STRATINC

Report

CLUSTERS NEEDS IN STRATEGIC INFORMATION, SYNTHESIS
**Introduction**

STRATINC is an interregional cooperation project aimed to improve the regional competitiveness of local businesses. Gathering six European regions, the project will try and use strategic intelligence methods and tools to identify profile and monitor innovative clusters. The level of access to strategic information to the targeted clusters or clusters to be, will be improved significantly, after defining the common information needs of the targeted sectors, by designing and testing Pilot Strategic Intelligence Platforms (PSIP) in each partner’s region, with the shared objective of developing and supporting innovation.

The partners and targeted sectors are the following:

The first step of the project consists in acquiring a Europe-wide knowledge of the clusters needs in Strategic information, in order to determine if they are different from the needs of isolated companies. Through a survey commonly elaborated and regionally performed, the partners have determined the needs of the identified clusters in strategic information. This in-depth knowledge of regional stakeholders and of their relationships will enable to create sustainable partnerships.

This document presents the synthesis of the knowledge gained per sector.
North Rhine Westphalia (NRW), Germany - New Materials

General cluster description
New materials are materials with application oriented or tailored made features including manufacturing and surface technology.
The new materials sector in NRW includes:
  - polymer industry is the youngest material sector;
  - metal material has a long tradition in NRW and yet of huge impact (45% of employees in this sector in Germany are employed in NRW);
  - textile sector is undergoing a structural change process to offer innovative products with new quality profiles.
It is a dynamic growth market (growth rates up to 11 %) and considered as one of the future global growth markets by international experts. The new materials sector is well represented in NRW with 10,154 companies, i.e. 26 % of all German suppliers.
The return rate for the questionnaire amounted to 26 companies (out of over 700 of companies of all size and type identified for the survey). 16 companies have afterwards agreed to a telephone interview.

Company Information
  - Size
The majority of the companies can be classified as SMEs, with over 70% of the companies employing less than 250 people. Still the distribution ranges from very small enterprises (50% employ under 50 people) up to big companies (around 15% employ more than 250 employees). Around 30 % of the companies have an annual turnover under 2 mill €, and around 25% - above 50 mill (exact figures are not available).
  - Sector
The New Material Sector is represented by a wide variety of fields. Companies from the sectors of plastics, ceramics and glass, composite materials, metals, nano materials and semi-conductors participated in the survey. Over 50 % of them operate in the sector of plastics.
The Sector is characterized by a cross-section technology, while suppliers from different fields are at the same time demanders of New Materials. The field of Rubber and Plastic Production is leading in the sector and shows the biggest demand and supply orientation.
  - Regions
A high density of SMEs from New Materials can be found in the southeastern part of NRW with a high percentage of interregional arrangements. Although the territory of the region is big (34083km²) and the companies are located sometimes in a distance of over 100 km, only the northern part of NRW doesn’t show SMEs from the New Material sector.

Information system
  - Technical infrastructure
Almost every company has an Internet access at their disposal, but mostly without a system to organize the mass of information. Nevertheless the awareness of the importance of Knowledge Management is increasing (with most of companies working with Intranet and exploiting web-based application). Around 61% of the interviewed companies express their need of assistance to identify suitable information sources, one third would like to outsource information research and dissemination and around 20 % are in the need for technical assistance.
- Information sources
  For the vast majority of companies (over 90%) the most important information source is the customers. Further on the Internet, the employees, suppliers, research centers and trade fairs are very important. To some companies, public authorities, such as European, national or regional authorities constitute an information source.
- Categories of information
  The top three types of interesting information are customers, technologies and competitors. They are followed by the category of supplier, of products and processes. Less important is information about service provider, staff and funds.

Company Management
Every SME is aware of the importance of skilled employees especially in technical terms, and most of them are using skilled labor.

Company Strategy
- Market Shares
  The major activities in order to save or to increase market shares are identification of new markets and enhancement of product quality. Increasing of production and developing new products are medium to less important, even when the development is the most practiced activity.
- Competitors
  The majority of companies indicate a strong competition at an international level. The degree of internal competition is rather high due to the small size of companies, with the possibility of eliminating regional competitors by concentrating on niche products.
- Problem related issues
  In common are troubles with computer and equipment breakdowns. All SME indicate market related influences, when prices or business cycle problems affect their work. Social issues derive from HR modification or the problem of finding qualified manpower that creates the problem of motivation of employees.

Innovation
The kind of information preferred by companies is on markets, technologies and customers. Product innovation is regarded as an issue with high priority.

