrial parks is using “one-to-one” tools due to their ability to directly reach a specific target. Moreover, they can be highly customized according to the characteristics of the targets. So, specific message and communication tool have to be prepared for each target. This characteristic represents the main potential of these communication tools, but also their main limit. To be successfully implemented, they require a well-structured marketing unit within the EIP organization or the presence of a marketing group within the EIP board. They require time and marketing expertise that are often scarce resources within eco-industrial parks as shown in the benchmarking analysis. The customization of the message and of the communication tool requires the clear identification and perfect knowledge of each target, its needs and main attributes. Thus, EIPs combine “one-to-one” communication tools with less demanding ones. For instance, they use some “one-to-many” tools and, in particular, they frequently organize conferences, workshops, and events about green marketing, sustainable activities, ethical consumption, and innovative ways to reduce pollution and negative externalities. These events are staged with the active participation of specialists on these topics and in partnership with local universities. They are open to different types of targets: involved firms, newcomers, local stakeholders, and key influencers. So, they play a dual role both as internal communication tools and as external ones.

Moreover, more informative events are organized within eco-industrial parks every month. During these events the park is open to all interested visitors (entrepreneurs, firms, stakeholders, as well as students and researchers) and EIP managers inform them on the main infrastructures, services, projects and benefits of the park.

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# Learning from “green” consumers

*Vito Tassiello*

## INTRODUCTION

In the last decade, sensibility in regard environmental issues are changed. both organizations and consumers are becoming more conscious about their actions, trying to be more aware of their behaviours. Despite the fact that the cynicism and past failures of green economic practices have hindered a homogeneous development of green products and services on the market, nowadays companies are demonstrating that with appropriate strategies it is possible to educate consumers to behave in a more eco-friendly manner. According to Hawken (1993) due to the fact that “corporations are the dominant institution on the planet, they must squarely address the social and the environmental problems that affect humankind” emphasizing how companies play a decisive role in the whole process that should, on the one hand, decrease the level of pollution and, on the other hand, instruct people to behave responsibly.

Companies and organizations should act as means to affect lifestyles, to promote better living standards and to convince people to make sustainable choices, which would have an impact on company performance. Recent studies (i.e. Grant 2009; Shah and Pillai, 2012) reported that the adoption of green strategies, as a substitute of traditional approaches, generates benefits for businesses and increases the value of brands. That is why green methods are becoming strategically relevant for companies that find out also practical applications and ad hoc marketing campaigns. Single and isolated strategies may not have similar effects. Eco-parks can have strategic relevance in the diffusion and promotion of environmental friendly behaviour. Common plans among players of the same area have stronger effects on consumers’ perception and on the diffusion of ecological methods.

Sustainable marketing is about understanding and managing the pivotal role of marketing in the future of business through a process of creating, communicating, and delivering value to the customers in such a way that both natural and human capital are preserved or enhanced (Martin and Shouten, 2012).

Furthermore, the financial crisis that hit the markets in 2008 and bent the companies has revealed the complexity of the current economic system. Indeed, its validity has been the object of different and opposing discussions. In such a critical situation, many authors have tried to outline a new economic system that posits ethics and green approaches in the middle (Grant, 2009).

The other side of green strategies is represented by how people and consumers behave and what they react to. People have gained a different and deeper perspective concerning environment, pollution and forms of consumption that are eco-friendly. Green issues have also modified the behaviour of people that have changed their habits and perception of companies. The deep environmental changes, natural diseases, the spread of diseases and the scarcity of resources are just some of the many reasons of the growing interest in environmentalism and green issues.

The following chapter has the main objective of representing how both companies and consumers have changed their attitude towards issues that are strictly connected to the environment. On the one side, companies have adopted green strategies that translate into green marketing approaches and, on the other side, consumers, are increasingly adopting more eco-friendly behaviour in terms of consumptions and preferences and companies' selection albeit companies should demonstrate more openness to the new consumers' behaviour. Furthermore, the willingness to create clusters of companies and organizations that use green methods will increase the acceptance among consumers.

#### GREEN MARKETING

Green marketing is just the “tip of the iceberg”. Probably its contribution to the fight against climate change and other problems will be partially significant, but it is important because it is really visible. In other words, green marketing is the bridge between people and businesses, an innovative approach that can create new strategic ideas to simultaneously achieve economic success and collective wealth. It is both an environmental and a commercial activity; it is a win-win game (Grant, 2009) in which profitability is just the secondary effect of a wider vision in which the overall well-being is followed. As a matter of fact, the purpose of eco-marketing is to change “what people usually do” or “how people see the world”. In any case, it is a long-term goal, due to its relation with consumer models, lifestyles and behaviours.

In 1975, the American Marketing Association (AMA) developed the concept of “non-traditional” marketing on the occasion of the first workshop on Ecological Marketing. It was defined as “the study of the positive and negative aspects of marketing activities on pollution, energy depletion and non-energy resource depletion” (Henion and Kinneer, 1976). However, the initial definition appeared limited and restricted and it lacked concreteness. In the late 1980s, the concept of green marketing emerged, due to the growing green consumerism trend and the remarkable success of the publication *The Green Consumer Guide* (Crothers, 1994) that became a considerable phenomenon in the 1990s (Kirkpatrick, 1990). In that period, consumers seemed to be ready to accept green products, as demonstrated by opinion polls, which showed increasing awareness of green products/services among consumers and the willingness to modify their behaviour to reduce environmental impacts (Chroters, 1994). Other neologisms – like ecological, green, environmental, sustainable, eco-friendly etc. – have been used to define that type of marketing developed to improve environment safety. Polansky (1994) stated that green or environmental marketing consists of all activities designed to generate and facilitate any exchanges intended to satisfy human needs or wants, such that the satisfac-

tion of these needs and wants occurs, with minimal detrimental impact on the natural environment (Polansky, 1994). Specifically, the aim of green marketing is to generate mutual benefits for companies, institutions and consumers.

Many researchers have divided the evolution of green marketing in three main different phases: from “ecological”, through “environmental” to “sustainable” marketing (Peattie, 2001). Initially (1970-1980), the goal of green marketing was to incorporate ecology issues into the marketing strategy to remedy problems such as air pollution, the scarcity of natural resources and wasteful packaging. The early ecologist movements in Australia and in the UK were set up in the same period. The “Green Consumer Guide” quickly became a bestseller after its publication, companies entered in the green marketplace to take advantage of the environmental aspect of their products or processes because the population seemed to be ready for a shift in their consumption habits to solve the environmental crisis. Conversely, marketing activities were more focused on investments in new technologies to develop innovative green products as the realization of the ecological economy through social responsibility, sustainability and innovation. Furthermore, Savitz and Weber (2007) pointed out that companies could become more profitable by following procedures that are ethical and fair. They suggested that businesses do not use only financial performance to measure their success, but also the level of exploitation of environmental resources (i.e. water, electricity and raw materials) and social resources (i.e. community and infrastructures). These changes are increasingly influenced by the firm’s policies and practices that affect the quality of the environment, and reflect the level of its concern for the community. The purpose of green strategies is a management process to identify, anticipate and satisfy the requirements of society in a more profitable and sustainable way (Peattie, 1995; Shah and Pillai, 2012). Therefore, it is possible to identify several reasons that explain the growing interest for green topics, and how companies perceive these new values and their application in companies’ organization (Polansky, 2010):

- Organizations perceived environmental marketing as an opportunity to achieve their objectives;
- Organizations believed they have a moral obligation to be more socially responsible;
- Governmental bodies were forcing firms to become more responsible;
- Competitors’ environmental activities pressured firms to change their environmental marketing activities;
- Environmental issues could act on revenues and on costs, enhancing the characteristics of environmental compatibility of products or promoting a credible image of a green company.

Although, companies pay more attention to green practices, consumers’ perceptions and judgment play a crucial role. Olson (2008) defines the main concepts that a green company should try to follow:

1. Understanding consumers’ attitudes and beliefs;
2. A long-run practices with accurate and eco-friendly investments;
3. Adopting a holistic approach involving all the functions and areas of the company.

Several companies and in different industries are now willing to adopt a “green” perspective. Organizations of all types are introducing products, services or marketing



campaigns based on “green approaches”, from companies that operate in energy sectors to fashion brands selling clothes made with organic materials. As previously mentioned - there are interesting data that demonstrates how consumers are less interested in green consumption when they are in right proximity of doing a purchase. Moreover, a high percentage of consumers have never purchased a “green” product (McKinsey report 2008). Thus, in order to achieve the full market potential, companies must understand consumers and get inspiration consumers that have a positive attitude towards eco-friendly companies.

