
HOW VINGÅKER ENERGETIC
SCIENCE PARK CAN HELP TO
STRENGTHEN VINGÅKER'S
COMPETITIVENESS

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Abstract

Sweden and the world now face an economic crisis that is likely to accelerate the structural transformation of Sweden. Vingåker is a town in the middle of Sweden. It has ambitions to create a sustainable society by working together with enterprises and universities to develop new knowledge and technologies through the use of information technology.

How can Vingåker become a city of world renown? There are three basic key factors - technology, talented people and education. These three factors are inseparable: the good education trains people to become talented people, these talents in turn create better technology, and the better technology achieves the best continuous interests. The Vingåker Energetic Science Park (VESP) is set up to achieve above objectives.

By building a brand that stands for VESP is one of main idea's to promote Vingåker. Since the Internet is the best tool to the future, for promoting the brand of Vingåker, a network platform has to be set up. The website of VESP enhanced the connection and collaboration among community, companies and universities near Vingåker region. Considering long term development of this project, promotion internationally is a key to its success. VESP is a platform that leads Vingåker to the international market and explores future opportunities.

Field studies have been carried out on the first stage of the thesis, which include participative observation, Interviews and Questionnaires directed at persons at factories, companies, schools, and town hall of the community management. The results of the surveys have been analyzed and the market has investigated. The brand has been designed and the strategies have been developed. Then the webpage of VESP was built at www.vesp.se by interaction and interface design. After usability testing, the webpage has been improved and the web promotion researched.

Keywords: Vingåker Energetic Science Park (VESP), information technology, field study, market research, brand, web site, promotion, sustainable development.

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1. VINGÅKERS MUNICIPALITY AND THE GLOBAL WORLD

Ways for transforming the local society based on industrial production into a society based on knowledge, advanced technology and services. We need to understand the situation of Vingåker and the background beyond the topic.

1.1 HOW VINGÅKER MUNICIPALITY AND THE WORLD HAVE CHANGED DURING THE LAST 50 YEARS

1.1.1 THE SOCIAL DEVELOPMENT OF THE WORLD

The society develops by three industrial economic stages: firstly, raw material extraction industries such as mining and farming; secondly, largely distribution of manufactured goods and related services; thirdly, a relatively new type of knowledge -based industry dealing with technological research, design and development such as computer programming, Electronics and biochemistry.

1.1.1.1 From Agriculture to industry

Before the Industrial Revolution, agriculture is a major sector in the national economy, the agricultural population was the majority of the country's population.

Agriculture refers to the production of food and goods through farming and forestry. Agriculture was the primary industry. An important structural economic shift occurred when agricultural labor ceases to grow and as a result the society changed to Industrialization.

When the backward labor productivity could not longer satisfy the realities of people's growing needs, the society needs a transformation to adapt to the development of the social labor productivity.

Industry is the manufacturing of goods or services within a category. That is a process of acquiring raw materials and working them into products in factories.

1.1.1.2 From manufacturing to urbanization

Urbanization is a result of economic development that leads to towns and cities rising and developing. It is the physical growth of rural or natural land into urban areas as a result of population immigration to an existing urban area and effects include a change in density and administration services.

1.1.1.3 Commercialization and branding based on science and technology

Nowadays we are facing the stage of Commercialization, which is the process or cycle of introducing a new product into the market. Now the world is developing significantly fast and new businesses emerge and existing businesses expand to local areas and global world. Through commercialization of a society will inevitably open up cities into a trading platform in the market.

Today's world is in the process of globalization. International competition is escalating among cities in the world, and the brand competition is becoming more important for international competition.

Rational planning of urban development strategies, increasing brand competitiveness of cities, and taking full advantage of high-tech resources for sustainable development are essential.

1.1.2 THE DEVELOPMENT OF VINGÅKER MUNICIPALITY

At the beginning of the 20th century, about 50% of Sweden's population was engaged in agriculture. Around 1930, the areas used for agricultural production had reached its highest limit. By 1950, only some 20 percent of the population lived in the countryside.

In the 60's, Vingåker was dominated by labor market of clothing industry which employed 1000 employees. There were a number of smaller businesses as well. Also, a significant proportion of the inhabitants in Vingåkers region were employed in agriculture and forestry industries.

By 1985 the clothing industry began to disappear and smaller supporting companies began to venture in new businesses.

Starting in 2008 the global financial meltdown was taking full force in Europe and as a result Sweden's economy is beginning a transition from production and manufacturing sectors to the knowledge intensive service industries with only about two percent of the remaining population employed by the agriculture sector.

1.2 FROM LOCAL MARKET TO GLOBAL MARKET ARENA

With the trend of economic globalization more and more multinational corporations have been developing rapidly. How can we adapt to the world trends while actively exploring the international market? By exploring the overseas markets that will require a long term and painstaking work that demands sacrifice and patience. To help speed up the development of internationalization, a complete mechanism to effectively promote the development of internationalization and branding is needed.

