



STRATINC

STRATINC

Strategic Intelligence and Cluster Building

Report Overview Sectoral needs

Sectoral Situation in North Rhine Westphalia regarding New Materials

Interview based

ZENIT GmbH, Mülheim an der Ruhr, August 2004

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1. INTRODUCTION

1.1 STRATINC – PROJECT OVERVIEW

STRATINC stands for Strategic Intelligence and Innovative Clusters and shall create a virtual community on regional intelligence. STRATINC aims to improve the competitiveness of territories, local businesses and industrial clusters through strengthening the capacities of strategic intelligence and foresight, which will allow territories and companies to manage innovation and to address the challenge of globalisation, in particular with a Europe-wide vision. STRATINC is financed by the European Commission in the frame of Interreg IIC and partly by the Ministry of Economic and Labour of the Land North Rhine Westphalia (NRW).

The project follows various objectives in the framework of improving competitiveness and innovation of industrial clusters and small and medium sized enterprises (SME) through Information mastering and networking at an European level by:

1. rising awareness in industrial (already existing or potential) clusters or in individual SMEs on the importance of information mastering;
2. identifying the strategic information needs of SMEs in different selected industrial sectors taking into account the regional differences depending on the differences of technological development, of position in the value chain or simply of cultural dimension;
3. benchmarking existing methods and tools from the Economic intelligence framework (technology watches, business or competitive intelligence, foresight scenery) and build practical templates to facilitate the choice of most adapted intelligence set ups;
4. producing a methodological guide book on the different software applications for collection, analysis, sorting out and diffusion of information implementable by clusters and SMEs;
5. facilitating the investment in the different regions in different adapted tools and to test their implantation, implementation and use;
6. favouring the creation of business co-operation activities within the SMEs and clusters thanks to the different transregional exchanges, workshops, etc. between enterprises and clusters.

As project results it is anticipated to gain knowledge about the need for strategic intelligence in the sectors, clusters and areas. The participation of less-favoured regions in sharing leading-edge methodologies and tools at an European level shall be enhanced as well as the access to “collective strategic intelligence” through knowledge-sharing for businesses, business organisations, universities and R&D institutions, local development agencies, etc.

With regard to the competence field of New Materials in NRW the project intends to ameliorate the competitiveness and innovation performance of SMEs within the region of NRW. The actors of New Materials in NRW are facing decisive resistances as high R&D costs, long-term periods spanning from the idea over innovation to start of production or considerable information deficits between supply and demand.

Within the present survey the sectoral needs of New Materials regarding strategic innovation and information management should be identified, equivalent to the second bullet point of STRATINC general objectives.

This survey represents the basis for the envisaged internet platform, established during the project. The internet platform corresponds to the Pilot Sectoral Intelligence Platform (PSIP) and has a pilot character according to the creation of a virtual community on regional intelligence. During the project it has to be discovered if it is possible to initiate cluster building potential by using a PSIP.

1.2 NORTH RHINE WESTPHALIA (NRW)

NRW is the leading business location among all other federal states. The economy is a mixture of large-scale enterprises and SMEs (small and medium sized enterprises). NRW has in the meantime around 700.000 SMEs. They represent 73% of employment and 47% of the gross value added¹.

18 million inhabitants are living in the federal State of North Rhine Westphalia. With 18 million inhabitants it is the major land in Germany. It corresponds to a share of the population of 22%. The most urgent problems are structural change, unemployment and environmental damages. The average unemployment rate for NRW in March 2004 was 10,4% but with extreme regional differences: Ruhr Area 15% and the region around Bonn 7,3% unemployment rate.

1.3 CLUSTER APPROACH IN NRW (COMPETENCE FIELDS)

Competence field policy, cluster policy and regional innovation policy are different expressions, which can't be clear distinguished in practical terms. Theoretical definitions already exist. Cluster is regional concentrations of production lines with a sectoral level as the centre. Within competence fields the regional concentration is based on networking and resources. Individual, organisational and operational competences are involved. Within regional innovation systems the emphasis is build on growth and innovation and it is defined upon its technical potential.

As cluster and competence fields do not represent inevitably innovation systems, competence fields are admittedly defined upon their future growing potential. NRW key actors agree upon the impossibility to build a cluster or a competence field out of nothing. Basic resources should be available on location (sectoral close SME, university assistance, etc.) The development and the support have to fix on existing economic structures following the principal of "strengthening the strength"².

With the approach of competence fields the Land government is pursuing a strategy of focussing structural policy tools to regional growth points. The objective is to bundle

¹ Business Location NRW: <http://www.gfw-nrw.de/gfw/GfW.nsf/name/IDStandort-EN>

² „Clusterentwicklung und Kompetenzfelder – ein Vergleich, Eindrücke aus drei Regionen in NRW“ Dagmar Grote Westrick, Dieter Rehfeld, Institut Arbeit und Technik Gelsenkirchen, G.I.B.-Info 2/2003

structural policy tools to initiate competitive, employment creating and sustainable operating clusters³.

In NRW till the late 70ies the business development concentrated on the provision of economic infrastructure, development of industrial areas and acquisition of new companies, but in the following years diversified tasks have been added. For example technology transfer, start-up companies, networking management, development of clusters, competence fields or supply chains, etc. are aims for business development organisations. It is not a matter of concentrating on a new branch but to sustain already existing branches in the local or regional environment. Drivers to support their growth could be specialisation and differentiation. It is an approach of “strengthening the strength” after the former structural policy implementation has more concentrated on “overcoming the weaknesses”.

In addition to the described task enlargement, there is an institutional differentiation as well. These are not only the different organisational kinds of communal business development but in every commune or region there are several facilities of business development: development agencies, regional offices, regional marketing associations, institutions for technology transfer and respectively incubators. The mentioned institutions are not the consequence of a precise strategy but vary from region to region with a differently coordinated coexistence of duties and Institutions. This is the background for re-orientation of structural policy, which aims at a strategic bundling of different concepts and activities in the same competence field. The reorientation is effected since the 1990 under the characteristics of cluster, regional networking and competence fields in NRW. Significant for this approach are the following objectives:

- Elaboration and support of a regional profile, which is well-known national or even international
- Regional competence of new technology and knowledge should be well directed towards future trends and enhancement. This aims at bundling the little of resources
- To link regional actors (companies, policy, regional authorities, universities) it is important to bear in mind that there should be a common orientation about the activities (joint overall concept)
- The co-action of different resources intends to create a dynamic of a more innovative environment. Informal processes and knowledge exchanges are anticipated and shall provide a matchlessness of the region that is difficult to imitate.
- The difficulty of imitation is well founded in the social complexity of processes.