Networks
- Participation in networking
  Most of the enterprises indicate the participation in networks of different style and size. However, the activities are very fragmented. Another form of information exchange between the different networking would assist to more synergies. The major tasks within the networks are: joint research, material science, human resource development, communication and growth.
  Polymer industry already knows 3 initiatives: “Chemsite”; and “Chemcologne” are working on innovation for plastic processing; “K-sector” initiative comprises around 200 companies in the field of plastics with competences in developing, production and marketing. Their aim is to support the collaboration between enterprises and exploit this synergy potential.
  Metal material has an established cluster of industrial skills (competence network): FORMETA metalworking forum, offering a wide range of industrial metalworking and metal
processing expertise and is characterized by a unique regional concentration of enterprises. It is strengthened by links to industry related research institutes throughout Germany, training and education programmes, product testing/certification, film/surface diagnostic with a common transfer and presentation platform.

Textile: The objectives of the Zukunftsinitiative Textil NRW (ZiTex) are technology transfer and innovation potential for SMEs, internationalisation, enhancing of learning aptitude and qualification of SMEs and employees and increasing experience exchange.

Moreover, new materials & their applications is a strategic “competence field” of the cluster policy of the Ministry of Economic and labour in the Land NRW which supports NeMa, the “Interest Association New Materials Incorporated Society”. NeMa was created in 1998 to advise, bring together and actively supports suppliers and prospective users of New Materials. It is a network of 85 companies and research institutes for material technology and provides attracting marketing services allowing its members to concentrate on their research-, development-, and construction competence.

- Motivation for participation in networking

Major reasons for participation in networking are: to break into new markets; creation of synergies by means of competence grouping; as well as the reduction of R&D costs. R&D got the highest score as a motive to participate in partnerships.

Conclusions:
1. The interview analysis shows an affinity for management of strategic information.
2. The instruments developed and provided within the STRATINC project could be a driver for less fragmentated networking in the sector of New Materials in NRW.
3. For identification of new markets economic intelligence tools proposed in STRATINC are beneficial.
4. A platform with organized information regarding competition would be useful for SME, which in general have limited access to such information. More transparency and time efficiency are only two advantages of the platform.
5. The question of innovation reflects again the need for efficiency, especially for SME with highly limited time and staff.
Region of Murcia, Spain – The Juice Processing Industry

General cluster description
The Juice processing industry in Spain is facing a concentration today. Out of 70 companies in the sector six companies rule the trends of the industry. In Europe the sector is dominated by the multinational companies, such as Coca Cola, PepsiCo and, recently, Eckes-Granini and Conserve Italia. But these companies still do not have a strong presence in Spain, where local companies dominate the market. The Spanish national leaders today are Garcia Carrion and Zumos Pascual. Other companies, despite their strong regional presence, are still very small and it is predicted that there will be less companies in the future. Since 1999 the industry is experiencing a continuous growth (more than 4% a year) caused by the increases in demand. Main reasons for these increases are the increase of consumers’ purchasing power and changes in lifestyle, plus the healthy image of new products enriched with vitamins and natural ingredients. The region of Murcia has a long tradition of fruit processing and the major part of the Spanish juice production is located in this region (16 companies out of main 40, and 27 out of 70 in total). Out of 27 companies in the region 13 companies extract juice from citrus products and sell it as a bulk to other companies, and other 14 companies produce juices from different fruits and/or package them with their own trademark. The survey focused on the second group as being the most interesting due to their most advanced technologies used to provide a wider range of products which they commercialise to distribution chains and/or final consumers.

Company Information
- Internationalisation
Two of the companies interviewed are part of multinational group, but in both cases are commercialised with the trademark of the Spanish branch. Some companies consider bringing the production into less developed countries as a means of accessing cheaper raw materials, low-cost labour force and new markets. Only one company (Garcia Carrion – national leader) seems to have an international strategy implying the establishment of factories abroad.
- Product portfolio
Specialisation of the companies is high, close to 80% produce juice as a main product. Some companies diversify their product portfolio by producing soups and other preparations done in a mixture of fruits and vegetables, baby food. Two companies diversify into the wine industry.
- Size
The average data on the companies interviewed: 356, 64 employees, and over 69 million euros in turnover. However, only four companies interviewed are not SMEs.
- Subcontracting
Subcontracting is not common in this industry. The more common approach is to have providers (e.g. raw materials). Today the diversification of the products and the wide range of juices have made it possible to have a fixed production with the advantages of specialised labour, planning, etc. that it represents.

Company Management
Intellectual property rights are not considered to be the major competitive source of the companies. Trademarks had proven to be valuable and protect effectively the innovations done by the companies. In that sense the juice processing companies have a professional management of those rights, subcontracted to patent attorneys, and protected in all their relevant markets worldwide.
The new challenge to protect the innovations by using patents, as juice compositions today lack novelty and inventive step. Design on packaging is important. However, as the packaging industry worldwide is dominated by the few companies, the final producers of juices do not invest heavily in packaging and coherently do not apply for design protection.