Generally speaking, companies and organizations that decide to adopt an eco-friendly style have to face issues that stem from the consumers’ reluctance. At first blush, consumers believe that the quality of green products/services is lower. Others are sceptical about environmental claims partially because corporations suffer from green reputation. Then there are other problems that relate to practical concerns, such as the idea that green goods are more expensive. Finally, there is a scarce availability of green goods on the marketplace. Hence, understanding consumers who already have a “green attitude” may help companies implement strategies and remove barriers (lack of awareness, negative perceptions, distrust, high prices and low availability) that obstruct a higher distribution of green products/services (McKinsey report 2008).

In order to solve the problems that may derive from the single perspective of consumers on a specific company, cluster of companies that have common rules and procedure may be useful because they enhance the image and the reputation of the single members of an organization. Marketing strategies that involve more actors produce advantages not only in terms of cost savings, but they also enhance the perception of consumers. Acting in group may have further benefits in terms of awareness and, hence, reduce the risk that consumers perceive a lack of awareness or a low presence on the market. The creation of eco-parks can represent a strategy that may help companies deal with new challenges that stem from the diversity of consumers’ behaviour and attitudes.

#### ECO-INDUSTRIAL PARKS AS A FORM OF BRAND WEBS

Eco-parks are defined as a community of companies that cooperate and interact in order to efficiently use natural resources through a system view (Côté and Cohen-Rosenthal 1998). Further explanations define eco-parks as companies that decide to work together seeking collective benefits and assuring that the net impact of development is positive (Lowe, 2001). Although, the main definitions are connected to organizational and industrial approaches, what is necessary is cooperation based also on marketing and branding.

The creation of eco-parks with a conglomeration of companies and organizations can be interpreted as brand webs. Brand webs can have many stakeholders, including shareholders, employees, local and central governments, activist groups and so forth. The multiple stakeholder focus gives the possibility to create a high-profile “corporate entity” that can elicit the consumers’ interest. From a marketing and branding perspective, seeing eco-parks as a network of brands may encourage companies to developing, for example, co-branding strategies. These kinds of strategies enable consumers to cre-

ate mental connections and reduce the difficulties in the selection of brands. Moreover, common branding strategies empower organizations to increase their credibility and contain potential pressures from groups of consumers (Lantos, 2001). By trying to transform eco-parks into a brand web, it is possible to generate positive mental associations and foster a desirable set of values that would otherwise be difficult to establish. Eco-parks, then, have potential opportunities to be exploited and that should be implemented under a marketing viewpoint in respect to consumers' behaviour analysis.

#### ETHICAL CONSUMPTION AND AVOIDANCE

Ethical consumption has had an exponential growth which has promoted a sustainable lifestyle. The propensity to buy green products has been increasing since 2010. According to Vianello (2012), nowadays 50% of consumers are willing to pay a premium price for eco-products, compared to 17% in 2010. As for the perceived quality, 43% of respondents in 2012 perceived green products as superior (to traditional ones) compared to 38% in 2010. As a matter of fact, 66.3% of clients would prefer to be more informed about the characteristics of green products (to get a better understanding) through comparative advertising, while 55% of them would like to find real Ecological/Biological certifications to recognize the items. As for firms, 46.5% of them rely on certifications to communicate the eco-values, 35.4% rely on design and packaging and just 12% use comparative advertising. Despite, data reports how global companies are becoming more conscious eco-friendly practices and that consumers are more willingness to purchase from them it also true that in the last decade there has been an increase of new forms of consumer behaviour based on the avoidance of brands and products that are perceived in some way as not ethical. These attitudes can be adopted by individuals as well as by groups of consumers.

Individual avoidance derives from an external ideology that is consistent, for example, with the consumer's political ideology, religious orientation or environmental concerns. Sandikci and Ekici (2009) analysed the cases of brand refusal associated with particular political ideologies. Brand rejections are not only a way to express personal lifestyle, but also stem from the fact that brands have potential negative impact on society. Moreover, consumers avoid brands because of their massive presence on the market and because they are perceived as invasive: global brands such as McDonald's, Marlboro, Starbucks and Walt Disney are avoided because they are acknowledged as hegemonic and imperialistic (Cromie and Ewing, 2009). On the other hand, well established local brands such as Turka Cola in Turkey or Mecca Cola in Indonesia are perceived as religious fundamentalism due to their strong orientation in the Muslim sphere and to their opposition to Americanism, even though groups of Middle-Eastern and Asian consumers perceive Coca Cola as a powerful brand with the capability to affect the Muslim ideology because of their strong Occidentalized orientation (Sandikici and Ekici, 2009). Other individual reasons that encourage consumers to avoid brands lie in the decision to adopt a lifestyle that is in line with ethical behaviour and avoids products and brands that are, for instance, not environment friendly, involved in unfair trade or exploiting human beings and animals (Shaw and Shiu, 2003).

There are also individuals who refuse consumption activities because they want to simplify their life and have more spiritual relations with the environment in general (e.g. Francis from Assisi and Gandhi). However, these tendencies involve primarily individuals who decide to follow this lifestyle. Several articles regard forms of anti consumption underline the importance of the reference group in making a decision and the weight that a group has in terms of influencing consumers' choices (i.e. Banister and Hogg, 2001; Englis and Solomon, 1995, 1997; Hogg, 1998; Hogg and Banister, 2001; Muniz and O'Guinn, 2001; Veloutsou and Moutinho, 2008; Cova and Pace, 2006). Reference groups can affect the refusal decision and studies on avoidance highlight the extreme importance for consumers to identify particular social groups that they associate with consumption and with certain stereotypes that they want to avoid (Wilk, 1997; Sirgy, 1982; Hogg and Banister, 2001; Dalli, Romani and Gistri, 2006; Sadikici and Ekici, 2009). Englis and Solomon (1995, p. 24) pointed out that «consumers may eschew purchase, ownership, and use of such products and activities owing to their reluctance to be identified with an avoiding group». Hence, the importance and the pressure of a group may be critical in terms of avoidance and especially the will not to be associated with a group that is not akin to one's personal values. Group behaviour, however, seem to have more importance than single actions. Social movements are considered as an expression that implies social and cultural transformation (Finger, 1989) and according to Tilly (1999) a social movement is recognizable when it consists of a sustained challenge to a power holder in the name of the population living under the jurisdiction or under the pressure of a despot. We can identify several social movements that have fought in the name of the population in order to obtain freedom or rights. Therefore, Postmodernism is emblematic of controversies among people and institutions. It is important to identify the social period because it emphasizes the transaction to a post-materialistic era with a new set of values such as freedom of speech, self-expression, tolerance and experiences (van Raij, 1993). The decade between 1960 and 1970 is the classical example of a turbulent transition: famous are the protests in Paris (1968) and in the USA (Woodstock 1969). The way of thinking was changing and, as a consequence, the dictates deriving from a restricted and oppressed era of war were no longer accepted.

Consumers, associations of consumers and organizations catalyze their efforts in order to guarantee a high level of respect. Often, these comparisons provoke debates, protests and revolts. Yet, the new tendencies and the new way of operating allow consumers to be fully aware of the practices and *modus operandi*. On the other hand, brands have similar characteristics worldwide. Communities are no longer unique and show similarities in different parts of the globe (Cova, Pace and Park, 2007). Communities provoke a certain homogeneity: consumers who want to appear in a certain way should buy the appropriate brands that are recognized by the global mass (Klein, 1999). Thus, both the social period and the new approach undertaken by companies allow consumers to have a deep and precise vision of companies' practices.

Social activists, however, are rebelling against identities, corporate domination and branding expansionism and forms of resistance to such marketplace activities are becoming evident in our society (Hollenbeck and Zinkhan, 2006). This is also confirmed

by Stearns (2001) who declares how the level of tension is increasing compared to the new global economy in the late 20th century. The author also lists several reasons that caused pressure in modern societies, such as pressure on workers due to low wages; pressure on poor agricultural countries that need help from industrialized countries and pressure on consumers who are worried about losing control over the products they purchase and over their identity. Shaw and Shiu (2003) add that consumers pay more attention to local products and they are wary of foreign items and of the massive presence of American products on the local market. Nonetheless, having hostile relation with brands is common and Holt (2002) rhetorically asserts: «Brands cause trouble».

Boycotting companies and brands is a weapon that can be adopted by consumers to express their disappointment. Klein, Smith and John (2004) report the definition elaborated by Friedman in 1985 (p. 97) of consumers' boycott as "an attempt by one or more parties to achieve certain objectives by urging individual consumers to refrain from making selected purchases in the marketplace". Thus, boycotts are an extreme case in which groups of consumers who consider fundamental ethical and social issues regard consumption activities and it also aims to inform others about companies' bad practices (Huber, Vollhardt, Matthes and Vogel, 2009). Boycotting may be defined as a collective action similar to voting featured by a pro-social behaviour or may be related to customer complaining behaviour (Klein, Smith and John, 2004). Mainly, the explanation is driven by the conviction that a firm is involved in wrong actions with harmful consequences for parties such as workers, consumers and society in general (Klein, Smith and John, 2004) and also for personal fulfilment; boycotters feel better because boycotting is a way to help others (Sen, Gürhan-Canli and Morwitz, 2001).