(a) Finding a market position. The market should be positioned and analyzed by different marketing plans.

(b) Providing high quality, high-tech products and services.

(c) Using Internet resources. The vast Internet resources lay the foundation for enterprises' development of the market. Through Internet a market can be found, by understanding the developing direction of products and related enterprises.

(d) Designing and establishing business web sites to expand to introduce Vingåker to the world and expand overseas markets, while advertising and trading in well-known Web sites.

1.3 HOW CAN WE IMPROVE THE INTERACTION BETWEEN UNIVERSITIES AND REMOTE MUNICIPALITIES

1.3.1 VESP

VESP (Vingåker Energetic Science Park) is a project that creates partnerships between universities, research agencies and relating companies. It is aimed at a research center in Vingåker municipality which will contain research, development and training. It focuses on sustainable, ecologically sound cycles of treatment and recovery of explosives goods and other related technical systems and disciplines. It will lead Vingåker to be outstanding in academic and business circles. Vingaker Energetic Science Park (VESP) will serve as a platform and a full scale laboratory for research and development in cooperation with primarily the Universities of Mälardalen (Mdh), Linköping (LiU), Örebro University and the Royal Institute of Technology in Stockholm (KTH). The opportunities for European and international cooperation with universities are under exploration. It is a research and development platform of sustainable and environmentally correct methods for disposal of explosive materials and articles. VESP will use Internet marketing as a strong tool to achieve its goals.

1.3.2 KCEM

The KCEM (Competence Centre for Energetic and Materials) is a network and meeting centre for companies, universities, authorities and all persons within the Energetic Materials sector. It assists VESP to be a separated system and is a part of the collaborative network of VESP. KCEM has large and successful experience in project management and international

cooperation and this knowledge will be very powerful and helpful to the development of Vingåker municipality.

1.3.3 EDUCATION DEVELOPMENT

Awards of scientific and technological achievements for students: Project awards will strengthen the students' motivation of study and research, and encourage their enterprise and enthusiasm.

International education exposition and International high-tech exposition: Taking apart in exposition will help students to learn the best and the latest high-tech and achievements, to share their experience and to develop better together.

1.3.4 KARLSKOGA SCIENCE PARK

Karlskoga Science Park is one of a member of the network which has close partnership with Vingåker Energetic Science Park.

1.4 THE BASIC KEY TO SUCCESS

There are three key factors leading a city or a country to be leader of the world - technology, talented people and an advanced education. These three are inseparable: the advanced education can train the better people; the better people can create the better technology; the better technology can achieve the best continuous interest.

Sweden has many first-class universities and research institutes built by the Government. When new technologies are developed from these universities it will then be transferred to the many successful companies. In turn the technology passed on to the different companies can produce benefits that are passed on to the consumer and the taxes generated from the new technology can be reinvested into the universities from the government. This beneficial cycle

will begin once key talent is developed with a strong educational base and the companies themselves attract talent through active recruiting methods and offer competitive pay to retain that talent.

2. MARKETING

For strengthening Vingåkers competitiveness in all areas can be achieved by cooperating with colleges and universities, marketing is essential to succeed.

2.1 PUBLIC EVENTS

Public events are the basic and direct ways to reach the market. Street light advertising, newspaper and magazine advertising, conference and other activities can let people and the world get to know about us.

From psychological point of view, street light advertising enhances the cognition of people. It can introduce our brand to people and let people have the first impression of what is VESP. Newspaper and magazine advertising are also good approaches because it always a more cost effective way of reaching the masses.

It will be very important to hold conferences. These conferences should be held by research groups that are intending to introduce their high-tech knowledge to different local companies and will give local workers the chance to build net work connotations in their related fields. To help minimize lost productivity conferences should be set up to maximize useful time of each related field and the individual's time. Each table can have its own topic and a knowledgeable host who can answer customers' questions face to face and also keep conversations on track. It is a better way to communicate and get to know each other. Another helpful tool to keep people on track is to have all tables should have leaflets that include contact information, which is used for further contact and will give each person structure in

case they get of track.

Other beneficial can include large-scale activities to strengthen the brand recognition, take part in exhibition displays, and at the same time promote with publicity materials and electronic publications.

2.2 THE BRAND

With commercial culture maturing and commercial influence growing, the brand and its reputation have become to the most important core assets of any enterprises who determined to make a success. Brand management proves to be one of the most important businesses strategy.

2.2.1 ON BRAND - CITY BRANDING

Could a city be branded? According to Professor Kevin Lane Keller¹, as the products and people, geographical location or a regional space can also be a brand. In this case, the brands were relatively fixing in a geographical name. In fact, the effect of urban branding is to make people know and understand about a region and associate the existence of it with a certain image and its spirit.