- **Organisation**

The biggest department of the companies is the Marketing Department. Many companies have an R&D department (usually called the department of quality and new products). Only three big companies have a department for information management.

- **Education**

Most of the employees work on a factory and do not have relevant education. Quite a few of the employees working in R&D, Quality Management, and New Products development or as a Technical director have Master degree; some (in four of the companies) have PhD education.

**Company Strategy**

- **Orientation**

73, 3% of the companies express that their primary strategy is the development of new products. More than a half expresses the importance of the detection and contest of new markets. Diversification was chosen by 30% of the companies and just two of them (13%) indicated that export was their strategy orientation.

- **Competitors**

The companies know their competitors quite well, as there are just 70 companies in Spain and there are not many juice importers.

- **Constraints**

The major constraint comes from the concentration of the commercialisation chain, which imposes tied conditions and lowers the prices.

**Information System**

- **Electronic networks**

All the companies have an Internet connection. More than 90% use intranet and mail server. Any technician has an access to a computer and e-mail account.

- **Press subscription**

All the companies are subscribed to different magazines, national and international, and also receive some publications, which are sent out for free. Press is considered to be a valuable source of information.

**Innovation and watch**

Almost all the companies admit that the information relevant for obtaining innovations comes from the market and providers of equipment and other input for the production.

- **Fields of survey**

Companies express their interest in regulations, followed by market, technologies and products. Competitors, suppliers, customers, process and financing are of average relevance, while standards, training and recruitment are not relevant.

- **Sources of information**

The most valued sources of information are the fairs, followed by Internet. Sources of average relevance are: professional publications, research institutions, professional associations, suppliers
and customers. The less relevant sources of information for most of the companies are institutions (European, national and regional).

- Kinds and needs of watch

Almost two thirds of the companies claim they have a watch methodology, although only one company has implemented a formalised tool. Some companies use the strategic information related to customers, trade and marketing. Formalised watch is concentrated on customers, suppliers and markets. Companies do not watch partners, networks or clusters. Almost all companies interviewed express they need help in defining their “requirements for information” and also “potential sources of information”. Mostly all of the companies see the provision of information as relevant. There is a clear possibility that a PSIP could be established and companies might consider it interesting.

Networks

- Participation of the company and management in organisations

All the companies are members of at least one of the following organisations (or all at the same time):

- Agrupacion de Conserveros: association of companies, provide information and lobbying (links to regional administration). Negotiate every year the reference prices of fruits and vegetables;
- National Technology Centre on Canned Food (CTNC): A private organisation ruled by companies themselves and they provide good information on norms and laws. Its main activity is the supply of advanced technology services and innovation through R&D projects;
- AILIMPO: Spanish Interprofessional Association of Lemon and Grapefruit, gathers agricultural producers and 13 citrus fruits extraction companies;
- Canned Food Companies Association;
- ASOZUMOS: the Spanish association of juice producers;
- AIJN: the same association as ASOZUMOS at the European level.

- Motivations for participation in networking are (in order of relevance):
  - Lobbying activities; reduction of R&D costs and rationalization of the purchases; new markets; share competences; reputation of the area; outsourcing, information.

Conclusions:

1. Almost none of the companies have a satisfactory provider of information. There is a clear need for information on norms and regulations, markets, clients and technology. The last aspect (technological innovations) is not covered by any of their current providers.
2. Only one of the companies has a formalised knowledge management system where all the information is stored and retrieved accordingly with complex searches.
3. All companies are familiar with information technologies and a web based PSIP would be a satisfactory solution for all of them.
4. Companies are willing under certain conditions to share their own information in a common platform with their competitors. But the process and the property rights have to be clearly specified.
The Region of Central Macedonia, Greece – ICT sector

General cluster description
The ICT sector in C. Macedonia is mainly constituted of SMEs. Bigger companies are multinational IT companies, such as Microsoft, HP, Oracle, SAP, Motorola, Siemens, and IBM, which have offices or headquarters in the region. Major activities include: Software (Operational applications and Internet applications), IT Services, Distribution of office machines and PCs.