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# Policies for the development of ecologically equipped productive areas (EEPAs)

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## INTRODUCTION

The EEPAs can be considered the “Italian version” of the eco-industrial parks mostly developed in the United States, Canada and in the northern European countries. As is well known, an eco-industrial park (EIP) is a community of firms that, through cooperation and possibly with the support of local institutions, minimize the environmental impact of their production and find the best balance between economic and environmental performance (Lowe, 2001). Therefore, firms within an EIP are able to reach the best equilibrium among efficiency, environmental impact, and competitiveness. The key factor of an EIP is the offer of the best conditions for the “industrial symbiosis”: an integrated system of resource management which minimizes the use of material resources by the hosted companies, and optimizes the recycling of wastes helping companies to cooperate to reach environmental targets.

EEPAs were established in Italy by a national law more than fifteen years ago. Since then, the development of EEPAs has been rather slow and has not considerably changed the industrial areas. A strong policy action is necessary to support the development of EEPAs, particularly within the “Sustainable Consumption and Production” framework.

The MEID project has defined a model for implementing a sustainable industrial area, underlining the following most relevant elements<sup>1</sup>: i) an official managing company; ii) a shared process to elaborate a joint industrial policy; iii) the involvement of local stakeholders; iv) an Environmental Management System of the area (environmental policy, monitoring plan, improvement plan, communication procedures); v) centralized infrastructures and innovative services; vi) sustainable industrial buildings. In the following section, we propose policies for EEPAs that take these elements into consideration.

## POLICIES TO ATTAIN THE MAIN OBJECTIVES IN THE DEVELOPMENT OF EEPAS

The policies for the development of EEPAs are part of the policies for the integration of sustainable consumption and production (SCP) in the MED Area. Therefore, they have to be finalized to make SCP an approach which does not reduce the companies’ com-

1. See: Harmonization of Policy recommendations for the integration of sustainable consumption and production in the MED area – final report, draft April 2014, p. 88.



petitiveness, but possibly helps them to find new, and sustainable ways to be competitive on international markets.

It should be noted that in Italy, as in other MED countries, regional governments have competences on EEPAs and generally on the development of industrial areas. Thus, policies for the development of EEPAs should to be planned primarily at regional level<sup>2</sup>. Notwithstanding this, we believe that national policies are also required, especially to define the framework that can support the specific measures of the regional government.

The key aim of the policies for the development of EEPAs is to turn the EEPA and the whole territory where it is located into an “eco-system” where firms find advantageous conditions for their sustainable development. The development of an effective eco-system attracts productive investments to the EEPA. There are five basic conditions to transform the EEPA into an “eco-system” where companies can thrive:

- a good number of companies and productive plants located inside the industrial park;
- the presence of a certain number of companies that can act as “hubs” of the eco-system due to their economic size and to the relevance of their relations with the national and international markets;
- the presence of economic institutions, research centres and departments, laboratories, etc. in the industrial park or in its vicinity;
- the concrete opportunity for companies and other private/public actors located in the EEPA to benefit from relevant economic and/or competitive advantages;
- the willingness of companies, other private organizations, local government and other public institutions to cooperate with the common aim of promoting the sustainable development of their territory.

The policies for the development of the EEPAs have to take into account these five conditions to overcome the weaknesses that currently reduce the attractiveness of the EEPAs.

#### MAIN WEAKNESSES OF THE EEPAS

In the Ecomark project, researchers carried out an “international benchmarking exercise on industrial areas”. This analysis is particularly focused on: environmental management, logistics and mobility management, communication and green marketing, R&D. The benchmark highlights some flaws of industrial parks<sup>3</sup> ((with considerable differences in different European regions): first of all, the scarce perception of the value created through green marketing and sustainable logistics management. Specific tools are required to strengthen this perception because the generic ones usually provided in industrial parks are not enough. It also needs to improve competences and resources

2. The whole SCP is considered part of a regional development strategy. All experts involved in the SCP MED programmes agree with the assumption that «SCP policies are pivotal to regional sustainable development due to resource savings and job creation that they can generate at the local level».
3. See: Harmonization of Policy recommendations for the integration of sustainable consumption and production in the MED area – final report, draft April 2014, p. 89.



in communicating environmental issues. The benchmark also shows that “there is no well-established tool-kit to innovate the management of logistics”; and the reduction of energy consumptions is one of the key areas where environmental investments are pretty high in most industrial parks.

Focusing on the Italian system of EEPAs, we can see that the development in the different Italian regions is very uneven. EEPAs are relatively well established in Tuscany and Emilia-Romagna, while other regional governments have only approved the set of rules to make an industrial area compliant with the characteristics required to be an EEPA (Piedmont, Abruzzo, Liguria, Calabria, Apulia). However, in some Italian regions there are no EEPAs. This is the result of the Italian Legislative Decree n. 112/1998, which established EEPAs, giving to each regional government the responsibility to regulate the development of their industrial areas.

Due to this heterogeneity, EEPAs can hardly be considered as a general model of industrial parks, as a benchmark that other industrial parks should follow. Moreover, the only partial implementation of this law at regional level after more than fifteen years increases the perception of the EEPA as an ineffective model or unsatisfactory solution to implement.

Another key weakness is related to the uncertainty about the concrete economic or strategic advantages that companies can achieve if they join an EEPA. Theoretically, firms get the following benefits: significant environmental cost savings, the strengthening of their reputation as a “sustainable” company, the improvement of their relation with the local government and institutions, the reduction of administrative costs, the development of their social capital and business network (Lowe, 2001). These potential advantages would result from the efficient organization and management of the EEPA, and the presence of an adequate number of firms. However up to now, these advantages were still out of reach even in the most significant experiences. Moreover, the medium- to long-term nature of these advantages increases a negative perception of the firms. In the first year, it is likely that being settled in an EEPA does not generate significant positive differences compared to companies located in other industrial areas. Concrete benefits can be achieved only in the long run. As a consequence, being in an EEPA can be helpful only for firms which have a long term vision, a strategic and sustainable approach to business, and sufficient resources to back this vision and approach.

On the other side, firms in an EEPA may incur higher costs because of the strict environmental norms adopted by the EEPA to be recognized as such. These costs stem from the more strict environmental parameters for productive activities, or from the request to behave “sustainably”, which requires specific investments or expenses. To be compliant with the environmental aims of the EEPA, companies also incur costs for organizational improvement: the creation of new organizational capabilities, a new configuration of some value chain activities, and the adoption of new procedures.

From the firm’s perspective, the settlement in an EEPA can be considered as an “extra investment”. However, it also increases the complexity and maybe the costs that may increase the medium- to long-term results of the whole investment. It is pretty clear

how difficult it is for companies, especially for SMEs, to face this “extra investment” in the current phase of deep crisis of the internal market with decreasing production levels.

#### THE CONTENT OF THE POLICY FOR THE DEVELOPMENT OF EEPAS

Policies to support the development of EEPAs should stimulate the creation of a good eco-system for firms located within the EEPA. At the same time, they should overcome its weaknesses, and ensure the sustainability of the implicit investment that firms have to face in order to be located in the EEPA.

It is necessary to adopt measures both on the “demand” side and on the “offer” side. The former are measures aimed to stimulate the willingness of companies to make the “extra-investment” to be located in the EEPA; the latter are measures aimed to strengthen the characteristics of the EEPA to improve the competitiveness of the involved companies; in other words, they are measures to strengthen the attractiveness of the EEPA.

On the “demand” side, it is important to provide firms (especially SMEs) with proper incentives to locate their plants in the EEPA. The relevance of the incentives should be stressed, also considering that the MEID and Ecomark reports highlighted the lack of incentives to support the adoption of an SCP strategy by SME<sup>4</sup>. Those reports underline that «usually, if provided, the environmental incentives concern only the theme of energy consumption, efficiency and renewable and do not cover other environmental themes». Incentives are particularly relevant also to overcome common problems faced by firms in the current economic phase: scarce availability of financial resources, strong necessity to reduce costs and improve efficiency, decrease of economic margins and reduction of demand.

Incentives can be of an economic nature, or can take the form of administrative and regulatory simplifications that strongly influence the effectiveness of the investment procedure and, as a consequence, its overall cost.