In the 21st century, many cities around the world have an open economic policy, municipal construction, investment, tourism development, environmental reform that link to the establishment of the city branding. Because of the new technologies and the promotion of

¹ Professor Kevin Lane Keller, who was in Fuqua school of business, Duke University, wrote the book "Strategic brand management".

global economic integration, the traffic and developed information promote the growth of regional marketing trends. Many cities' economic development has been incorporated into the whole system of social division of labor. A city's financial situation, level of consumption, income, benefits, employment and other social issues are closely related to the market competitiveness of the city.

Considering per capita income, industrialization, industrial structure, employment composition, floating population and associated factors, the result derived from an industrialized society is bound to that the core values of the city can be used to produce new additional value - the brand.

After urbanization the city needs to develop a direction of the brand. It must have a system in place to enable the city to be not only an administrative region but also a huge commodity, in respect that the function of the traditional sense of the city, under the impetus of the commodities economic system, has changed from a unit of planned economy to be a part of the competitive market economy following the rules of the game.

For attracting investment and promoting the local economy, impetus of city as a brand will promote the domestic and international market. At the same time, urban housing, education, health care and pension should keep pace with the urban development, thereby the city can attract more labor and talented people and who will be able to settle down in the city.

2.2.2 CREATION OF THE BRAND

How to build a city brand?

The basic definition of the brand is the complex of product name, logo, symbol, product quality and style. From the relationship between the brand and consumers, the brand is the commitment of products to the target market.

The establishment of the city as a brand is a social engineering system, not only concerning the name, logo, symbol and slogan, but more importantly from the perspective of the development of the whole society. The city needs to find its core values and the brand positioning, and this is an overall balance process. Focusing on long-term development of the urban brand, once the position is defined, it will be necessary to integrate the resources of the society as a whole to continually operate and promote its own core values to enable a city to

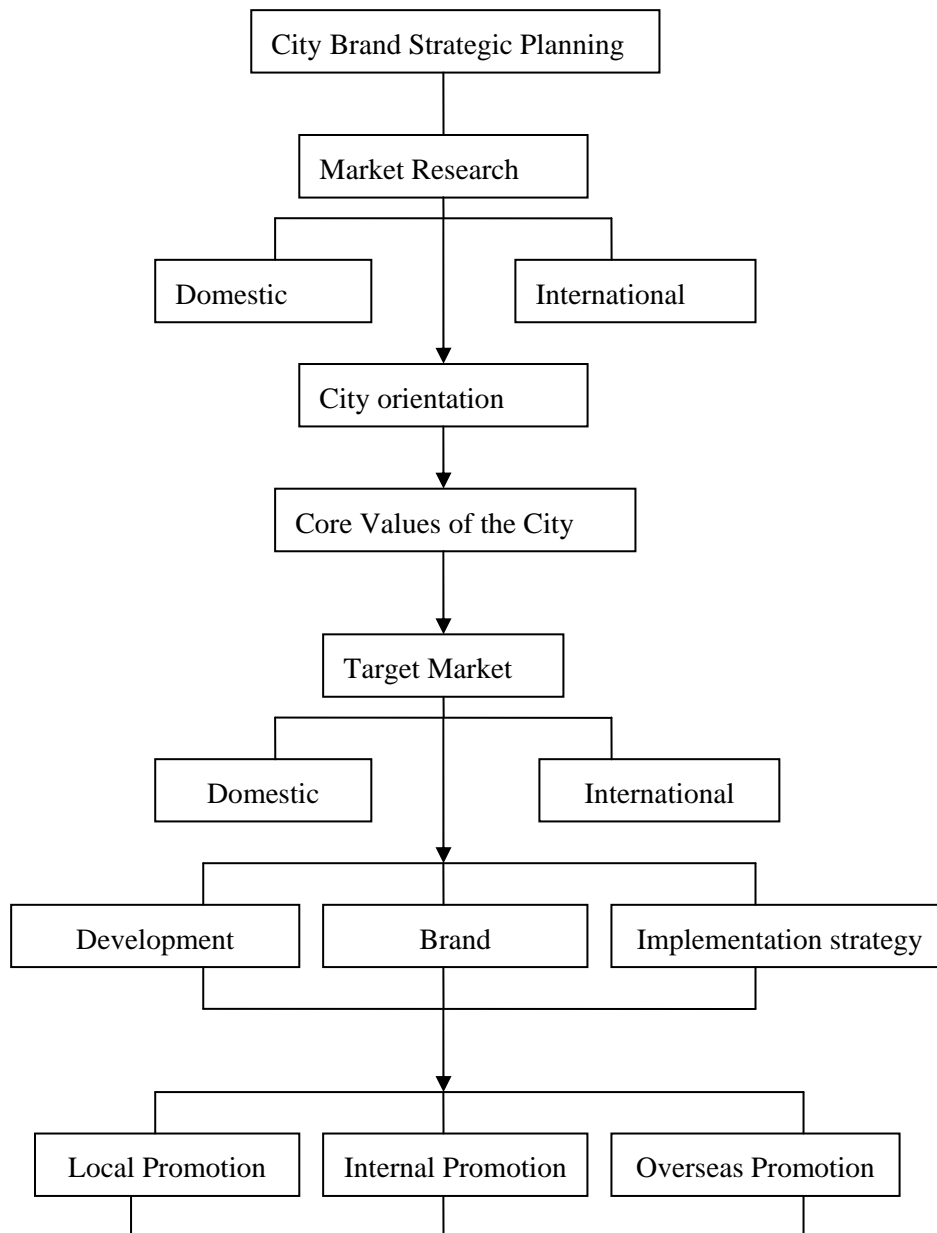
gradually build up the brand. The urban brand is shaped by the marketing strategy and management.