It is too early for a systemic evaluation as economic changes only take effect in a long-term period. Cluster management can develop in different forms. This is on the one hand connected to the different conditions in single regions within NRW and on the other hand connected to not yet consistent ideas about the outcomes of cluster management. The cluster concepts for the Ruhr Valley have been already explained in

³ „Zur Zukunft der Europäischen Strukturpolitik nach 2006, Positionspapier des Ministeriums für Wirtschaft und Arbeit NRW“, Ministerium für Wirtschaft und Arbeit des Landes Nordrhein Westfalen, 2004

the first draft (contribution to the Oslo Meeting). The competence fields (CF) in NRW have been expanded in order to build significant points for communal and regional structural policy.

Apart from the CF of New Materials there are eleven other CF, ranging from Information and Communication Technology (ICT) over Life Science and Mechanical Engineering to Tourism and Energy.

Within the competence field policy, oriented towards industry, there are four different aspects to consider:

1. Sustainability of branches, which are under structural change processes. Exploitation of cooperation potentials to support international competitiveness of SMEs.
2. Development of new sectors, from university, shall be supported.
3. Assistance to create new growth impulses in the frame of starting up new businesses
4. Support the restructuring of diversified industries.

An example of a successful networking implementation in NRW is described below, the dortmund-project.

In Dortmund a successful development away from the traditional coal and steel industry has been established. It is a way – typical for the strategy of competence fields – that is only after a longer time period yielding fruits. Innovation policy is a more long-term strategy than crisis management. The technology park in Dortmund was established in the 1980. It is an institution to transfer technical and natural science into economic success. In the meantime more than 200 national and international companies with more than 8.500 employees benefit from an intensive technology transfer and exchange of knowledge. Dortmund is focused on future technologies with cross section character: Microsystems technologies, the innovation drivers for applications and production (e.g. safe vehicle construction).

The Land government, commune and economy in collaboration intend to foster the structural change in Dortmund. Since summer 2000 a dynamic network supports young high tech companies to a future-proof location⁴.

1.4 WHAT ARE NEW MATERIALS?

These are materials with application oriented and tailor made features including manufacturing and surface technology. The research areas are:

- Polymer
- Semi-conductor
- Ceramics / glasses

⁴ „Moderne Industriepolitik, NRW im Herzen Europas – Europäische Industriepolitik aktiv mitgestalten“, Harald Schartau, Minister für Wirtschaft und Arbeit des Landes Nordrhein Westfalen, Veranstaltung am 4. Dezember 2003

- Metals
- Composite materials
- Textile materials

Materials apply to vehicle construction, to aerospace, to life science technology as well as to consumer goods industry.

It is necessary to differentiate between traditional mass production and research-intensive New Materials. They represent a cross-section technology towards manufacturing industry and are mostly used in future technologies as information, energy, traffic, medicine, manufacturing and environment technology. High R&D costs emerge as well as long transfer periods (idea to innovation) and information asymmetry between supplier and demander.

Growth rates up to 11% indicate a dynamic growth market. New Materials are considered as one of the future global growth markets (result of a Delphi study). 85% of the asked international experts in the frame of the Delphi study are regarding this sector as especially relevant.

1.5 NEW MATERIALS WITHIN NRW AND CLUSTERING ACTIVITIES - EXAMPLES

Within the sector of New Materials NRW has in total 10.154 companies. This corresponds to 26% of all German suppliers in the field of materials in Germany. Concerning the R&D suppliers and universities NRW has a dense structure with around 60 organisations. This number comprises universities, universities of applied science, research institutes (fraunhofer institutes) and science centres included. Remarkable is the high figure of companies in the chemical sector and in the production of plastics. These are foremost bigger companies with many workstations and are very important for NRW. A Delphi study implemented in 1998 in NRW indicates that chemical industries will advance the development of New Materials. Materials have inherently an interdisciplinary character. The reasons are the variety within the process of formation and the potential combination in this cross section technology. The production of New Materials is categorised as a growth industry, but the economic impact is difficult to quantify because of the cross section character. New Materials do not create per se new demand, as they are moving in a substitution competition.

According to its dimension NRW can be distinguished again into several regions. The land can be compared to States as the Netherlands, Belgium etc. Within NRW there are many different regions and characteristics of enterprises in the sector of New Materials.

The versatile characteristics can be shown in the already existing networking in the field of New Materials, which can be divided into three categories, polymers, metal and textile materials. The **polymer industry** is the youngest material sector (set up in 1950). Today three initiatives can be exemplary specified, the initiative "Chemsite" in the Emscher Lippe Raum as well as "ChemCologne" in the region of Cologne and Leverkusen. They are working on innovation for plastic processing. The "K-Sektor" 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 the enterprises and to exploit synergy potential.

Metal material and metal material research has a long tradition in NRW. Furthermore it has a huge impact regarding the advancements of old materials or the identification of new areas of application (simply or combined with other materials). NRW is the most important place respectively metal producing and –processing in Germany. More than 45% of employees in the metal sector in Germany are employed in NRW.

One further established cluster is the FORMETA Metalworking Forum. The FORMETA competence network is distinguished by a wide range of industrial metalworking and metal processing expertise and is characterized by a unique regional concentration of enterprises based in and around the cities of Wuppertal, Solingen and Remscheid. This cluster of industrial skills is strengthened by links to:

- industry-related research by institutes spread throughout Germany,
- industrially oriented, business-sponsored training and education programs from trade apprenticeships to degree-level studies,
- product testing/certification and film/surface diagnostics with a
- common transfer and presentation platform.

FORMETA is operating (internationally known) in Solingen with cutting goods and in Remscheid with tool kits in cooperation with the University Wuppertal. In Südwestfalen the focus is laying on surface engineering, surface finishing, tubes and rollers. The region around Düsseldorf and Duisburg has a big steel industry and it dominated by large-scale enterprises.

The third sector is the **textile sector**. Within Germany the textile sector is undergoing a structural change process. The offer of revised and innovative products with new quality profiles (technical textiles) is the key sector for the future. NRW takes the leading position in Germany with the Zukunftsinitiative Textil NRW (ZiTex) established in 1996. Their objectives are technology transfer and innovation potential for SME, internationalisation, enhancing of learning aptitude and qualification of SME and employees and increasing experience exchange.

2. *SECTORAL NEEDS – THE SURVEY*

2.1 *PARTNER*

In order to cover the demand oriented approach a leading agency regarding the sector of New Materials has been identified within a tendering procedure. It is the “Interest Association New Materials Incorporated Society”, (Interessengemeinschaft Neue Materialien e.V.), NeMa. NeMa has been established in 1998 in order to advise, bring together and actively support suppliers and prospective users of New Materials in this continuously growing market. Meanwhile, NeMa is a network of more than 85 companies and research institutes for material technology. During the past six years NeMa succeeded to become an attractive and flexible Marketing Service provider for all companies and Universities who develop in different material sections high tech products and key technologies. This approach allows the members to concentrate on

their research-, development- and construction competence. NeMa phases out marketing relevant activities.