Monetary incentives should be used very carefully because their effects are only short-term and do not generate structural improvements. Many economists and experts involved in SCP programmes have criticized these incentives, underlining their negative effects on companies’ innovation and long-term competitiveness. From the local community’s point of view, monetary incentives are costly and might not generate sustainable and long-term development. However, they can be very effective in generating rapid (if not structural) effects. They are one of several tools that can be used, probably not the most adequate. It is also important to define mechanisms which are effective to reach strategic objectives.

So, monetary incentives should be organized as a “rotation fund”: firms that have benefited from financial aids to invest in the EEPA should give back a percentage of them after some years, in proportion to the concrete advantages that they achieved by been established in the EEPA.

4. See: Harmonization of policy recommendations for the integration of sustainable consumption and production in the MED area – final report, p. 90.

Another option is the automatic reduction of the fiscal burden on companies (tax incentive) in proportion to the resources invested in the EEPA, possibly weighted on the relevance of the investment for the sustainable development of a territory and on its degree of innovativeness.

Innovative financing tools can also be developed to support the settlement of SMEs in the EEPAs and their access to financial capital to reach the long-term sustainability targets.

If a wider use of the incentives were considered acceptable, the EEPA could get the advantages granted to the “free economic zones”. In recent years, national governments - including the Italian government - have started to support the development of this kind of areas, especially in the less industrialized areas (e.g. in the South of Italy) and only for the development of small firms. A wider adoption of such policies would require a careful analysis of the institutional framework and of the specific conditions to be fulfilled.

Policies for the development of EEPAs should also support the “offer”: the aim is to make the EEPAs as much attractive as possible for the target companies. To make these policies effective, it is useful to consider the main obstacles that have hindered the success of EEPAs during the last ten years. The uncertainty about the concrete advantages of being in this kind of industrial areas, the obligation to comply with environmental laws and targets, and the complexity of their governance have played an important role. The following five strategic actions can be considered as a solution to these problems:

- strengthening the business services available to the firms within the EEPAs;
- strengthening the environmental infrastructures the EEPAs provide to the hosted companies;
- planning and supporting long-term environmental projects aimed to involve as many companies as possible in the EEPAs;
- planning and implementing a marketing strategy for each EEPA and for EEPAs as a whole;
- improving the governance of EEPAs.

These five strategic actions need to be planned considering all the EEPAs in the same region as a network that should be as much integrated as possible. Therefore, the marketing policies may be complemented by another strategic action aimed to foster integration among the different EEPAs within the same region. This integration is necessary to provide business services and create environmental conditions which have a positive impact on companies’ competitiveness. It is also relevant to promote projects to integrate logistics activities and energy management.

Public authorities in charge of EEPAs should have access to financial resources and they should be able to provide the EEPAs with all the environmental infrastructures they need. Moreover, they should make sure that the companies located in the EEPA have concrete opportunities to improve the environmental impact of their production, and at the same time, give them the chance to strengthen their competitive advantage.

In EEPA the business services help the firms to reduce the environmental impact of their productive activities and to improve the overall sustainability of their production. It is also important that each EEPA or network of EEPAs are able to provide services

that help companies to innovate both their production process and their output or even their value proposition in order to make them more sustainable. This means helping companies to understand how to innovate in order to create value and share it with the whole local community. Another range of services that should be promoted are those that increase the capability of the hosted companies, particularly of SMEs, to enter international markets. In particular it is important to encourage the companies located in the EEPAs to exploit their environmental excellence as a competitive advantage on foreign markets.

It is also relevant to activate mechanisms that increase the firms' interests towards the offer of business services and their capability to effectively interact with their providers.

The support for marketing strategies is relevant because there is a widespread lack of knowledge of EEPAs and of their potential benefits (more generally, on SCP) among companies, local authorities and stakeholders in general. Firstly, the marketing strategy should better identify the needs of the different stakeholders involved (companies, governments, residents, etc.); then it should clarify the EEPAs' value proposition for each of these "client" categories, and define the actions to develop the structure and the characteristics of EEPAs which make these value propositions concrete and well perceived.

The improvement of the governance of EEPAs is closely linked to the appointment of a highly competent managing authority/company endowed with the administrative power to make the EEPAs attractive for companies and investors. Another important role of this authority/company is to foster the cooperation among the hosted companies, and between them and the local authorities or the other stakeholders. Moreover, its main aim is to minimize bureaucratic costs and problems.

When defining the action plans to implement these policies, it is important to keep in mind that regional governments have direct competences on the development of EEPAs. Therefore, they have the primary task and responsibility to draw and implement these actions. We believe that also the national government plays a relevant role both in supporting the regional actions and in creating the general conditions, which increase the EEPAs' potential competitiveness; in particular, it can involve the EEPAs in the policies and measures to attract foreign investments.

The national government should also overcome the lack of integration among the different sustainable development policies : innovation, territorial cooperation, development of "green economy". It should also strive for the harmonization of standards and norms, looking at the best available practices, and considering economic differences among regions. Harmonization should be developed both at national and at EU level.

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# A Green Marketing Plan for the EEPA located in Cento di Budrio (Bologna, Italy)

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## INTRODUCTION

The Region Emilia-Romagna is characterized by a highly competitive productive and economic fabric with a very significant presence of manufacturing activities.

The main sectors are driven by a large number of medium and large enterprises that invest annually considerable capital in research and development.

On the other side, however, there is a still relevant dependence on traditional sources of energy with high costs for businesses and other negative impacts on the surrounding environment. Because of these issues, the “qualifying energy-environment and sustainable development” has been introduced in one of the five axes of the ROP ERDF 2007-2013 in order to improve the energy and environmental performance of the production system, promoting its requalification.

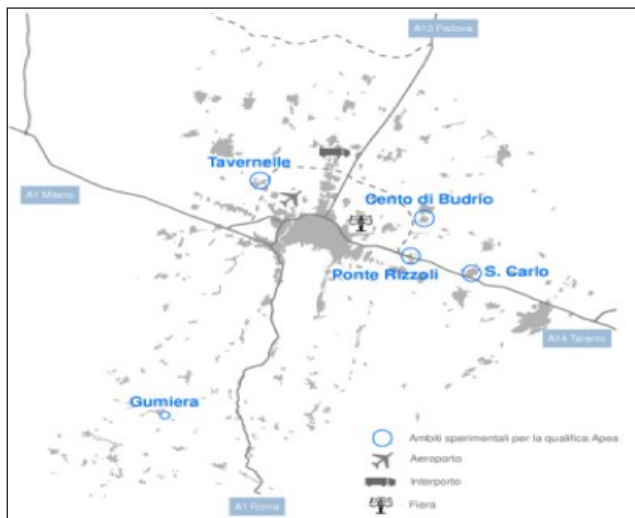
In this domain, a prominent role is played by industrial areas that have to be turned into EEPAs (Ecologically Equipped Industrial Areas; in Italian: Aree produttive ecologicamente attrezzate, APEA).

Article 14 of the Regional Law 20/2000 outlines the characteristics and the contents of the EEPAs that are defined as: “areas of specialized activity production, equipped with infrastructures and systems ensuring the protection of health, safety and the environment”. According to these guidelines, the EEPAs must be provided with infrastructure and management services going beyond the regulatory standards on energy, environmental and urban planning. Other legal acts to be taken into account are the following: Regional Government Decision n. 1238/02 on the assessment of the environmental impact, deliberation of the legislative assembly n. 118/07 “Approval of the guiding and coordinating act on the implementation of Ecologically Equipped Industrial Areas in Emilia-Romagna”.

The Province of Bologna considers the qualification of EEPAs as a tool to enhance the ecological and environmental management of the territory. At the same time, it is a strategic option to increase the competitiveness of the local productive system. As a matter of fact, EEPAs can be considered as networks of SMEs, managed by a common and shared board, settled in industrial areas equipped with advanced plants and infrastructures. In terms of competitiveness, EEPAs represent an added value also for the optimization of human, technical, financial and economic resources. EEPAs are

founded on the same principles of the blue economy: systemic approach, closure of cycles, symbiotic processes.

There are currently five pilot industrial areas under development for which territorial enlargement plans with high environmental and infrastructural standards have been approved. Furthermore, public authorities and local bodies have devoted gradual efforts to the requalification of the existing settlements. Four of these five areas cover supra-municipal territories with a strategic value for the territorial development because of the high accessibility and the low environmental risk. The five industrial areas are the following: Cento di Budrio, Ponte Rizzoli, S. Carlo, Tavernelle, Energy Park – Technological Centre Val Limentra. This chapter will delve into the case of the area located in Cento di Budrio. The pictures below show the geographical location of the industrial areas.