Program of building a city brand

The significance of establishing a city brand by the business community is not the effectiveness during a short period of time, but a long and continuing process. Therefore, in order to shape the brand image of a city, just like the construction of a huge building, we should not only have complete and detailed regulations to implement the plan, but also the first-class architects and a high-quality construction team to build the “immortal” city brand.

(1) Strategic Planning

Establishing the urban plans is the first step in the whole process. Its core role is to develop a blueprint for the city to determine the purpose of planning, time process, the division of the participating departments, projects and plans, the overall budget and the implementation of team members and so on to establish a brand. Take Hong Kong for example, the Brand Hong Kong Fire Red "Dragon" logo was handled by a government inter-departmental working group, including the Chief Secretary for investment, promotion Department, the Trade Development Council, the Tourism Board and several professionals in the international field of various prestigious professional top transnational companies and its work lasted for one year.



List of City Brand Planning Strategy

(2) Market Research

The second step of planning the implementation of brand strategy is to start from market research. As prior to determining the brand of a city, an important step is to understand how the outside world evaluates the city. First of all, research should start from the resources and advantages of the Vingåker region, future development, the public interest, and the

government's urban development planning. Besides, by using various forms of interviews and a questionnaire surveys, we find out the evaluation of the city from the public, surrounding cities and the international community. The specific measures are that we interview the factories, companies and community departments in Vingåker region and before the interview send the send a list of questions to them and send questionnaires to people outside Vingåker region as well.

On the basis of objective and scientific conclusions from the research, it provides sufficient foundation for decision making of the next phase of the project such as city orientation and visual recognition.

(3) City orientation

City orientation is the brand position which is the soul in the process of creating the city brand. The value of the brand is its position in the market and its irreplaceable character, for an example a company like Coca Cola is know around the world because of how they built their band name. If done properly the brand could be well known centuries. Any competition of products and services in the market cannot be separated from the unique market orientation, and similarly, the city is not an exception. Because the essence of positioning is to give a unique position of the city relative to the target market, in this way the distinctive brand feature of the city is formed.

How will Vingåker be oriented? The first thing is to consider its own resources by comparing it with other cities and determining what are their competitive advantages. In addition, consider the public recognition of the orientation. Furthermore, according to investors and the international community, the development of positioning can be determined, in order for the future brand image to be able to embody the impact of the urban planning and the construction of investment environment for investors

For example, Hong Kong's brand orientation is a dynamic and innovative "Asian World City" that is tested by the International discussion group after the final assessment. It not only uses the advantages of Hong Kong's international financial center in Asia for its strong international services, and the acquisition of specialized knowledge and skilled people, but also shows that the future "world city" will have a good "hard" and "soft" infrastructure, including transport and telecommunications facilities, international standard education and training systems, as well as the commitment to sustainable development.

The city's brand orientation should be combined with its history and culture to give it cultural integrity and cultural connotations. Only when the city's brand inherits characteristics of its history and culture will it have real charm. City orientation is the functional and cultural

integration of two aspects to form its character, to enable the orientation to have enduring vitality, and ultimately to be translated into commitment in the market of the target audience.

Based on our market research it was determined that the Vingåker region has many high – technology companies and factories that are established and well developed. There are also many established universities and colleges around the Vingåker region that have high quality education and research. Community departments work actively and make progress. What we can do is to enhance the connection and collaboration among community, companies and universities near Vingåker region. After that, we should expand our market to the nation, Europe and the World. That is, establish cooperation with university, colleges, and companies all over the world.