NeMa is financed by the Ministry of Economic and Labour in the Land of North Rhine Westphalia. In the frame of their six years period NeMa socialised with a wide range of companies, initiatives and Universities in the field of New Materials, activity focus in NRW.

2.2 THE COMPOSITION OF THE SURVEY

Within the Local Working Group the modus operandi for the interview implementation was discussed and the members agreed to a two-stage interview phase, which is forming the basis of the available survey. In collaboration with NeMa over 700 companies (all size and types) have been identified. Each company received a mailing with an information letter about the project and a three pages fax reply to be filled in by the managing directors.

The fax questionnaire comprised questions in the following fields:

- Placement in the field of New Materials
- Information technological infrastructure (knowledge management applications)
- Practical experience and needs within the information providing
- Existing and potential networking activities

The return rate amounted 26 completed questionnaires. The outcomes of the first interview phase have been gathered and analysed by NeMa. They are the bases for quantitative analyses. Figures and graphs are shown in the following part of this chapter.

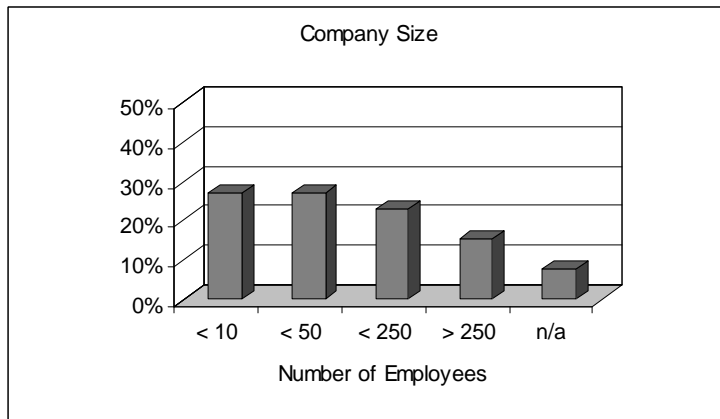
To engross the new knowledge about the sector, telephone interviews have been added to put the finishing touch to the survey. The participants of the fax interview have been called and 16 of them agreed to a deeper interview. The guideline for the telephone interview comprised questions regarding the company management, the corporate strategy, innovation and watch. Further more there are questions to potential cluster participation or networking membership.

2.3 THE FAX INQUIRY

The outcomes of the 26 fax replies contribute to a demonstration of the diversified and geographically diverged landscape of New Materials in NRW. In the following the results have been visualised according to the order of questions. The abstention from some SMEs in some questions has been considered.

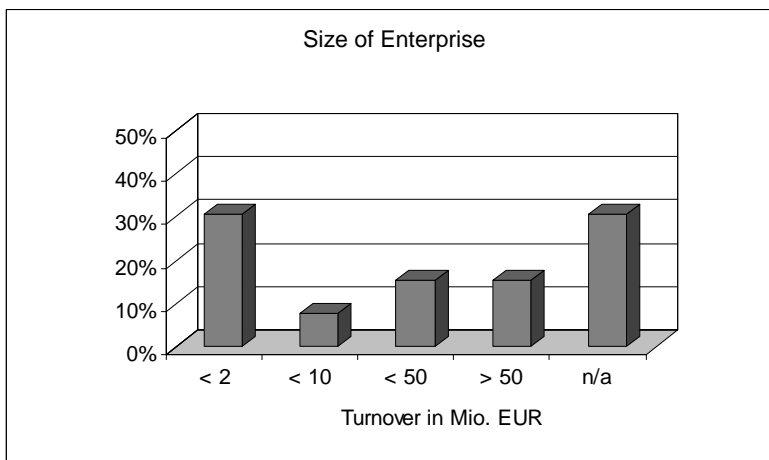
2.3.1 Company Size

The distribution of the companies ranges from very small enterprises up to a big company. Most of them belong to the classification of SMEs. Nevertheless around 15% of the companies employ more than 250 employees⁵.



Graph 1, Company Size: Number of Employees

Regarding the annual turn over 28% have not specified their figures. The distribution of the remaining 72% is either under 2 Mio € (22%) or above 50 Mio € (22%).

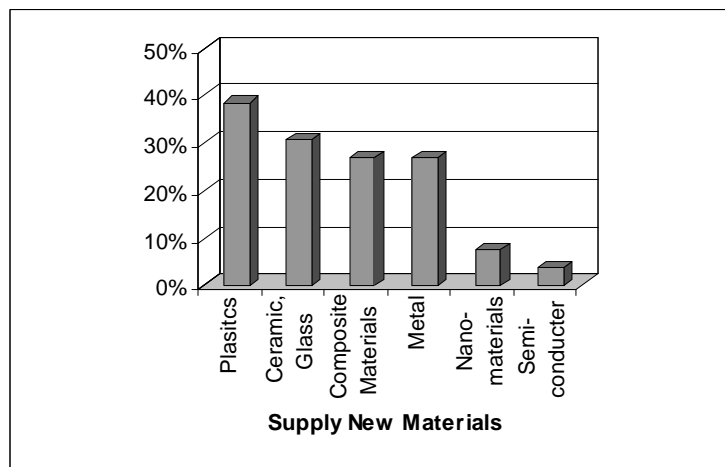


Graph 2, Company Size: Turnover

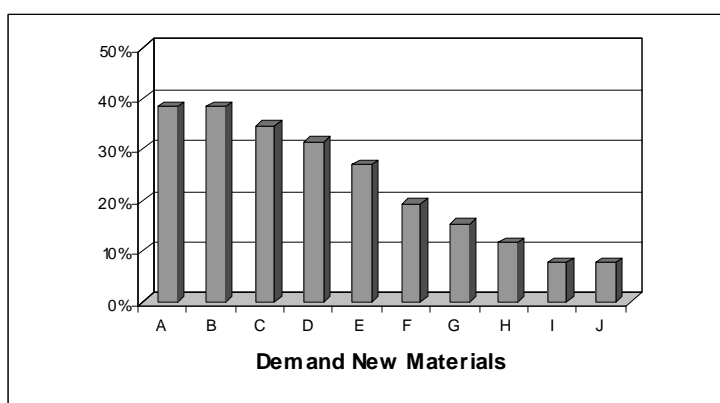
2.3.2 Sector

As already explained in the introduction the variety of fields within the sector of New Materials is versatile. The enterprises within the survey are supplier from the sectors of plastics, ceramics and glass, composite materials, metals, nano materials and semi conductors. Over 50% operates in the sector of plastics. At the same time these companies are demanders of New Materials as well. The range is more detailed. The following two graphs are showing the distribution of supply and demand within the interviewed companies.