Thanks to the central role it plays in the development of EEPAs, the Province of Bologna has developed solid know-how about the possible advantages for a business settled in an EEPA. These advantages can be summarized as follows:

- better management of environmental impacts
- access to common services and common infrastructures
- generation of scale economies
- being part of highly qualified areas (improving image)
- priority access to incentives and simplifications.

Developing a green marketing plan for EEPAs means to emphasize how these areas can become a tool to implement an innovative approach to local development, based on public-private collaboration. This approach highlights the fundamental aspects of EEPAs and amplifies the benefits for the various actors involved.

The promotion of EEPAs is a strategic lever for territorial marketing because they are a distinctive component of the territory they belong to and they may be a source of competitiveness for enterprises and operators located within the area.

## THE INDUSTRIAL AREA OF CENTO DI BUDRIO

The industrial area located in Cento di Budrio covers an area of 137 ha, it is about 11 km from the motorway, 6 km from the railway station and about 25 km from Bologna. It was created on an existing site, with about 150 businesses already settled, and an expansion planned in the Agreement between the Region, the Province of Bologna and the six municipalities of the territorial area.

The main target sectors to be involved in its development are the following: commercial businesses, services, agri-food sector. As for environmental and energy qualification, the main characteristics of this new area are: a district-heating system, high energy efficiency standards, a service centre with photovoltaic plant, remote management of energy functions, water management, LED public lighting, cycle paths, a public transport stop, and informative logistics system.

The general objectives of the Green Marketing Plan for the industrial area in Budrio are:

- to communicate the potential economic advantages for local businesses that are located in the industrial area of Budrio;
- environmental benefits;
- the intangible capital of eco-industrial parks (for example the possibility of becoming part of a team);
- the features distinguishing an eco-industrial area from other industrial areas;
- to overcome the dichotomy between sustainability and competitiveness in the perception of other businesses, public opinion, and local stakeholders.

All the actors involved in the development of the Industrial Area in Budrio considered it as a tool for reaching the strategic objectives below:

- to reach and promote the standards of environmental and competitive excellence (This approach enhances the achievement of collective benefits greater than the sum of individual benefits that each business would individually obtain from the optimization of its performance);
- to encourage businesses and enterprise to settle in the sustainable productive area. (The label “EEPA” is a tool for enhancing business performances in an ecological and environmental perspective and for increasing business competitiveness in terms of both cost and differentiation);
- to activate and join a virtuous circle of integration among the businesses settled in the area and between them and the Managing Body of the area. (Among the tasks to be performed by the Managing Body, there are: implementing and managing the components of the territorial capital, participating to the price policy for businesses willing to settle in the EEPA or already located within it, participating to communication actions and promotion policy).

The Municipality of Budrio is strongly involved in the development and enlargement of the industrial area in order to reach three main objectives: the enhancement of the attractiveness of the whole area (the original one and the planned one); the enhancement and improvement of the perception of the label “EEPA”; the achievement of better conditions and characteristics of the IA. In this way, it is



possible to identify five fields of action: governance, monitoring and analysis (aimed at identifying the needs and expectations of all the businesses located in the area and at evaluating performances and best practices), the product “territory” (planning a territorial supply of services, activities to reinforce the cooperation between businesses, institutional local bodies, local communities), communication (internal and external communication for promotional purposes and to foster the engagement of internal and external stakeholders) and scouting (seeking investors, funds and financial incentives).

#### IDENTIFYING THE TARGETS, THE NEEDS AND THE ELEMENTS OF INTEREST

The main targets of the industrial areas located in Cento di Budrio, are:

- **Businesses:** this category includes both businesses that are already located in that area and businesses that may settle or relocate there. In this category, it may be advisable to include also business associations.
- **Local stakeholders:** this category includes local communities, citizens, development agencies, local associations that are active in the field of local development (Ervet).
- **Policy level:** this category includes local institutions such as Municipalities, Provinces, the Region Emilia-Romagna and the European Union, with a particular reference to European Projects aimed at improving eco-industrial parks and sustainable industrial areas (Ecomark project, MER project, etc.).
- **Managing Authority:** the Regional Guiding and Coordinating Act for the implementation of EEPAs approved by the Region Emilia-Romagna establishes that the Managing Authority must carry out the initial environmental analysis and set up the environmental programme for the EEPA; it manages the infrastructures and services in a coordinated and integrated way; it helps the businesses located in the EEPA to obtain and renew the necessary certificates and authorizations.

In this regard, it may be useful to briefly mention the stakeholders that were involved in the experiment carried out within the European project Ecomark for the promotion of an innovative logistics service within the industrial area of Cento di Budrio. On that occasion, in order to promote and disseminate the service, the Province of Bologna organized several events such as seminars and workshops involving in particular Unindustria (one of the most important Italian business associations), the Municipality of Cento di Budrio that offered also a space dedicated to the Logistics Broker’s office.

For each of the categories mentioned above, the marketing plan highlights the needs to which this area may respond and the main factors that could attract each target category. The tables below summarize these data:

Table 3. Needs of industrial area in Budrio	
<b>Businesses</b>	To find conditions favourable to competitiveness and to enter a virtuous network in order to reinforce the relational capital
<b>Local stakeholders</b>	To attract high-qualified businesses in the local fabric to enhance the territorial capital and to reinforce the green development of whole territory
<b>Policy level</b>	To be supported in the development of tools and strategies for the sustainable growth of the territory and of the local economic fabric
<b>Managing Authority</b>	To be supported by highly qualified businesses that share the same approach to sustainable territorial development and environmental issues

Table 4. Attractiveness's factors	
<b>Businesses</b>	Supply of high-quality services, evidence of potential environmental improvement; incentives for the settlement/relocation in the EEPA
<b>Local stakeholders</b>	Highly qualified businesses to be located in the EEPA; businesses with a strong involvement in the local economic fabric; strong involvement of the local stakeholders in events, decision-making processes and dissemination activities; evidence of environmental advantages for the local economic fabric resulting from EEPAs
<b>Policy level</b>	Evidence of potential environmental advantage resulting from EEPAs; cooperative approach to sustainable growth of the territory and of the local economic fabric
<b>Managing Authority</b>	Highly qualified businesses willing to settle/relocate in the EEPA that share the same approach to sustainable territorial development and environmental issues

An effective green marketing plan has to take into account the selection of the contents to be delivered to the different targets in order to choose the most suitable messages according to the characteristics and needs of each target group.

For each of the target groups of the IA in Budrio, it is possible to identify the messages to be delivered. A first proposal may include the contents below:

- **Businesses** (businesses that are already located in that area and businesses that may settle or relocate there, business associations, chambers of commerce): the main contents to be highlighted in the messages targeted to this category deal with potential competitive advantages both from the environmental and economic perspective (e.g. economy of scale, decreasing energy costs; better energy efficiency, incentives); organizational advantages (presence of a Managing Authority with a consequent simplification of managerial, administrative and environmental issues); network capital (opportunities of entering a network of highly qualified companies with which synergies and projects can be developed).
- **Local stakeholders** (local communities, citizens, development agencies, local associations active in the field of local development): the communication strategy has to highlight the positive impact of EEPAs on the whole territory both from an environmental perspective and from the competitive one.

- Policy level (e.g.: Municipalities, Provincial and Regional Authorities): the Municipality of Budrio, the Province of Bologna and the Region Emilia-Romagna have been playing a very active role in setting up the EEPA in Budrio (the same can be said for the municipalities interested in the other EEPAs in the Province of Bologna). The messages to be delivered towards the policy level have to be focused on the potential role that EEPAs can play in reinforcing the whole territory and on EEPAs as components of the territorial system.
- Managing Authority: the communication may be focused on the opportunity of playing a very active role in order to make the EEPAs become actual drivers for the local development.

#### THE POSITIONING: A MATTER OF DISTINCTIVE FACTORS

In general terms, the distinctive factors and added value of EEPAs and eco-industrial parks can be summarized as below:

- sustainable industrial areas result from a project aimed at improving the environmental sustainability of the productive context;
- sustainable industrial areas allow businesses to implement effective policies for sustainable development policies;
- in the long-term, sustainable industrial areas may represent a positive competitive factor.

As for the industrial area of Cento di Budrio, this paragraph will delve into its distinctive factors. The area is located 20 km from Bologna and it is considered a supra-municipal area; it is about 11 km from the motorway, 6 km from the railway station and 25 km from the airport of Bologna. It was originally located in an existing area and then spread to a second one after an Agreement was reached between the Province of Bologna and the municipalities of Baricella, Budrio, Granarolo, Malalbergo, Minerbio and Molinella.

In 2010, after the approval of the “Masterplan”, the creation of the new Area, with the label EEPA, was started. In the same year, an Agreement was signed between the Municipality of Budrio, the Province of Bologna, the Region Emilia-Romagna and various private entities for the delocalization of the plants of Rai Way OM and Pizzoli Spa and for the development of the productive and commercial area with measures related to territorial, environmental and energy sustainability.