(4) Core Values of the City

The core values of the city's brand reflect not only the city's social existence in the business competition, but also more importantly, the maximum benefits that the city brings to all members of society. In terms of target customers it includes maximize their interests and in terms of investors it means that the greatest return on investment. The core value of the brand is the soul of a city. The environment, resources, culture, history, economy and people are the elements that compose a brand value of a city. The combination of these elements determines the essence of the brand. Different from products and services, the core values of the brand includes both visible and tangible elements, as well as a number of complex intangible values.

At the present stage, colleges and universities near the Vingåker region should have closer cooperation with local industries, in order to implement each other's advantages the main way of integrating technology and economy, and turning them into the scientific and technological achievements. We should make great effort with the related competent authorities, technology departments of universities and market departments of companies to cooperate and create effective economic leverage and administrative measures so as to promote industry-university cooperation and to develop various forms of unions, which can be education, scientific research, production Commonwealth, research institution unions, technology unions; cooperation in science and technology, technological innovation, technology promotion, the introduction and study of new high–technology projects; universities train technical personnel for the industry, transfer the outcome of the technology, carry out consulting services, and sign the technical contract with the industry; the industry provide funds for universities and testing ground for students, so that students can have more opportunity to participate in the practical production and so forth.

(5) Target Market

A city must be clear about its target market - the object they are going to convey. It means that we must find the sub-markets for Vingåker.

The orientation of the target market is based on the early market research, at the same time, also depends on the brand's market orientation.

For example, as the highest level of modernization Beijing proposed to build in the mid-21st century standards with first-class modern international metropolis, Shanghai's development objective is to build an export-oriented similar to how Hong Kong image brand works

The present target market is to make a union among universities, companies, and the local community to achieve the core value of Vingåker as discussed before. After that the target market will focus on Sweden, then focus on the European continent and then the world.

(6) Branding process and Visualization recognition

(a) Name a brand

Once we have found the core values of Vingåkers, we need to select an appropriate name for the city brand, such as “Vingåker Energetic Science Park”.

(b) Slogan

A creative slogan with new ideas is likely to be quite different in the brand recognition. Once we have selected a name of our brand, it would be better to have a slogan which is a statement summing up our intentions and strengths. It should be short and memorable. A good slogan lays out the city's vision and reflects its spirit, create enthusiasm, and momentum. Formulation of a slogan depends on the target population and on the goals of the campaign, but the slogan must also be at least somewhat congruent with reality².

The slogan of Vingåkers Energetic Science Park also should represent our core values, such as “Network platform, creating brilliance” with the sub-slogan “High Quality, Good Service, and Internet Market”.

(c) Logo

² Recording to Kotler *et al.*, 1993

The design of a unified brand image for the brand is beneficial to the consumer's memory. It gives consumers awareness in short time. The unification of the brand image is good for consumers' understanding and avoids unnecessary misunderstanding.

A logo is the graphic design by which our organization will come to be imagined by customers. Our logo can be as straightforward as a simple geometric shape or, potentially, an elaborate design of a simple idea - such as a silhouette of a person or an object.

The recognition system of logo can consist of a symbol, English fonts, superscript with quasi-color and support-color, the standard composition and the composition of a wide range of applications

We still take Hong Kong's logo as an example, the dynamic dragon with the Streamline pattern shows that Hong Kong is a city full of change and speed. "Asia's World City" in red in the subheading reveals the orientation of brands in Hong Kong; Red, yellow and black as the main colors, reflect the traditional Chinese culture. The color of the dragon expresses the vitality of the city. They designated professional firms to design the logo and it is shown as below.



VESP logo version one:

We should find a symbol that can stand for Vingåkers or Sweden's characters and cultures. I used the symbol of the Vingåker community as the logo, Vingåkers Science Park as the headline which shows the city's name and that the main function is about science, and "High-Tech Leading the world" as the subtitle which points out that the high-technology is our advantage. The color of the words is harmonious with the symbol and the design maintains a simple style. It is a draft I designed shown below.



Since the symbol belongs to the Vingåker community, and this is just an example to show the idea, this design should not be used in practice.

VESP logo version two:

The colors of this logo design are blue and yellow from Swedish national flag which show Sweden's characters and cultures. A five-line staff is used as the background of the logo. VESP is a center of high-tech with sustainable development which just same as a beautiful music showed by the staff and notes. Letter "V, E, S, P" are on it as art shape of musical notes, show its energy and youthful spirit. There is a butterfly flying on the "e" letter, showing that we attract talented people to be here and it makes the logo become vivid. The fresh colors make the logo easy to be noticed and remembered and to look alive as well. The name "Vingåker Energetic Science Park" is just below the image. The whole design maintains a simple style.



VESP logo version three:

Considering that first two versions of logo design may not represent the core values of VESP which is a network to enable companies and universities to work together, I decide to drop the design idea of melody; instead, a heart shaped handshake with a network forms a new logo.