⁵ EU Definition of SME: not exceeding the number of 250 employees and an annual turnover of 50 Mio €.



Graph 3, Supply New Materials



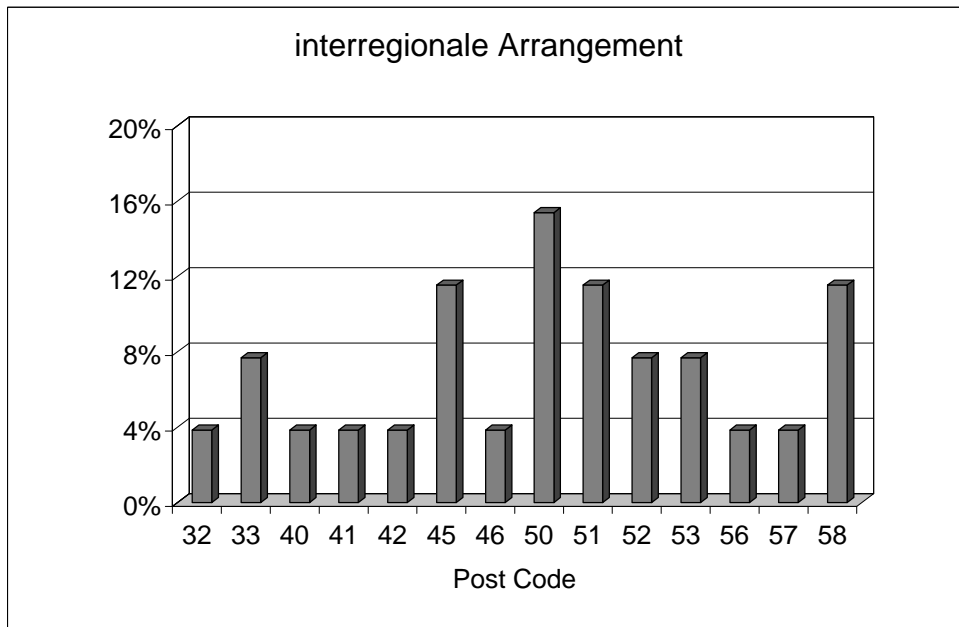
Graph 4, Demand New Materials

- A: Production of Rubber and Plastic Products
- B: Metal production and processing
- C: Mechanical and Plant Engineering
- D: Production of Metal Products
- E: Chemical Industry
- F: Glass and Ceramics
- G: Medical-, Measurement- and Automatic Control Engineering and Optics
- H: Producing of devices for generation and dissemination of electricity
- I: Production of automobile
- J: other vehicle construction

The results of the sectoral questions are displaying the cross section spreading. Whereas the sector of Rubber and Plastic Production shows the biggest demand and supply orientation. A further sector, which has historical origins, is the metal production and processing sector. Especially the Ruhr Valley with its big steel production companies had a forming role, but within the structural change process the production underlies diversification procedures. Cross section technologies in the field of New Materials are playing an important role.

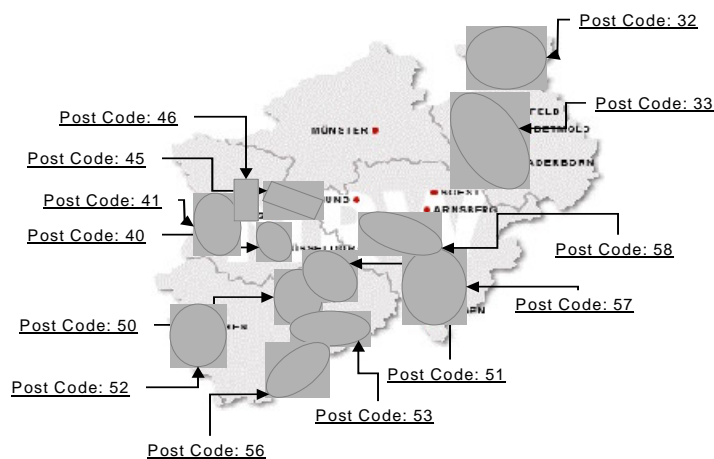
2.3.3 Regions

Within the region of North Rhine Westphalia (34083 km²) the companies are located sometimes in a distance of over 100 km. The regions around Rheinland, near Cologne, Westfalen, Bergisch Gladbach, Ruhr Region (Essen) and Bielefeld are showing a high density of SMEs in the field of New Materials.



Graph 5, Interregional Arrangement

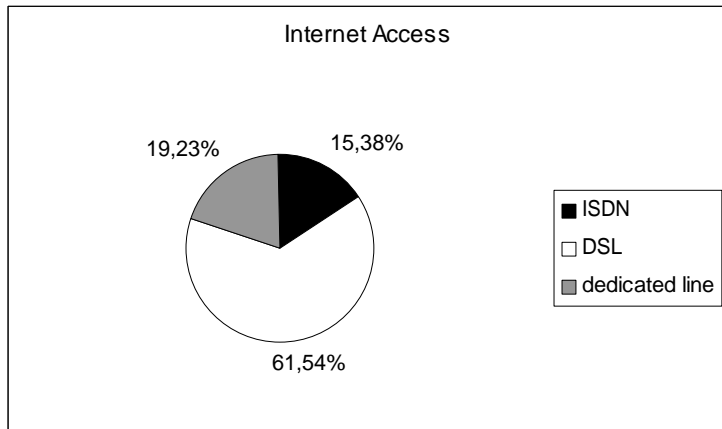
The map below shows NRW and additionally the assigned postcode areas. A high density of SME from New Materials can be found in the southeastern part of NRW. Only the northern part of NRW doesn't show SME from the new material sector.



Graph 6, Map of regional distribution

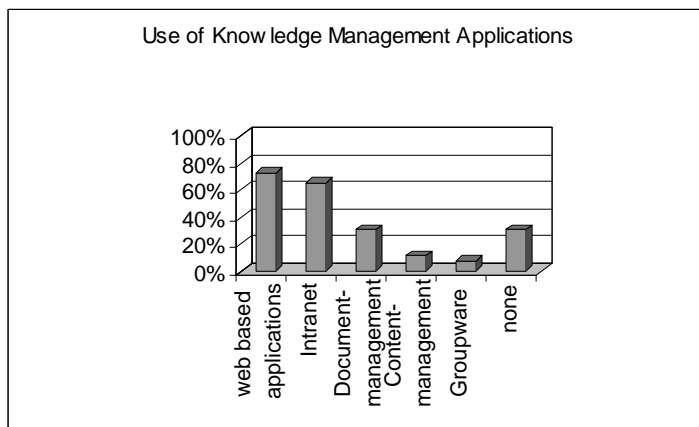
2.3.4 Technical Infrastructure / Equipment

Regarding the technical infrastructure, almost every company either with less than ten employees or with more than 500 employees have an Internet access at their disposal. All of them have thus access to a vast range of information, but mostly without a system to organise the mass of information.