Until 2003, the sector had experienced a continuous market growth (growth rates up to 6%), but since then growth rates have decreased (3 %). Software and IT services were damaged the most. Main reasons for the sales decrease are the sifting of bigger markets to multinationals, the limited number of big companies that take advantage of national projects, the over-loaning of SMEs and their lack of modernization. Strong points of the sector: Good performance in R&D, a considerable number of companies have R&D expenses higher than 5% of annual turnover; Access to considerable EU technology, research and development funds; Strong scientific support from international universities and research institutes; High participation in subsidized research co-operations and in R&D collaborations. Weak points of the sector: Lack of spin-off companies from research, usage of new technology is still on introductory level, deregulation of telecom market, level of user attitude to the new technologies, organizational level of user companies, limited size of the national market. Opportunities are: Greek government has put a strong emphasis on the development of IS (Implementation of the Operational Programme for the Information Society); PC and Internet usage growth; exploitation of research result; EU Enlargement; spreading of ICT to other developing sectors of the economy, such as tourism; customization of existing software applications; increase of until today low use of ICT and therefore bigger spreading of ICT to the population and companies (SMEs). Acceleration of IS works, creation of a substantial mass of users in the business and general public, which will motivate the stagnant/negative market growth is also considered important. Other factors are: cost reduction of infrastructure/equipment and usage of telecommunication services. Higher standardization of solutions/products and therefore increase of turnover with parallel cost reduction; focusing on market niches; realization of mergers and acquisitions and added value from customized software applications are also among the chosen strategies.

The total number of companies in the region of Central Macedonia identified to be part of ICT sector is 105. The survey was performed on 21 SMEs of different size (from less than 10 to more than 100). All companies interviewed are involved in the production of both hardware and software, and not only in commercial activities.

Company information
- **Size**
  The companies’ sales turnover ranges from 10230 € to 86 million € for the year 2003. The trend of sales turnover appears to be increasing between 2001 and 2003. The number of employees ranges from 3 up to 122, with only one company employing more than 100 people, and out of the rest a half employing up to 10 employees and another half – from 10 to 100 people.
- **Activities**
  The main activities identified are related to business informatics and system integrators, service providers to business and sales of hardware. Only two companies are exporting.
Company Management

- Management indicators
Quality and customer satisfaction are the most important management indicators while planning exists only in short term and is quite rare. Although intellectual property rights are considered to be very important, very few companies have registered any.

- Structure
The administration department exists in most of the enterprises. Engineering and design plus software development department is included in most of them. Only two companies out of 21 interviewed have an Information management department. Marketing department is mainly outsourced. R&D is performed by most of the SMEs but not by an organised department.

- Education
Life-long training is considered very important but mainly performed internally. Only a small part of the directors have a high degree education and nearly none of them have any educational background in ICT. Less than 1% of the employees have a PhD degree. 5% have a Master degree. 30% have a University degree and 50% - degree from Technological Institutes.

Company Strategy

- Orientation
The orientation of most of the companies appears to be the detection and conquest of new markets. Improvement of product quality, development of new products and specialisation are considered of great interest. There is also an interest in vertical diversification, while export is not considered as of great interest.

- Impulsion
The volatility of the ICT sector explains the difficulty of setting goals and targets, the majority of the companies have a short term view. Qualitative factors are considered the most important ones, while quantitative factors are set up by the companies in short term. Companies in the sector are in general market followers.

- Competitors
Companies do not have a good knowledge of their competitors: the competitors mentioned were either local or in the national market. Only few of the companies stated competitors in Europe or worldwide.

- Constraints
The financial situation of the Greek market is considered as the most serious commercial constraint. Few firms did also mention the inability for market planning due to the volatile character of ICT market.

The only technical constraint that has been mentioned by most SMEs is the supply of insufficient telecommunication infrastructure.

Social and environmental constraints appear not to be of great importance.

Information System
The companies are connected to Internet mainly through an ADSL connection. Most of the companies have their own LAN, intranet and mail server. Companies are in general subscribed to one business magazine, as well as regional, national and international daily press. Very few of the companies consider themselves as diligent readers of scientific and technical publications.

Innovation and watch
The fields that the companies consider most interesting to research are customers, technologies, markets and products.

The most relevant source of information is Internet. The sources of information that companies consider as very important are (in order of importance): employees, customers, suppliers and exhibitions, as well as other companies. Information from public or private research institutions, professional publications, universities, laboratories, consultancy businesses, and professional associations is also considered to be of some relevance.

Watch
More than half of companies declare that they have a watch methodology. Although very few of them have a systematic watch methodology. Most of them do not apply neither formalised nor documented methodologies. Only suppliers and customers watches are formalised. Suppliers and regulations are the fields that are considered to be important. For most of the fields watch is performed empirically. Financing watch is outsourced by most of the companies. No watch is performed on regulations, law and research of clusters or networks. The fields that have been identified among other needs of watch are: identification of potential sources of information; help with the formulation of the requirements in information.

Networks
All the interviewed companies are participating in the Association of ICT companies in Northern Greece SEPVE and the Chamber of Commerce and Industry. Only two of them participate in a formal cluster. Most of the companies express their willingness to participate in a cluster. Although for 2/3 of them the main motivation for cluster building is the ability to get new markets. From the results of the survey a mentality for cluster building can not be identified. The links and feedback among actors, and building of collaboration networks and multiple forms of interaction are missing.