(7) Promote the implementation

When a city promotes its own brand value to a target audience, it must complete the brand production process, and eventually through a series of practical activities, attach orientation, concept and values to the project development, strategic planning and environmental reform that will fulfill the needs of the target markets.

The establishment of the city's brand needs to be in accordance with financial capability. We can carry out the activities such as exhibition in the commercial Center, advertising, direct mail brochures and public relations to promote our brand.

Since the establishment of brand image of the city is basically implemented by all people in the city, so that let them be clear and aware of the ultimate goal of their city, can not only unify their thinking and behavior, but also stimulate their morale and encourage people to strive for it.

(8) Supervision and management

To build a brand for a city is not a short time job, we also need to set a specialized institution to supervise the promotion of the brand and give the guidance, as well as build a homepage to introduce and promote our city brand.

2.3 MARKETING STRATEGY

2.3.1 PROMOTION OF THE BRAND

No promotion, no market for brand

In plain terms the promotion is the process that when faced with a crowd, how do we educate them, understand them and allow them to aware of and accept our products and services. There are a variety of means for promotion acts, but their essential to address consumer awareness and acceptance of our brand. We aim to let consumers accept our products and service after they understand them.

For example, consumers need to have an initial awareness and understanding of our brands, and then they may have a favorable impression of them. This process allows consumers to understand the needs which have to be reached by promotion.

Effective promotion can reach the interests of consumers and brands interests of enterprise. At the same time, promoting to each corresponding different groups, will make it easier for consumers to accept products and services by emotional behavior and will give education to them as well.

Enhancing the brand

Brand competition is an inevitable stage in the development of each industry. Brand is trust. It increases loyalty to the business, and it ensures the stable and sustainable development. The brand is the accumulation for all marketing activities in the minds of consumers. Branding is a continuous system process and the brand building needs brand awareness, brand understanding, brand trust, brand reputation, and brand loyalty. The affect of those five stages needs to be achieved by the continuing integration approaches of the brand. Strategies for enhancing the brand are as following:

(a) The product power is the basis of the existence of a brand.

If you want to do branding and want long-term development, do a good job of the quality and with the city's high technology support it will only make the process better.

(b) Soft advertising to increase brand awareness

Soft advertising (advertising through mention in editorial text) will not only enhance the brand awareness, but also as a result of the informative and comprehensive dissemination, can comprehensively display information such as business dynamics, market dynamics, product technology to consumers and dealers, making consumers and distributors know more about enterprises and raise the confidence of the brand. The main means of spreading soft advertising is soft text and information and dissemination of information and can include: the sale of corporate dynamics, dynamic R & D of new products and market dynamics. Soft spread includes industry newspapers, magazines and websites.

(c) Terminal performance accesses brand trust

Corporate Image increases consumers confidence of the brand. Terminal extension activities can decrease the distance between the brand and consumers, so that consumers know more about the brand and product quality, and the brand wins the trust of consumers. The terminal activities can be conferences or seminars. There are also many choices of brand transmission. For example, television, radio, newspapers and other mass media, professional websites, other websites, books, magazines, signs, walls, bus advertisements, community publications, mobile media, and public media etc.

(d) Word-of-mouth spread achieves brand loyalty

The key is the quality and the fact, since people will spread the information to neighbors and other people, that is, the influence of word-of-mouth spread.

Word-of-mouth dissemination relies on support of enterprise systems. Although the establishment of the spread of word-of-mouth is a difficult and long process, this is the foundation of the brand and is also a shortcut to success. Without a good reputation, there is no good brand.

2.3.2 INTELLECTUAL PROPERTY RIGHTS STRATEGY

Intellectual property is an intangible property rights, is the right after you come to fruition from engagement in intellectual creative activities. The strategy is to control abroad intellectual property rights risks and have multi-national cooperation - cross licensing. Therefore, communal tenure of the patent portfolio belongs to both sides of partners.

2.3.3 GROUP STRATEGY – POWER OF INFLUENCE

We can cooperate with other science parks, stronger enterprise and group strategy will mutually accelerate each other. Since when we have our brand, we will have more partners, and vice versa.

2.3.4 SUSTAINABLE DEVELOPMENT STRATEGY

Green food, green drinks, green packaging, green management, nowadays, "green" is the mainstream color of the 21st century as the green products in the 21st century will be the dominant product along with green marketing. In other words, it is sustainable development marketing.

Sustainable development strategy should include: the establishment of the concept of sustainable development marketing; the development of sustainable development resources, research and development of green products and establish a green brand; the development of sustainable development marketing, and guidance of people through sustainable development.