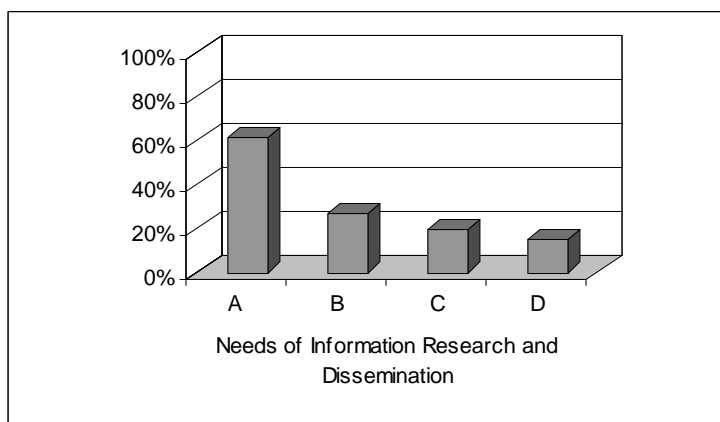
Graph 7, Internet Access

In the following graph the user attitude is visualised. The quantity of firms not using Knowledge Management Applications is rather high. The explanation is likely based in the size of the SMEs. Around 50% of the SME have less than 50 employees and the installation of a Knowledge Management System does not seem efficient enough to justify the investment.



Graph 8, Use of Knowledge Management

Nevertheless the awareness of the importance of Knowledge Management applications is increasing because most of the companies are working with Intranet to distribute and to gather company relevant information. The most frequently used tools are the web-based applications. Even small SMEs are exploiting web-based applications. Within the questionnaire most of the companies express their need of assistance by identification of suitable information sources (around 61%). For small companies with a small number of employees the information flood via Internet is difficult to deal with. Still one third would like to outsource information research and dissemination and around 20% are in the need of technical assistance.

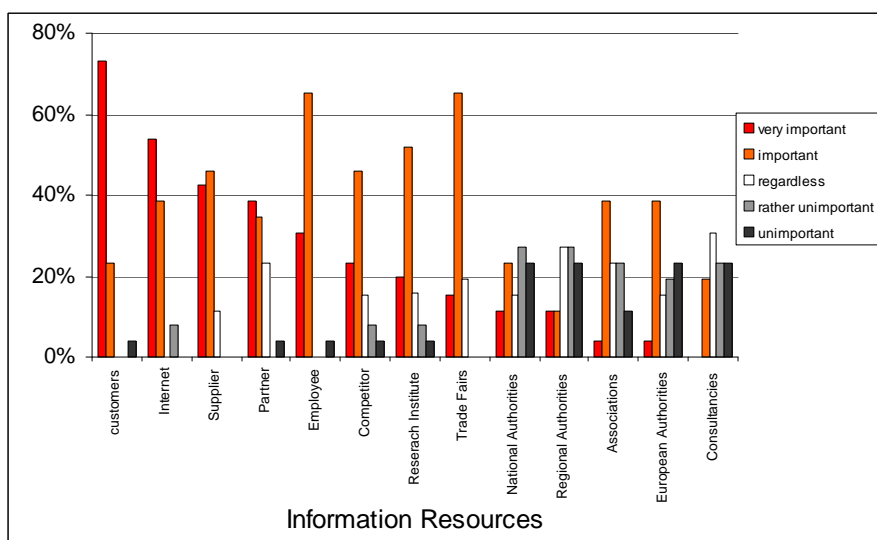


Graph 9, Needs for Information Research

- A: Support to identify suitable information sources
- B: Outsourcing of information research and dissemination
- C: Technical support (soft ware) to information distribution
- D: Others

2.3.5 Where to inform? Information sources

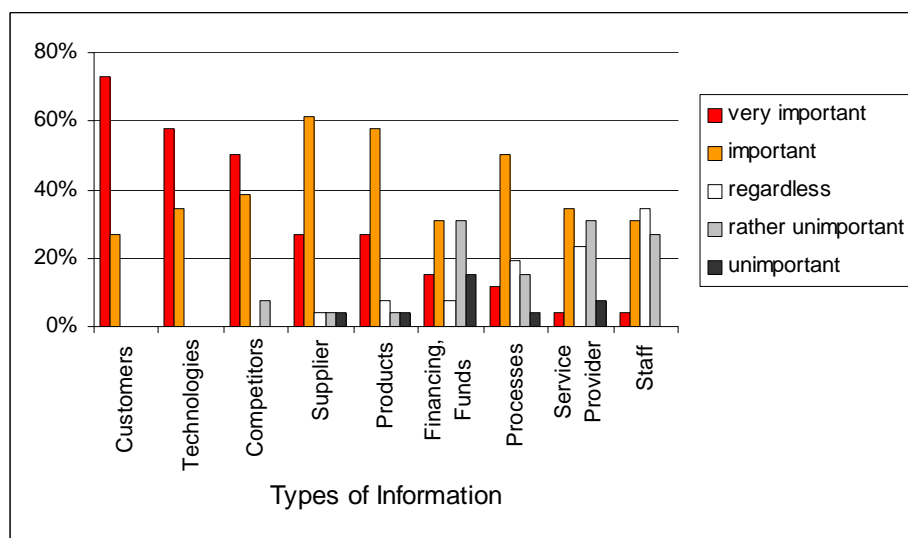
Every company has its own information sources and the difference is depending on the type of company. But in spite of everything the most important information source are the costumers (over 90%). Other important information sources are the Internet, the employees, suppliers, research centres and trade fairs. To some companies public authorities constitute an information source, such as European, national or regional authorities. It's a balanced distribution.