Conclusions

1. PSIP could satisfy the need for the improvement of quality of the products and services by providing information on technologies and innovation management techniques.
2. PSIP would be a system that organises and watches information related to markets.
3. The proposed methodological guide book that STRATINC will produce will satisfy the need for information management.
4. A collective procedure for the required strategic information, i.e. a collective articulation of the demand for new technologies, a collective nature for learning process, a collective nature for knowledge acquisition and generation, could create a collective mentality for cluster building.
Community of North Tenerife, Spain – Agrofood, Wine sector

General cluster description
The wine growing in Tenerife in the last two decades of the 20th century was characterised by use of traditional methods of wine growing; high costs arising from complicated nature of the terrain, fragmented ownership and small size of the vineyards; little potential for mechanising production and the under-qualified workforce; a large number of old wine growers maintaining their vines out of family tradition and love for the land, without giving any consideration to more efficient methods of vineyard management. There are challenges arising from the growth of production and from the intensification of competition (in the domestic and Canary Island market, as well as at the national and international level). With the arrival of the 21st century the sector is coming to a general change-over and modernisation, with restructuring vineyards towards more competitive forms of management, replacing the traditional system and implementing improvement methods in wine growing management techniques. Marketing has emerged as one if the leading challenges for the coming years. While in the previous decade it was possible to sell wine without any problems of surpluses with an averagely intense promotional campaign, sales have become more difficult to make in this decade. Marketing efforts are hampered by too many regulation organisations, concentrating on promoting a “farm”, not a product, lack of clear target on red and white wine. It now requires an intense and coordinated effort in the constant struggle to maintain and increase market share. The intensification of promotional efforts should be the task of wineries, Regulating Council and other institutions. These efforts will have to be actively coordinated through multi-year promotional plans, seeking greater clarity and coherence in the sector’s demands for support from public institutions. There are 95 SMEs in the Wine sector in Tenerife.

Company Information
- **Size**
The number of employees in the companies is between 2 and 50. Subcontracting is not the main scope of the enterprises.
- **Export**
Export is considered as very important but only 7 companies, which are members of the Export Consortium, are exporting to Europe. Competitors are mainly local.

Company Strategy
Companies' strategy is to consolidate a position on the market which is endangered by a rise in local competition and a turnover of staff. Companies try to achieve this by means of consolidation, diversification and differentiation of the quality of their products by focusing on the integral supply of wine making services (to facilitate the continuity of professional services), looking for new forms of organization and formulas to ensure a stable supply and quality, modernisation of processes (new growing systems, mechanisation); using oenology, which is clearly striving to improve quality and stability of the wine production; intensification of marketing effort from wineries, regulating councils and other institutions. These efforts have to be coordinated through multi year promotional plans. Maintaining and, as far as possible, increasing market share in the Canary Islands is a fundamental objective for the coming years.

Company Management
Management indicators are formalized for Wine growing, Oenology and Marketing.
Networks
Networking already exists in the sector in the form of: ASVITEN – Viticulture Association, Export Consortium, and Cluster for cellar owners. Motivations for participation in networking are the following; it increases the ideas and learning, consolidates market positions. It can also lead to rationalized purchases, stimulate outsourcing and facilitate lobbying.

Information system
The main informative tool is Internet. Apart from that there are: scientific & technical publications regional daily press, national daily press and finally professional and specialized magazines.

• Sources of information
The most relevant sources of information are: customers, suppliers, competitors and exhibitions. Of average relevance are: employees, cooperation/alliances, professional publications and local institutions, Universities and laboratories, professional associations, public/private research institutions, Internet and European institutions. Consultancy businesses are not considered as relevant sources of information.

Innovation and Watch
• Fields of survey
Top three factors that have an influence on the Wine sector as fields of survey are markets, technologies and products. Competitors, suppliers, customers, processes, financing aids and subsidies are considered of average relevance. Recruitment and training are of some relevance.

Conclusions
1. The interview analysis and the answers have been obtained through a dialogue with all the stakeholders involved in the wine sector. In this sense, the STRATINC project sought the support and the opinions of everyone in the sector in Tenerife and showed an affinity for management of strategic information. The conclusions are the following:

- Challenges arising from growth of production and from the intensification of competition in the domestic and Canary Island market.
- New challenges in wine growing, oenology and marketing wines; three inter-dependent areas in which developments should made it possible to consolidate, diversify and differentiate quality wine production.
- In the area of wine growing, the aim of introducing new growing systems and improved varieties is to produce a grape that will allow continuity and improvements in making wines that can be differentiated by their sensorial attributes. Controlling production costs by mechanizing trellis growing techniques will help to improve the value for money of the wines.
- Opportunity to improve wine growing production with public support.
- In the area of oenology, improving the quality of wines should be approached through oenological and sensorial definition, greater diversity through the creation of special wines and a search for stability of the quality, both within the same vintage and from one year to another.
- It is essential that the wineries give clear signs of a wine growing industry that is immersed in a process of re-converting their growing methods, defining the varieties and other qualities required by the wine growing sector. An improvement in quality and a clear definition of wines is only possible with stable and two-way co-ordination between wineries and wine growers.