Currently, 150 companies are located in the original industrial area, which are mainly active in the following sectors: metallurgy, mechanics, trade and services (information lastly updated in 2012 within the Ecomark Project). The main distinctive factors of the industrial area located in Budrio can be summarized as below:

- A plant for the recovery of energy from hot and cold fluids, supplied by an important agri-food factory and the district heating network;
- A plant for the recovery of wastewater from the agri-industrial plant to be used for compatible civil purposes (green watering, cleaning streets and aprons, etc.);
- Energy efficiency in buildings;
- High-efficiency public lighting systems;

- Belts of vegetation to mitigate the impact on the landscape surrounding the settlement, that mark the margins of the production complex;
- 25% of the total surface is kept permeable;
- High-quality public and private open spaces: the public green areas, the flower beds and the trees are meant to increase the overall quality of the settlement. Uninterrupted and safe footpaths and bicycle paths have been planned.
- Office of the Managing Body with photovoltaic system on the roof.

The position of the EEPAs is strategic (compared to other competitors) because they are located in Province of Bologna. This is a key strength and should be highlighted.

In general terms, the factors affecting the competitive positioning of EEPAs can be summarized as follows: low cost and high quality of settlement, proximity to target markets, proximity to other actors of the productive chain.

The positioning of the EEPA located in Budrio is particularly affected by the environmental characteristics mentioned above and the green marketing plan has to take into account the critical factors that may affect the positioning of the EEPA in the perception of the targets. The green marketing plan drafted within the European project Ecomark for the industrial area of Budrio highlighted some of these factors. The positioning may be affected by the weak perception of the specific characteristics and potential advantages of the EEPAs compared to other industrial areas; most potential targets (both single business and business associations) are still concerned about the costs and expenses for being located in an EEPA; there is still a weak perception of the environmentally friendly vocation of EEPAs; great emphasis is given to the services and infrastructures already available.

All these elements highlight the strategic value of being well perceived by the targets.

On the other hand the positioning of Budrio's EEPA can be positively affected by the strong institutional framework that may be an attractive factor distinguishing this area from its competitors. For example, the Province of Bologna has inserted the theme of EEPAs in its own Territorial Plan for Provincial Coordination (in Italian: Piano Territoriale di Coordinamento Provinciale – Ptcp) approved in March 2004. The Region Emilia-Romagna passed the Law 20/2000 pointing out that all the new Supra-Municipal areas, zoned for productive activities, must have the features of EEPAs and must be planned through a Territorial Agreement signed by all authorities involved. In 2007, the Region Emilia-Romagna approved the Regional Act for the implementation of EEPAs.

#### THE GENERAL VISION TO BE COMMUNICATED

The features and factors determining the positioning of EEPAs also affect the general vision communicated by the ecologically equipped industrial area. The general vision is composed of the vision, the main subjects involved (businesses, local stakeholders, etc), the success factors of eco-industrial parks and their added value with respect to competitors. There are generally 4 different conceptual visions of EEPAs: technocratic, managerial, governance-based and holistic. According to the technocratic vision, an EEPA is the result of choices about production and settlement location determined by criteria such as proximity, economy of scale, and potential synergies. The managerial vision empha-

sizes the management and considers it the main tool for coordinating the environmental actions of all the businesses located in the industrial area. The governance-based vision considers EEPAs as a governance model for a territory through which public administrations promote sustainable economic development, encouraging and supporting businesses to behave and perform consistently. Finally, according to the holistic vision, EEPAs are tools for developing an innovative and cooperative approach to local development with the cooperation between public and private entities.

This latter is the vision to be communicated by a green marketing plan that shall be designed and applied to the EEPA in Budrio. This EEPA is focused not only on highly qualified infrastructures and technologies to minimize the environmental impact, but it also has to be considered as a territorially defined system composed of different actors (businesses, operators, local administrations, other stakeholders representing businesses and the whole territory) that is integrated in the management of the area and in the implementation of improvement projects.

In a nutshell, it is possible to conclude that the vision to be communicated to promote the EEPAs located in the province of Bologna and, in particular, the industrial area in Budrio may emphasize the role of EEPAs as a strategic component of the whole territory and a driver for local competitiveness and for all the local economic actors involved.

That is why the promotion of these industrial areas becomes also a territorial marketing tool for the promotion of territorial systems and for attracting new investors. This approach is based on the key idea that territorial capital and environment are competitive factors. Therefore, it is advisable to invest in those areas that ensure at the same time advanced ICT, infrastructural and technological services.

#### THE CHANNELS FOR IMPLEMENTATION

The marketing strategy for EEPAs would include the channels for the communication and delivery of messages to the different target groups.

When the local institutions started the procedure to obtain the EEPA Label for the IA in Budrio, a logo was designed in order to build a brand identity of the whole project to communicate the values and the vision of EEPAs in a smart and intuitive way:



Other channels are: the website (the website of the Province of Bologna includes a section devoted to “EEPA”, events (promotion at Ecomondo – an International Trade Fair for Material & Energy Recovery and Sustainable Development that is held in Rimini (Italy); workshops (such as those organized within the European project Ecomark for the promotion of the innovative logistics service in Budrio); one-to-one tools (mainly institutional networking in order to build a wide institutional support for the further development and improvement of eco-industrial parks).

As for this last level, it may be useful to propose and highlight in the communication strategy the possibility of a Settlement Agreement involving businesses, public administrations and professional and business associations. This Agreement should be addressed to all the actual and potential stakeholders of EEPAs and that are responsible for the local economic development. This Settlement Agreement should specify the responsibilities of each one of the actors involved (policy level, businesses, members of the Managing Authority, local stakeholders), the services provided within the area (services improving the environmental management, services reinforcing the competitive advantages, services for the well-being of workers and people involved in the area). This Settlement Agreement may become a further component of the Green Marketing plan aimed at attracting the target groups and promoting the EEPAs.

For more information:

[www.provincia.bologna.it/impres/apea](http://www.provincia.bologna.it/impres/apea)

[www.ecomarkproject.eu](http://www.ecomarkproject.eu)

[www.merproject.eu](http://www.merproject.eu)

<http://fesr.regione.emilia-romagna.it/progetti/pa/i-progetti-dellasse-3-le-aree-productive-ecologicamente-attrezzate>

# Green marketing for eco-industrial parks and productive areas: A pilot Green Marketing Plan (GMP) for the Business Park in Litohoro

*Kostas Konstantinou*

## INTRODUCTION

The Business Park in Litohoro, named Viotechniko Parko Litohorou, is an industrial area in the city of Litohoro in Pieria, a region of Central Macedonia, Greece. The total area of the park is 101.4 ha and it consists of 15 units with 50 employers in total. The Park was conceived in 2005. It was designed in 2006, but it is still under construction due to delays in the procedure. It is very well connected: only 1 km from the port of Litohoro and 3 km from the railway station, near the national Thessaloniki-Athens motorway.