Graph 10, Information Resources

2.3.6 What categories of information would be interesting to watch out?

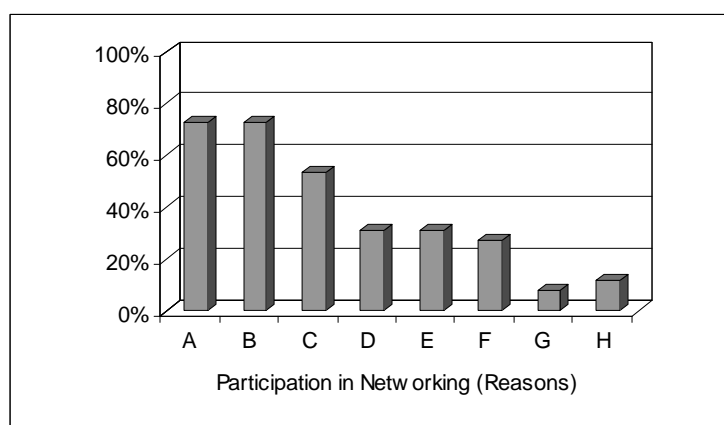
The arrangement of interesting information is similar to the former graph. The top three of interesting information are customers, technologies and competitors. What is important as well is the category of supplier, of products and processes. Less important are information about service provider, staff and funds. In this graph as in the former it is obvious that the classical categories of information are still the most important ones.



Graph 11, Information Types

2.3.7 Participation in networking

Most of the enterprises participate in networking (more detailed information in Annex). The drivers to commit oneself to a network are mostly to break into new markets and the creation of synergies with grouping of competences. What is interesting as well is the reduction of R&D costs. Enterprises strive for R&D cooperation when needed to strengthen the innovative potential and efficiency of new developments. Less important are categories of lobbying or permanent benchmarking, etc.



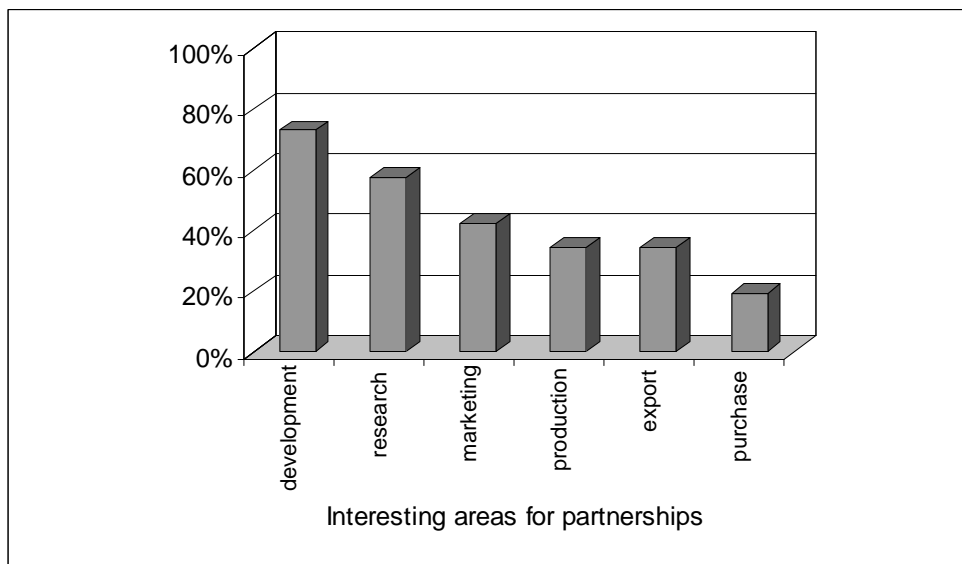
Graph 12, Reason for Participation in Networking

A: Discovering new markets

B: Creation of synergies by means of competence grouping

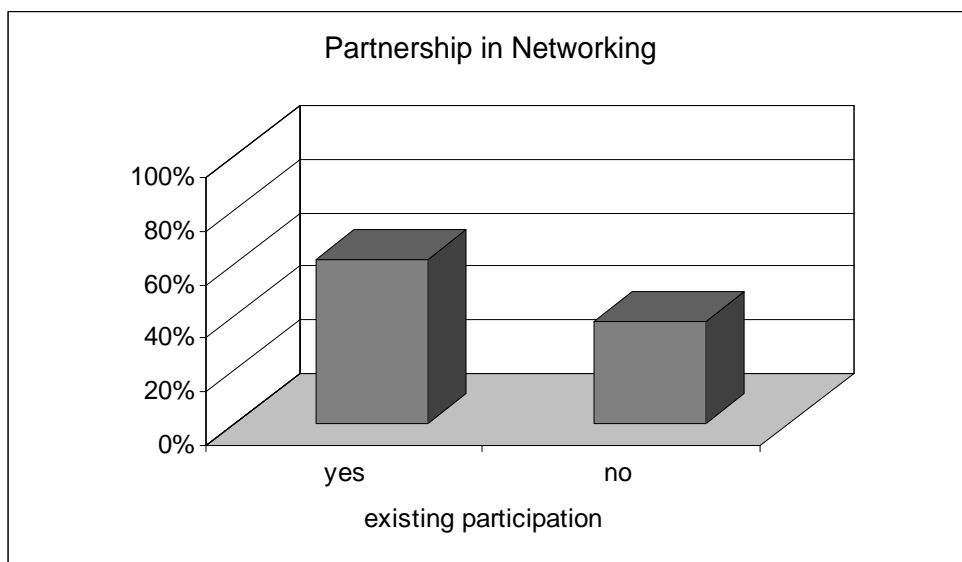
- C: Diminution of R&D expenditure
- D: Building up a lobby
- E: Permanent Benchmarking
- F: Diminution of purchase expenditure
- G: Amelioration of the regional image and strengthening the own location
- H: others

Furthermore the interviewed companies ranked their motive (force) to participate in partnerships. Within this ranking the development of new products as well as research got the highest scores. Marketing, production and export are interesting for the companies but offer a little incentive.



Graph 13, Interesting Areas for Partnerships

In the following graph the existing participation in partnerships is displayed. Almost two third interact in some kind of networking.



Graph 14, Partnership in Networking

2.4 SUMMARY OF FAX INTERVIEW

The outcomes of the fax interview show the multifariousness of New Materials inside NRW, as already explained in the introduction.

Almost all companies fit to the EU definition of small and medium sized enterprises.

Regarding the different sectors within New Materials in NRW, the distribution is diversified. But in this survey the SME within the plastic sector are dominant. Looking at the geographical distribution it is likewise diversified. The concentration is lying in the Rheinland, Cologne and Bergisches Land.

Concerning the use of modern information and communication instruments the New Materials Sector in NRW is on an up to date level. On the other hand the use of knowledge management applications is not that prevalent. One quarter do not use knowledge management applications at all. The reason might be the size of the SME as well as the high prices for the common knowledge management applications. The findings display the evident need for knowledge management applications. Within the inquiry, the companies have expressed their need of support to identify suitable information sources. The most significant information sources according to the interviewed companies are the customers. It is a significant indicator for market orientation. The product development is very close to the customer and avoid a simple technology orientation. Still interesting but without this emphasis are suppliers, the Internet and employees.