- In the area of marketing, the growing competition in the wine market, due to the increased production of quality Canary Island wines and the appearance of new Spanish and foreign wines and advantageous value for money conditions, make it necessary to intensify the marketing effort both in the local market and further a-field.

2. All companies are familiar with information technologies and a web based PSIP would be a satisfactory solution for all of them.

3. PSIP could satisfy the need for the improvement of quality of the products and services by providing information on technologies and innovation management techniques. There will also be a specific space for wine, with clear and concise information on the world of wines, with the emphasis on the Regulating Councils, wine cellars and denominations of origin from the island of Tenerife.
Lorraine Region, France – Wood sector

General cluster description
Regional environment: 27,000 Workers, 50% geographically concentrated in the Vosges. Lorraine is ranking 2nd French wood region (10% of all French production). The wood sector includes activities from silviculture and forest exploitation to products of first (sawmilling, paper pastes) and second transformation (joinery work, housing frames, furniture and wood, paper and carton wrappings) of wood. The identified sectors for the survey were sawmilling, wood-working and furnishing. During the 1990’s the wood sector in Lorraine has undergone a sharp decrease of the jobs number in furniture (except kitchen and office), sawmilling and paper production. The survey was performed on 30 SMEs in the Wood sector in Lorraine.

Company Information
- Size
Companies’ size varies from 2 to 250 employees. They are mainly technician and family companies with a wide relationship network and little information culture. Subcontracting is not the main scope of the enterprises.
- Sector
The main activities that have been identified are sawmilling, wood-working and furnishing. Most of them have a second activity.
- Export
Export is considered as very important, both to European and international market.

Company Management
- Industrial Properties
Few enterprises register their industrial property.
- Management indicators
Management indicators are not formalised as management tools in general.
- Organisation
Administrative department exists in most of the enterprises. Most companies have a marketing department represented by 5% of the employees on average. R&D activities are performed by very few of the SMEs. Information management and Design – Engineering do not exist in these companies.
- Long-life training and Education
Long-life training exists is performed in most of the enterprises internally for 1% of the budget and amounts on average to 4 days per year per employee. Questions concerning employees’ education could not be answered by most enterprises.

Company strategy
- Orientation
Detection and conquest of new markets, export (mainly to Europe) and diversification rank first in companies’ strategic orientation, followed by improvement of products quality and development of new products. Specialisation is not considered of great interest.
- Competitors
Competition is mainly local and national. Companies claim to know their competitors quite well.

- **Constraints**
  Main constraints encountered are technical (qualification of personnel) and environmental (legislation and regulations).

**Information system**
- **Electronic Networks & Applications**
  Most companies have a dial-up connection to the internet, established mail server. More than half of them are using Local Area Network.
- **Press subscription**
  Most of companies are subscribed to (in order of decreasing importance): professional and specialised magazines, scientific and technical publications, business press and regional daily press, national daily press, international daily press.
- **Sources of information**
  Main ones: employees, costumers, suppliers, competitors, professional associations and exhibitions, followed by cooperation and partnerships, professional press, local and national authorities. Universities, research units, internet (interest in internet as an information source is growing) and European institutions and consultants are not considered as relevant sources of information.

**Innovation and Watch**
Markets, technologies and products are considered of great relevance; regulations, competitors, suppliers, customers and financing aids and subsidies of average relevance; process, recruiting and management – of some relevance. Training is not considered as relevant at all. Interviewed SMEs do not have a formalised watch methodology. They use meetings and contacts as tools of searching for information, and writing or speaking to manage and disseminate this information.

**Networks**
- **Participation of the company and management in organisations**
  Selection Vosges: 12 sawmill companies; own trademark, which guaranties quality in the wood production; partnerships with paper and particle board industries and training. The identified keys of success for this network are the involvement of regional key players, a clear strategic vision of its objectives or compatible interests of its members.
  The PLAB network: gathers furniture companies. The identified keys of success for this network are the presence of a charismatic champion, a politic and financial support and strong contacts and partnerships.
  GIPEBLOR is an inter-professional network of the wood sector in Lorraine gathering private and public members involved in the wood sector. Its activities consist in the promotion of wood products and companies, technical and economic studies for the setting up of new products, the search of financial support, the support of regional training and watch.
- **Motivation for participation in networking (in order of relevance):**
  Share competences, get new markets, diversify the customers, rationalize the purchases, develop the outsourcing, raise the production quantity, and create a lobby.