Figure 11. Location of the Litohoro Business Park in Greece

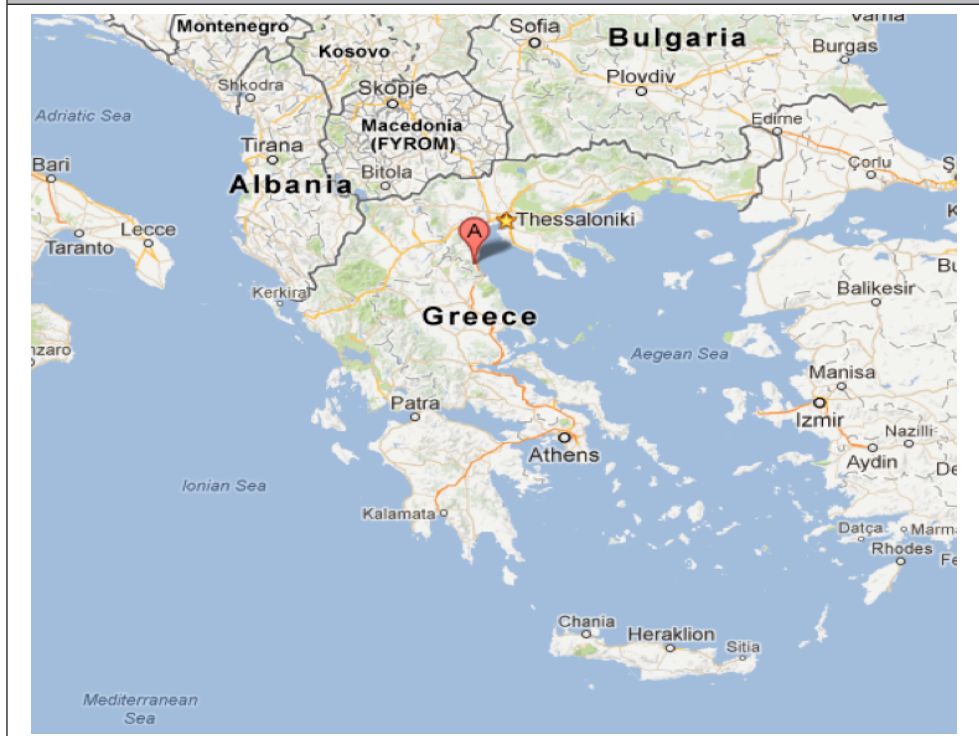
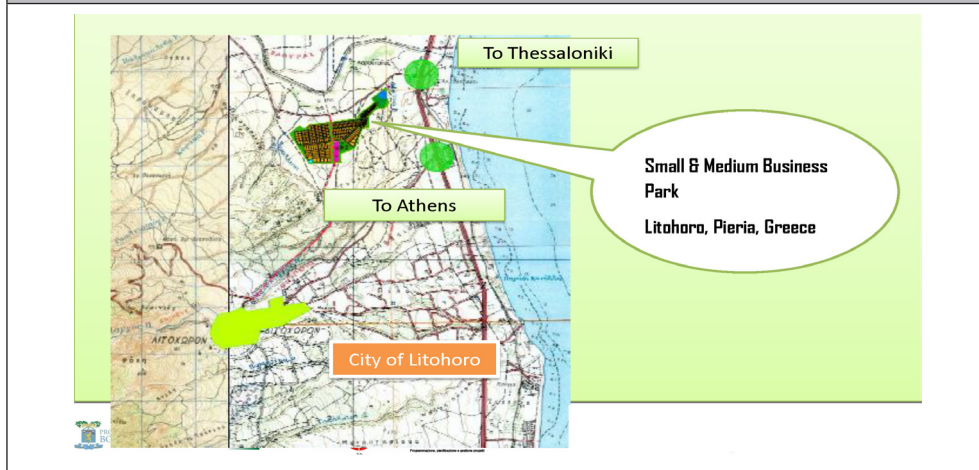




Figure 12. A magnified map of the Litohoro Business Park



The decision to create the park was taken by the Municipality of Litohoro and, according to national legislation, its management was assigned to DEAL S.A. (now renamed to DEADO S.A.). The Park was approved by all the competent ministries and it was granted national and European subsidies.

#### THE CURRENT SITUATION OF THE PARK

An analytical review of the current situation of the Park, conducted by interviewing the administrators of the Park, yielded the following documents:

- Operational regulation of the Park
- Annual expenditure for the year 2011
- Budget of the Park for the year 2012
- List of the parcels of land in the Park and land value
- Annual financial forecast until 2015
- Financial statement for the years 2010 and 2011

The Business Units which are currently established in the Litohoro Business Park are described below:

- Aluminium thermal insulation/sound-proof systems
- Development of photovoltaic systems
- Timber processing
- Furniture production
- Production of concrete and asphalt (road paving)
- Manufacture and trade of tents and sun protection systems
- Auto repair and service workshop.



## THE THEORETICAL FRAMEWORK

An eco-industrial park (EIP) is defined according to a number of specific characteristics such as water recovery and recycling, energy efficiency, building sustainability, sustainable mobility management, waste management, industrial symbiosis, etc. Green Marketing refers to the process of selling products and/or services based on their environmental benefits. Therefore, a Green Marketing Plan (GMP) is a marketing plan that incorporates a commitment to be a green business (green statement) into the marketing efforts.

The Marketing Plan is a guide that allows the users to move towards achieving their objective by promoting an action and marketing plan. The Litohero Business Park's GMP is in line with the green marketing principles and provides guidance on how to achieve the objectives of the Park in Litohero.

An Analytical Plan starts with the description of the current situation in the Park (see introduction above). The analysis is based on the combination of what the Park can offer, what kind of enterprises the Park aims to attract and which is the level of competition that the Park faces. The plan also includes a SWOT analysis that captures the aspects which should be taken into account in designing the strategy for achieving the objectives.

### THE OBJECTIVES OF A GREEN MARKETING PLAN FOR ECO-INDUSTRIAL PARKS

A Green Marketing Plan (GMP) aims to satisfy the customers' needs, while improving the quality of the environment through energy-saving measures and the use of renewable energy. The main objective of a GMP for an eco-industrial park is the achievement of sustainable environmental management and high environmental quality. This is also the main objective of the Litohero Park.

A company that operates according to the typical marketing strategy thinks first of all to its customers' needs and then considers how they can be satisfied whilst making a profit. On the other hand, a company that operates according to the innovative green marketing strategy seeks a way to satisfy its customers' need in a way that is both environmentally safe and profitable.

The principles of a GMP for an EIP can lead to innovations in the sectors of freight transport and logistics, energy efficiency, optimization of water resources management and sustainable waste management.

### IDENTIFYING THE STRATEGIC OBJECTIVES OF ECO-INDUSTRIAL PARKS

Eco-industrial parks aim to create competitive advantages for their member enterprises. For instance, they encourage the companies to adopt business strategies that promote sustainability and efficiency in order to improve their structures and management systems. Moreover, another aim is to improve the quality of life of workers and the local community and to reduce the environmental load of the park. The cooperation and the

integration among the businesses settled in the park, as well as between them and the Managing Authority is another important goal of an eco-industrial park.

Specifically, for the Business Park in Litothoro, the main goals of the park are:

- Regional development based on the generation of employment
- Green development and sustainable operations in the park.

The park focuses on attracting businesses and achieving economies of scale. These two main aspects will increase employment and will promote the green development and management of the Park, as well as the green development of the Region in general.

#### IDENTIFYING THE TARGETS: TO WHOM DO ECO-INDUSTRIAL AREAS SPEAK?

In order to establish and to promote environmental topics and/or green energy, the Litothoro Park should target three specific categories: businesses, local stakeholders and the Managing Authority of the Park. Therefore, the Park addresses the following categories:

- **Businesses:** cooperation with companies that are already located in the Park or companies outside of it, which would like to relocate their activities in the Park.
- **Local stakeholders:** reinforcement of cooperation with local authorities for environmental/ energy issues, as well as with development agencies, local entities and associations representing local residents and bodies, and
- **Managing Authority of the Park:** reinforcement of the Managing Authority of the Park or at least better coordination in several fields at EIP level<sup>1</sup>.

#### IDENTIFYING THE NEEDS AND THE ATTRACTIVE FACTORS

As previously mentioned, the Litothoro Park is still under development. Therefore, its main infrastructures still need to be developed. The planned projects for the Litothoro Business Park are listed below:

- Construction of the internal road network
- Construction of the sewage system
- Construction of a rainwater drainage system
- Construction of a waste processing plant
- Construction and equipment of the administration building
- Construction of a water tank and a water supply system
- Connection to utility networks
- Underground electricity networks
- Telecommunication Networks
- Integrated recycling system

1- An important issue regarding the management of eco-industrial areas is the opportunity to grant companies official representation in the Managing Authority Board.

- Construction of a solar park
- ISO 14001, 50000 and EMAS certification.

Moreover, the cooperation and the good relationships between the local authorities/stakeholders and the businesses in the Park will be important for the successful functioning of the Park.

The main attractive factors are concerned have been listed in the introduction of this paper and have to do mainly with the location of the Park.

#### IDENTIFYING THE DISTINCTIVE FACTORS AND ADDED VALUE OF ECO-INDUSTRIAL PARKS

The Litohero Business Park is located next to a gas pipeline and it will be connected to the supply system when enough enterprises will have settled. The park is specialized in mining and quarrying, food and beverages, tobacco, wood and paper production, etc. Moreover, the Park, as a sustainable industrial area, will motivate the businesses to implement sustainable development policies and follow environmental friendly processes.

In addition to these factors, the firms located in Litohero can achieve financial incentives. Furthermore, it is easier for them to comply with the local sustainable development policies implemented in the Park and in the surrounding area.

#### THE POSITIONING

A SWOT analysis should be conducted in order to investigate the positioning of the Park. The SWOT analysis is based on the idea that elaborating a good strategy means ensuring a good “match” between the external situations faced by an EIP (opportunities and threats) and its internal characteristics (strengths and weaknesses). The SWOT analysis is a simple and widespread method which includes the points of strength and weakness of the EIPs, and the opportunities and the threats determined by their external environment. The SWOT analysis method is the main tool used by marketers in order to choose the most appropriate strategic options that can be implemented by the SMEs located in EIPs. The successful application of the SWOT analysis often relies on its simplicity. The main goal of an enterprise is to be able to convert its weaknesses into strengths, or even skills, by strategically investing in key areas and by effectively connecting several key areas.