The networking participation enjoys great popularity. But the activities are very fragmented. Another form of information exchange between the different networking would assist to more synergies.

Already at this stage of the analyses an affinity for management of strategic information can be noticed. The instrument developed and provided within the STRATINC project could be a driver for less fragmented networking in the sector of New Materials in NRW.

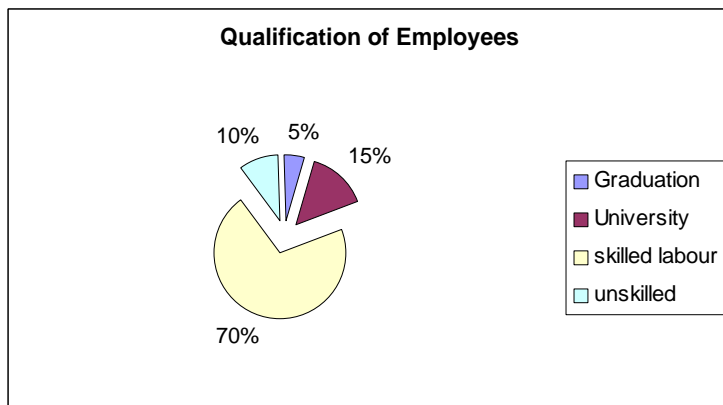
2.5 THE TELEPHONE INQUIRY

The outcomes of the telephone inquiry are two folded. On the one hand the data has been analysed quantitatively and on the other hand the interviews have been evaluated qualitative. According to the style of interview guidelines it was volitional to use close and open questions. This influences companies to participate (time factor). The analyses of the open questions allowed a deeper view into the SME workflows and their attitude about information management and watch. In the next chapter the first information is about the quantitative outcomes. The qualitative outcomes deliver a better understanding regarding the concerns of the SME and make the survey more vivid.

2.5.1 Company Management

Regarding the further training measurement in the companies it is to say that they depend on the company size. The bigger they are the more structured further training

activities are put into practice. But every SME is aware of the importance of skilled employees especially in technical terms. The graph on the subject of qualification of employees shows that 10% is unskilled labour force. With 15% the level of university graduates in technical oriented SME is rather high. Most of the SME are working with skilled employees. The 10% unskilled labour stems from only two SMEs. To keep the costs low one company is working with 50% unskilled employees.



Graph 15, Qualification of Employees

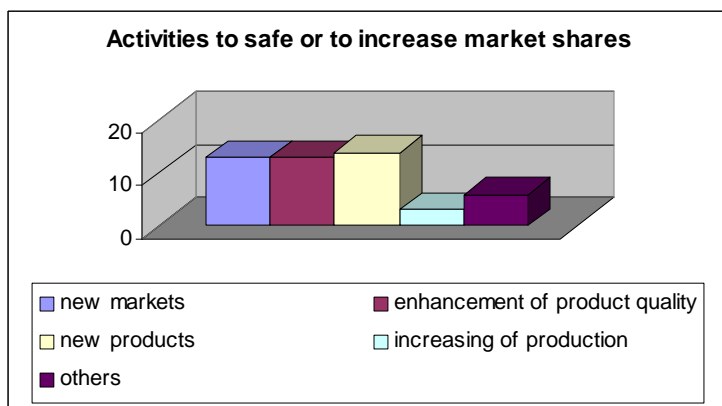
Asked to what extent the number of employees has developed in the past five years (open question), the answers are really balanced. They depend on the region and the branch.

2.5.2 Company Strategy

To study the company's strategy the interview distinguished between three issues.

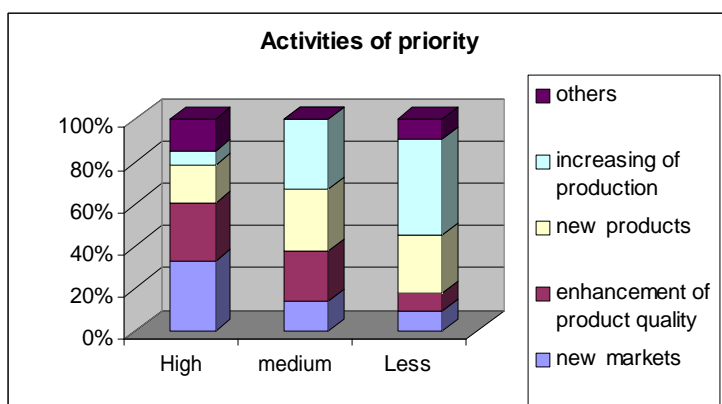
- Market shares
- Competitors
- Problem related issues

Firstly they were asked to name their major activities to increase and save market shares and then to rank these activities according to its significance. As a result they marked the following activities: identification of new markets, the enhancement of product quality and development of new products.



Graph 16, Activities

Within the ranking the most important activity is the identification of new markets whether national or international and the enhancement of product quality. Quality management is here an issue, too. The remaining points, increasing of production and developing new products are medium to less important, even when the development is the most practised activity.



Graph 17, Activities of Priority

Other activities to increase market shares are M&A strategies (merger and acquisition), intensive research to build a new production plant, human resources extension, marketing activities and upgrading a network of sales representatives. Internationalisation is a hot topic. The target countries are Eastern Europe or USA and Asia.

In the second term the companies made some specifications about their competitors, geographically, line of business related and strength of competition. Most of the companies have few or none competition in their region if they concentrate on niche products. Few competitors are more international. Nevertheless there are SMEs, which have to handle with regional competitors. Regarding the branch related competition it was difficult to get the information, as the interviewees were very cautious with their answers. The companies confirmed just the existence of the thematic competition but without going into details.

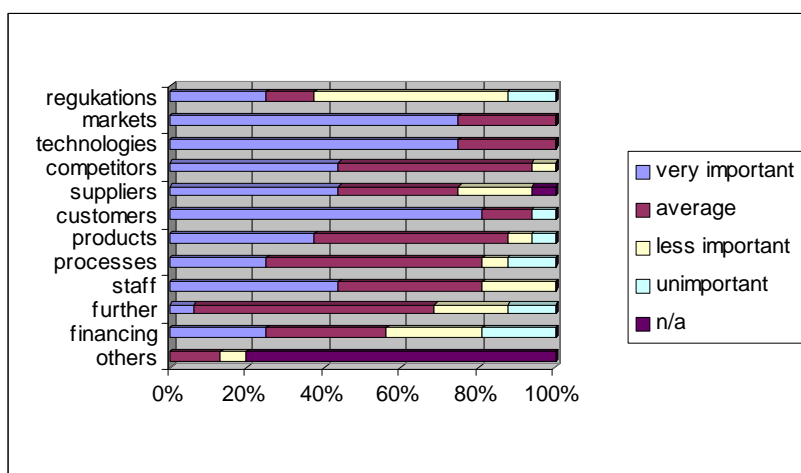
As the majority of interviewed companies represent SME the degree of competition is rather high. They mostly indicate a strong competition at an international level. Some competitors are producing in the developing countries without pollution control

standards, so they are in the position to produce cheaper. Another form of competition is substitution technologies (e.g. flat screen technologies substitute general television production).