**Conclusions**
STRATINC is aimed to try and use strategic intelligence methods and tools to identify profile and monitor innovative clusters. The first step towards this objective was to get an in depth knowledge of the targeted sectors, their needs in strategic information and motivations for networking in order to determine if these were different in clustered companies than in isolated ones.

This has been achieved through a survey which striking results, as far as the wood sector in Lorraine is concerned, are:

- a segmentation of the sector corresponding to the specialisation of companies, the main segments emerging from the survey being sawmilling, woodworking and furniture manufacturing;
- The fields of survey and watch companies considered as most relevant are: markets, technologies and products. Companies seem to be mostly “market-needs oriented”, i.e. market followers;
- The sources of information considered as relevant by companies are external (fairs, exhibitions, conferences, etc.) and internal (employees, costumers, etc.);
- Their motivation for developing networks is to share competences in order to get new markets, which means they are aware of the relevance of networking.

Meeting the demand in information of SMEs on markets, reorienting the search for information towards relevant sources will support the decision making process of companies. It will foster their long-term vision and generate a trust between the players, developing their competitive approach and anticipation capacities, enabling them to reach their objectives of getting new markets and diversifying their activities.

Concrete outputs:

- Taking the segmentation of the sector into account and meeting the specific needs of each segment has already enabled to profile an emerging cluster in the field of furniture manufacturing, whose motivation has been to reach new markets (for instance calls from hotels and resorts).
- Internal information being as relevant as external one to companies, CRITT Bois has launched a Knowledge management audit and process.
Oslo Region, Norway – Biotechnology Industry

General cluster description
The Oslo region is the leading Norwegian centre of research and industry within the biotechnology, medicine and health sector. The region contributes to over 40% of the total Norwegian biotech revenues. The number of new companies focusing on biotechnology is quickly rising. Many of these are materializing in close connection to the R&D institutions in the region. Unique health registers and a positive attitude towards medical innovations places the Oslo region among the most outstanding test-markets in Europe. The Oslo region's specialization in biotechnology and biomedicine is evident in a number of fields, such as analysis and treatment of cancer, cardiovascular and immunology research, aquaculture, animal health, marine resources, bioinformatics and functional genomics. 85 companies in the biotechnology industry in Norway were approached¹, and a total of 66 (77, 6%) biotechnology companies participated in the study.

Company Information
Most of the participants represent relatively new companies (1991 - ). 41% was established in the year 2000 or later.

- Size
The majority of the companies (85%) have fewer than 50 employees. Out of the rest 6 % employ from 50 up to 200 people, another 6 % - from 200 to 400 people, and 3% of the companies employ more than 400. Of all the employees within the biotech and pharmaceutical sector in Norway, 61% work in an Oslo-based firm. Over half of the companies (58%) have an annual turnover (as of 2003) under 10 million NOK (or around 1.2 million Euros). Accordingly the majority of the companies in the industry can be categorised as SMEs.

- Form of ownership
Of the participating companies 67% received initial capital from private entities, while the occurrence of public and private ownership is equally spread. 67% are purely national, while 18% of the companies have up to 50% share of foreign ownership.

- Activities
Most of the companies are product suppliers, a few are service providers, while 30% are a combination of both. The majority of the companies are aiming towards international market.

Strengths, weaknesses and strategic focus of the industry
The results of the survey indicate that the greatest strength of the biotechnology industry today is access to professionals. Research community and competence are also considered well developed aspects. Norway is a small, homogenous and cohesive country in terms of health and the Oslo region is among the most outstanding test-markets in Europe. There is excellent information available for clinical trials through unique registers of births, national health, cardiac history, orthopaedic implants and incidences of cancer.

¹ The survey was conducted on biotech companies in Norway; therefore the data presented reflects information on Norwegian companies in general rather than Oslo region in particular in case it's not mentioned specifically. The Oslo region represents 61% of the national employment in the sector.
Marketing, internationalisation, capital access, financial results, business development skills and competitive strength appear to be evident weaknesses. In Norway there is a lack of industry giants to drive development, but the government has traditionally shown great interest and willingness to invest in biotech and medical research activities.

The majority of the participants consider it essential for the survival of the industry that internationalisation and venture capital become greater fields of focus. Seed capital and relations between industry and universities, as well as internationalisation - which all demands creations of alliances, marketing and selling of ideas, are also areas in need of greater attention. An educational program for entrepreneurs is also requested, but not to the same extent as the above.