2.3.5 GOVERNMENT SUPPORT

Government support and brand building

There are three phases for government support and brand building. The first phase, when the brand was in the initial stage of the economy, corporations' awareness of the brand generally remained at the level of trademarks. The second phase, the brand entered the development stage of the economy, government starts implementation of brand strategy instructions. The third phase is brand economy upgrades and speed up. Corporations continue to improve the brand image. The brand is becoming more internationalized.

Study successful experience from other countries

Korea's output value of electronic information products from 12.7 billion U.S. dollars in 1990 increased to 212.8 billion U.S. dollars in 2004. Average annual growth rate was 22%.

The reason for this rapid development of South Korean IT industry is that the Government cultivated and developed IT brands. In 1997 the serious financial crisis resulted in that the traditional manufacturing industry was in the doldrums. The South Korean government chose to increase the promotion of IT industry. Learning from other governments' experience can help us achieve the success of the brand.

Striving for Government support

There are obvious advantages if we can get the government's support. It is a good idea to strive for Government's long-term brand protection and monitoring and to build bridges and create a platform for enterprise development and brand's promotion.

With the rapid economic development and upgrading of the emerging international markets, the development of the brand has an important opportunity. Working together with Governments, enterprises will build a large number of world-class brands.

2.4 INTERNET-BASED MARKETING

2.4.1 THE RAPID DEVELOPMENT OF INTERNET

With the development of computer and communications technology, humanity has entered the Internet era. The Internet is a global system of interconnected computer networks. Beyond Time and geography, Internet brings new business opportunities for everyone. The so-called network marketing strategy is that enterprises use modern information network resources to carry out the marketing activities.

2.4.2 THE ADVANTAGE OF INTERNET

The Internet has also become a large market for companies. It is an effective market of low-cost advertising and commerce through the Internet, so we can reduce the cost. It is the fastest way to spread information to a vast number of people simultaneously. We can promote

the market efficiently and control the market for the very first time by internet. It also helps us to extend marketing channels

2.4.3 THE INTERNET-BASED MARKETING

Internet marketing, free from limitations of time and space, provides 24-hour global marketing services; network marketing, with the aid of diagrams, shows prototype products. Internet storage, the number and accuracy of information transmission is far better than other media. At the same time, Internet marketing adapts to changes of market, updates products and adjusts the edge. The cost of Internet Marketing is about 1/10 of a traditional marketing transaction so it has low-cost competitive advantage. Internet marketing strategies allow enterprises to integrate product descriptions, customer feedback, advertising, public relations, marketing, customer service and other activities with each other. The market goals would be achieved by one-on-one interactive communication. For us, we would love to enhance the contact among universities, companies and communities. Internet allows people to communicate and have conferences in an easier way, since people live and work at different places and have little time for traveling.

3. PROMOTION OF INTERNATIONALIZATION

Considering the development of the project in the long run, we believe promotion internationally is a key to succeed.

How far we can think, how far we can go.

The emergence of the Internet has changed the market approaches. Enterprises are faced with the global market. As Dr. Axel C.Heitmann said "The globalization of economic exchanges among enterprises and the shrink of national boundaries are the consensus of business leaders in the 21st century."³

3.1 NETWORK MARKETING

The rise of the network breaks through the boundaries of countries. The whole world has changed and developed rapid fast and we are facing the international market.

VESP has valuable high technology recourses and we network with as many as possible useful contacts in the global world. Our Targets are as the following:

- Cost reduction;
- Satisfy users' needs by offering well targeted and time-based services;
- Adopt to market variations; look for long term stable development;

³ Dr. Axel C. Heitmann, Chairman of the Board of LANXESS AG

- Enhance competitiveness;
- Use database marketing: Meet the accuracy of the target market segmentation.

3.2 PROMOTION OF WORLDWIDE COLLEGES AND UNIVERSITIES

A wide range of international exchanges and cooperation among colleges and universities, not only expand influence in the international arena, but also help maintain the academic leadership in some disciplines. It enhances the research level, and provides a reliable and stable source of international experts. It makes a major contribution to talents' training, establishment of new disciplines, and the training of young teachers.

To enhance the educational and cultural exchanges among different countries and improve the level of internationalization of education better, it is crucial to speed up the development of international cooperation. It can be implemented by establishing friendly and cooperative relations, sharing resources and experience of both sides and joining in some activities with other colleges and universities. It will cause a better development of high level education.

3.3 PROMOTION OF WORLDWIDE NEW TECHNOLOGY OF DISTANCE EDUCATION

The information age spurs the inevitable trend of information technology of education. Internet technology is not only changing people's educational philosophy, teaching models and learning styles, but also greatly expanded the boundaries of time and space of education. In a network environment, students have increased freedom of choice that stimulates students' motivation to learn and help students explore their own learning ability.

Internet education is a new and open concept which in general can be defined as a teaching tool, a teaching resource network, a teaching and learning environment.