Thirdly the companies were asked what kind of problem related issues exist and influence the daily work. Within the technical area the problems are often business line related. What they have in common are troubles with computer and equipment breakdowns. Social issues derive from human resources modifications (dismissals) or the problem of finding qualified manpower that creates the problem of the motivation of employees. Most of the companies don't have problems with pollution control topics. Only a couple of them have to follow environmental requirements. All SME have indicated market related influences, whether prices or business cycle problems affect their work.

2.5.3 Innovation

Innovation centralises different ways of watch and information management. Eleven out of 26 companies are working with measures or respectively a concept of innovation watch (in the broadest sense) within their daily business. The kind of information preferred by the companies is again depending on the kind of company. What they have in common is interest in markets, technologies and customers. Further training is an issue to which the companies are open minded; it is of average importance. Less important are information about regulations. The graph below visualises the different kinds of information resources.



Graph 18, Companies Interest in Innovation Watch

Another question dealt with the role of innovation; innovation in the fields of products, processes, services and management. Product innovation was regarded as an issue with high priority, whereas process and service innovation is a more two-folded issue. Management innovation significant is for those who had a change in hierarchy and leadership. The development of quality management can be summarised likewise.

In the qualitative analyses the companies have indicated what kind of instruments they have used respectively why they did not use information management instruments at all. The argument against information management instruments is unanimously lack of time and accordingly lack of personnel. That means furthermore the companies miss corresponding know-how in this field and signals a need for support.

The instruments, which are used, cover a diversified character and depend on the kind and size of company. Small companies are operating with monitoring, customer inquiry, informal interlocations, trade journals and information of associations. They exploit a self-developed communication system. Bigger companies are using project management software, business controlling software, intelligent monitoring systems and meetings. It is a question of efficiency to use complex software, for small enterprises the small solutions are simply more efficient whereas bigger companies need a denser and a digital solution to attend all employees to a satisfying degree.

The instruments that have been used for information management are often intranet applications, linked project management software (bigger companies), databases, meetings (personal exchange in smaller enterprises) and emails.

3. SUMMERY

The outcomes of the telephone inquiry display that companies place emphasis on strategy measures within their management. Knowledge and skilled labour are very important factors inside SMEs. None of the interviewed managing directors was opposed to further training activities. Quite the contrary is evident.

The results of the interview do not display a trend of increasing or decreasing employment. It should be appraised as an advantage as the unemployment in NRW is rather high.

Regarding the company strategy activities, there is a slight difference between the executed activities and the ranked activities. In the ranking the identification of new markets is made a top priority, even though most of the companies are working prevalently in new products. This result displays the difference between reality and claim. Both, developing new products and identification of new markets are essential for their business development. For the identification of new markets, economic intelligence tools as proposed in STRATINC, are beneficial for enhancing activities.

Competitors and competition watch is a pretty sensible topic as willingness to provide information about SME competitors is on a low level, especially for the regional competition. A platform with organised information regarding this focus 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.

The question concerning innovation reflects again the need of efficiency, especially for SME because time and staff is highly limited.

What is offered as well is a high tendency to use Internet applications and, more important, to use knowledge management applications. The large-scale enterprises are already familiar with those applications, but the SME have only little experience.

The results of this enquiry present a good starting point for the Strategic Intelligence Platform.

4. ANNEX

The interviewees indicate the participation in six networks of different style and size. The major tasks within the networks are composed of joint research, material science, human resources development, communication and growth. The degree to which the companies contribute actively to the networks is differing as well. The most frequent motive for participation is to benefit from the network by customer acquisition.

In the following a list of the networks in order of size (small to big):

1. MIM Expertenkreis (MIM expert circle). It's a small, one year old network to strengthen the technical competence of the members. It is a national network and not regionally limited (without focus on NRW). They are financed by a member's contribution. The Fraunhofer Institute as a competent research institute is a member, too. There are meetings once in a quarter respectively within six month. Communication and development are important elements.
2. Mach 2 Personalentwicklung (Mach 2 staff development). It is a small network located in Herford (eastern part of NRW) with 22 members. The main objectives focus on staff development, especially for SMEs, to work cost saving and to find joint solution for their needs. In the network no research institutes and no authorities are participating. The Financing is assured by an annual amount depending of company size. The network is regionally limited.
3. SEPA is a small network as well with forty to fifty members (medium to large-scale enterprises). The main focus is research, standardisation and trends. Universities or research institutes participate in the frame of projects. They are financed mainly of own resources. The network emerged from joint interests and is maintained by intern and extern meetings in a national and European frame. The interviewee had unfortunately no more information about this network.
4. The Kompetenznetzwerk für Materialforschung und Werkstofftechnik (competence network for material research and materials) is a medium sized network. Members are SMEs and large-scale multinational companies as well as Universities and research institutes. It is a national limited network, founded in 2002 in the Rhein-Main region (without focus on NRW). The network concentrates on building up knowledge networking between science and economy, to profile the region as a high tech location. Further objectives are to ameliorate the scientific and social conditions to better attract high potentials and students. Monthly meetings are organised.
5. The SCENET Research Network is a network for superconductivity. It is internationally organised with 20% of enterprises, the remaining 80% are Universities and research institutes within a dominant position. This network was founded on a thematic background under the GROWTH project of the Fifth Framework programme of the European Union. The leading organisation is located in Italy. To be a member of the network the new participant has to bring in a new project. Interesting for a further development (according to the interviewee) would be a stronger focus on industry and to integrate more companies to manage the grade from science to market.

6. The cluster “Brennstoffzelle NRW” (fuel cell NRW) is established in 2000 by the Ministry of Economic and Labour of NRW as a network and has its location in NRW. Over 200 participants of science and economy join the network. The ministries of Energy, Science, Construction and Environment take part in the network as well. It is financed of public funds. The motivation and objectives are to modify old technology to modern technology regarding innovative energy and environmental protection. The development of the fuel cell shall be fostered; science and economy shall be consolidated within cooperation projects. Joint solutions for regional needs shall be found. The network is organised under the auspices of the Land NRW, two employees coordinate working groups, organise congresses and meetings.

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