The Matrix used to conduct the SWOT analysis for the Litohero Industrial Park, in order to define its strengths, weaknesses, opportunities and threats, is presented in Table 5 below. Moreover, a SWOT analysis has been conducted for SMEs in comparison with Bigger Enterprises, in an effort to better identify the type of companies that the park should target (look at the following SWOT Analysis).

Table 5. SWOT analysis Matrix of the Litohero Industrial Park

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Energy Saving</li> <li>• Quality image</li> <li>• 10-year Green Marketing (Business) Plan</li> <li>• Involvement of all staff in the Green Marketing Project</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• “Green” strategies require high investments and there may not be sufficient financial resources to adopt them</li> <li>• Green strategies are long-term investment</li> <li>• Problematic institutional framework/ bureaucracy</li> <li>• No promotional activities due to lack of funds</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Better enterprise image</li> <li>• Increase of green sales</li> <li>• Gain new consumers and increase market share</li> <li>• Possibility to get green funding</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Declining sales due to the crisis</li> <li>• Local markets must follow the international green trends otherwise they will be isolated and lose a share of the consumers</li> <li>• The implementation of green marketing strategies must be accurate because the media can spot and reveal possible shortcomings</li> </ul>

Table 6. SWOT analysis Matrix of an SME in comparison with bigger enterprises

<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Can be more flexible on decision making</li> <li>• Flexible working practices</li> <li>• Produces its products domestically and can control their quality more closely</li> <li>• Can be more flexible on pricing policy</li> </ul>	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• Competitors with higher turnover and/ or profitability, bigger market share and/ or know-how can adopt “green” strategies more easily</li> <li>• Competitors have better distribution networks</li> <li>• Bigger enterprises can spend more on communication, advertising and promotion strategies</li> </ul>
<p><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• An SME can gain a competitive advantage by investing in green strategies</li> <li>• An SME can better and more easily exploit the dynamic of innovative ideas</li> <li>• An SME can focus on niche markets (carefully pinpointed market segments to maximize profit)</li> </ul>	<p><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Crisis</li> <li>• Declining trend on market size</li> </ul>

## DEFINING THE GENERAL VISION TO COMMUNICATE

Four specific strategies are typical of a Green marketing Plan, namely:

*Lean Strategy*

Create a lower-cost competitive advantage

*Defensive Strategy*

Engage in activities such as sponsoring smaller environmental friendly events and programmes

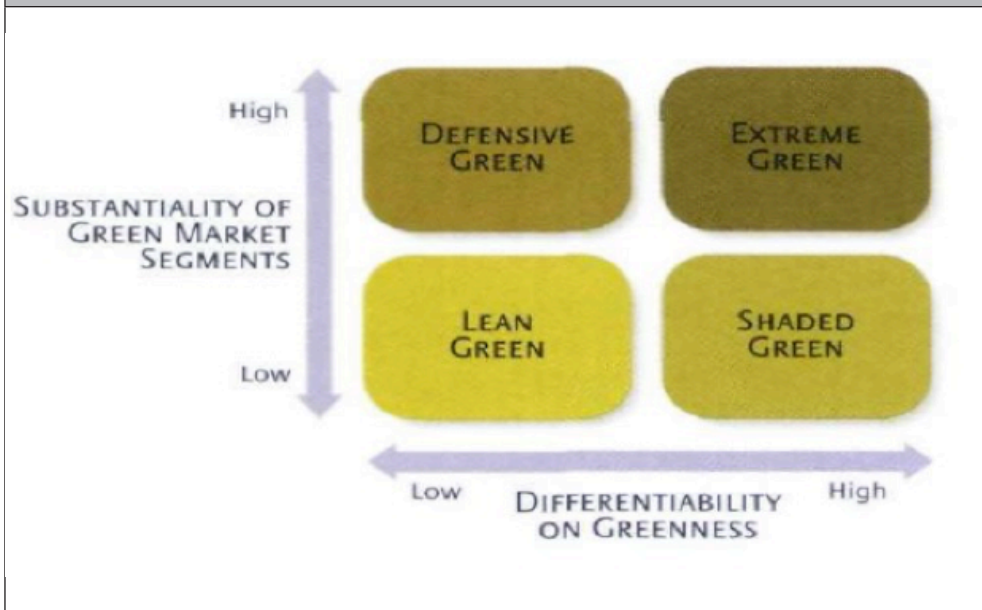
*Shaded Strategy*

Focus on having long-term, system-wide, environmentally friendly processes that require significant financial and non-financial commitment

*Extreme Strategy*

Focus on practices that include life-cycle pricing approaches, total-quality environmental management.

Figure 13. The four typical Green Marketing strategies



The Extreme Green<sup>2</sup> strategy could be applied in the Industrial Park of Litothoro. Companies using the Extreme Green marketing strategy are imbued with holistic philosophies and values. In these companies, environmental issues and responsibility are fully incorporated into the business and product life-cycle processes. Their practices include life-cycle pricing approaches, total-quality environmental management and green activities. As the main objective of this Park is to incorporate the environmental issues into the business and product life-cycle process, it seems reasonable for Litothoro to comply with this Green Marketing Strategy

Since the Park in Litothoro is at an early stage of its development, this means that it will be developed in the unfavourable current economic environment, which could hinder its development. Therefore, it should find market niches that will support its development and follow an aggressive marketing policy for its promotion. The eco-industrial character of the Park is a niche, while Extreme Marketing is the vehicle for promoting this characteristic.

#### COMBINING THE TARGETS AND THE MESSAGES

For the achievement of an effective marketing strategy, the Park focuses on collaborating with the following stakeholders:

- Chambers of Commerce
- Associations, Unions
- Authorities
- Development agencies
- Local community, etc.

Moreover, it has signed memoranda and agreements in order to enhance its communication capacity and marketing strategies.

- 2 The **Extreme Green** strategy is a Green Marketing Strategy according to which companies fully incorporate environmental issues and responsibility into the business and product life-cycle processes. Apart from Extreme Green, most enterprises use a mixture of the alternative Green Marketing Strategies analyzed below:

##### **Lean Green**

If the marketers decide to use elements from the Lean Green strategy they should not focus on publicizing or marketing the green initiatives. Instead, they should try to reduce costs and improve efficiencies through environmentally friendly activities, thereby creating a lower-cost competitive advantage, not a green one.

##### **Defensive Green**

When the defensive green strategy is used as a marketing strategy, it works as a precautionary measure, or as a response to a crisis or to competitors' actions. Therefore, the enterprise uses a defensive green strategy in order to enhance brand image and ease the damage. On the other hand, by using this strategy companies cannot differentiate themselves from competitors on the basis of greenness.

##### **Shaded Green**

Shaded Green companies focus on having long-term, system-wide, environmentally friendly processes that require both significant financial and non-financial commitment. Shaded Green companies see green activities as an opportunity to create innovative needs-satisfying products and technologies.

A green logo should be developed for the Park. The main focus should be to emphasize the green character of the Park and this logo must be used in all advertising activities. The three possible options suggested for the Park's motto are:

- “Green sustainable development”
- “We attempt green”
- “Green Innovation”.

#### THE CHANNELS FOR IMPLEMENTATION

The appropriate promotion of a Park and especially of its green character is very important to the overall success of the whole project. Indeed, the fact that we refer to green promotion makes the task difficult as the implementation of green marketing strategies has to be accurate. A promotion strategy for eco-industrial parks and areas includes traditional communication tools, as well as one-to-one tools.

The promotion strategy for the Business Park in Litothoro focuses on the exploitation of specific communication instruments, such as:

- Advertising (publication on local newspapers, Radio and TV advertising, Internet and Brochures);
- Participation and organization of events (participation in international exhibitions and fairs, participation and organization of conferences);
- Public Relations.

These promotional channels are applicable to all target groups and throughout the geographical area targeted by the Park.

Moreover, it is very important to launch the Park's website. This will facilitate the promotion of the Park through social media, such as LinkedIn, Facebook and Twitter.

Special promotion activities are performed using one-to-one tools. Specific promotional activities must be addressed to the institutional networking groups, which have been mentioned before. The managing authority of the Litothoro Business Park is the contact point for these groups and has the task to secure broad institutional support for further development. The Park should also establish and participate in associations that promote place marketing initiatives

#### CONCLUSIONS

An enterprise entering into a Green Marketing portfolio must be fully aware of what its customers and the society expect. A Green Marketing strategy should involve everyone in the company's management group. The principles of a Green Marketing Strategy should be clearly defined and periodically reviewed.

The green marketing principles should be communicated to all stakeholders and to the public:

**Main media communication motto:** *Green sustainable development-green business growth.*

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