The Federation of Norwegian Business and Industry (NHO) has formulated their ambitions for the biotech industry. They want Norwegian government to stimulate the biotech industry to become an important income source when petroleum revenues come to an end. In order to achieve this goal, NHO has outlined a set of strategic criteria including increased access to manpower, modernization of the public sector, an internationally competitive tax system, development of infrastructure, increased focus on research and development and political attitude and attention. Some of these criteria have already been implemented, such as taxation benefits for companies that undertake research and development.

**Government sponsored programs**
The study indicates that the biotechnology industry in general is well familiar with the existing government sponsored programs. A total of 91% of the participants have received some kind of support from these programs, and about the same percentage claim to know these instruments rather well. The Research Council of Norway in particular, but also Innovation Norway and former The Norwegian Industrial and Regional Development Fund are the prominent institutions and the industry's first contacts for information about the public support system. All the companies within the industry who have received support from the public support system have received financial support, and a majority of these report this support as crucial for their business development.

**Conditions for the biotechnology industry**
Most of the participants express a positive view on the industry's future in Norway. When it comes to commercialization of research on the other hand, the optimism is more variable. The industry generally finds it difficult to commercialize ideas in Norway, the reason being lack of competence and experience in the field of business establishment. There seem to be a general opinion that competence and research is not being prioritised. Limited financial framework and low focus on the industry from the authorities seem to be unsatisfactory, especially in relation to commercialization and long-term development.

**Networks**
Networking is hampered by a large number of agents and little cooperation between them. Some of the most important organisations in the industry are:

MedCoast Scandinavia is a Swedish/Norwegian networking organisation founded to further strengthen and develop the biomedical sector in the Göteborg-Oslo (GO) region. MedCoast acts as a catalyst for collaboration between scientists, businesses and the public sector, and works to
promote entrepreneurship and the commercialisation of innovative ideas. Additionally, MedCoast works to facilitate venture capital in the biomedical sector and to increase foreign investments. MedCoast’s vision is that Gothenburg-Oslo will become a major biomedicine region connected to Medicon Valley, the life science cooperation from Copenhagen area through Malmö towards Stockholm region. To further strengthen Scandinavia as a world-leading region in Life Science/biomedicine the leading regional actors in Scandinavia are now joining forces. The Scandinavian Life Science Database - a comprehensive non-profit database of Scandinavian companies active in the Life Science area was initiated in 2004 by some of the leading actors in Scandinavia. There was a need for a joined initiative when it comes to collecting and presenting company data in Scandinavia. The Scandinavian Life Science Database was formed as a joint database based on multiple local and regional databases - now merged together into a common interface. Over 1000 companies from Norway, Denmark and Sweden with a focus on Life-Science have joined the database. On the website www.scandinavianlifescience.org you can search the database and find the company you are looking for.

Medinnova AS offers a professional assistance within medicine and healthcare dealing with technology transfer, project management, research collaboration and business development. In addition to its core business, Medinnova is a part of InnoMed. InnoMed is a national network collaboration between Innovest, Medinnova SF, NORUT MH and SINTEF Unimed. InnoMed - the National Centre for Innovation and Business Development in Health Care - has an important role in strengthening the commercialisation of Norwegian healthcare products.

Norwegian Bioindustry Association (NBA) was established autumn 2001 by representatives for Norwegian biotechnological industries and the Confederation of Norwegian Business and Industry (NHO). The Association is an independent member organization with purpose to promote development of Norwegian biotechnological trade and research. It is also a prioritized task to participate in building a bridge between biotechnological industry and research communities in universities and colleges. The association has a nationwide perspective.

Birkeland Innovasjon AS was established January 1, 2004 as a direct result of changes in the Norwegian legislation late 2002 where the universities were given the right and duty to commercially exploit research results, and share any financial gain from this with its researchers.

The Norwegian Radium Hospital performs groundbreaking cancer research. Based on the research at the hospital, Photocure was set up in 1993 to undertake the commercialisation of products and equipment based around a new and unique photochemical cancer research. The Radium Hospital is also engaged in cooperation with private biotech companies.

Conclusions.
1. The Norwegian Biotechnology industry is highly science based and located in close proximity to the university life science campuses. The Oslo region has 61 % of the national employment in the industry.
2. The cluster is relatively young and small compared to Sweden and Denmark, and a broader Scandinavian approach has been chosen in order to make the cluster stronger and more visible in the international scene.
3. Innovations are science based and it takes many years of costly testing before products can enter the market. Product developments are therefore normally extremely high.
4. Exchange of information is limited in many cases, and strategic core information is not shared with others in order to protect investments. Information that is shared, is often based
on face to face interaction. A PSIP for general and non sensitive information has been established (www.scandinavianlifescience.org).
5. The main challenge of the cluster is a fragmented system of innovation actors, lack of seed money and large industrial cooperation.
The STRATINC consortium

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