Internet education as a new model of distance learning, in comparison with the traditional education, has the great superiority which can not be separated from the Internet itself. It has the following advantages:

(a) Network teaching can be conducted at anytime and anywhere. Learners have full flexibility in the learning process. They can choose their own time and place to study on-line conveniently, and can also control their own learning progress.

(b) Network teaching let students easily enjoys rich content, fun-filled interactive multimedia course materials. Learners can also reach a large number of relevant information or material by using internet resources.

(c) Network teaching can make students and teachers have synchronous communication. E-mail and Internet chat rooms are of course the main communication tools. By e-mail, students can easily obtain individual help.

Through establishment of an international network schools will attract more young people to study the new high-technology and there will be more talented people to work in this area.

3.4 PROMOTION OF WORLDWIDE NEW TECHNOLOGIES TO COMPANIES

There is a saying "the world is getting smaller and smaller." With the economy and trade globalization and the development of high-speed transport, we can to go any place at any time at wish. At same time as the international market is formed, allowing products exchange and international trade, especially for some large multinational corporations which develop the international market economy, it increases competition and cooperation between countries. People can take full advantage of resources from around the world. Human civilization has continues to move forward.

In today's increasingly globalized economy transnational corporations play a very active and exciting role: since the late 20th century, the world's transnational corporations have increasingly become a part of force of economic progress. There are about 60,000 transnational corporations in the world's, 60% direct investment is global foreign investment

which controls one-third of the world's production and two-thirds of world trade, and holds about 70 percent of advanced technology.

.
Our goal is to help the enterprises grow stronger, build up the international market for Vingåker region, maintain long-term partnerships and support the latest technology development and researches.

3.5 EXTENDING NETWORKS TO INNOVATIVE SERVICES

Innovation is the motive power to maintain the vitality of the marketing, is the major means for enterprises to exceed themselves and their competitors, is a reliable guarantee of achieving sustainable development, of keeping the brand vitality and the overall profitability. Innovation is not a slogan, but action; not accidental, but inevitable. We need not just product innovation, also more marketing channels to promote innovation in the details. Innovation is the soul of the brand activation.

4. SETTING UP A NETWORK PLATFORM

Since the Internet is the key to the future, setting up a network platform will be necessary to implement, which will be based on professional, high-tech needs and long-term development perspective in order to achieve our goals.

4.1 THE WEBPAGE OF VESP

The webpage of VESP includes introduction, background, intention and location of VESP; Latest Bulletin; Network of cooperation Partners, Sponsors and Research; Online Courses and Forum.

It provides a platform for both companies and researchers for interactive information. It offers information of companies that what kinds of technologies are needed and information of researchers that what kinds of technologies they have.

The webpage can be made by Photoshop and FrontPage. For more information about VESP please see vesp.se

4.1.1 THE NETWORK OF VESP

Vingåker Energetic Science Park (VESP) is a platform for research and development of sustainable and environmentally correct methods for disposal of explosives material and

articles. It serves as a platform and full scale laboratory for research and development in cooperation with Universities. We aim to build and maintain a network of universities and companies not only in Sweden, but also in Europe and the World range. We will support researchers and organizations who work with related questions as well.

4.1.2 THE FORUM OF VESP

The VESP index is created in the forum of VESP, which include Welcome to VESP forum, Technology, International cooperation, Interactive platform and Questions and answers forums.

- Welcome to VESP forum

Welcome information and introduction of VESP forum

- Technology

Includes forums of the forefront of science and technology, Academic exchanges, Technology needs and support

- International cooperation

People can communicate and ask questions about International cooperation.

- Interactive platform

Here you can post and find information on companies on what kinds of technologies are needed and information on researchers and what kinds of technologies they have.

- Questions and answers

People are welcome to ask any questions about VESP and our website. We will answer them as soon as possible.

4.1.3 ONLINE TRAINING, DISTANCE EDUCATION USING MODERN TECHNIQUES.

Online training allows companies or organizations to arrange training at low cost, so the teaching costs would be reduced. Beside, we can obtain financial benefits by charging tuition of cooperative companies, organizations and individuals. We aim to preserve experiences, information and competence, transfer experiences and competence to new generations, and let new generations be fostered and trained by experienced explosive specialists. See more information in section 3.3

4.1.4 ONLINE CONFERENCE CENTER

An online conference center will serve to arrange national and international conferences in the future for cooperating institutions communication. Conference systems based on Computer Supported Cooperative Work technology and real-time multimedia communications of interactive technology which build a synchronous collaborative work environment. It enables the completion of tasks from geographically dispersed groups by using computer and network collaboration. It improves the way people exchange information, reduces the time and space obstacles, saves time and energy, and improves the quality and efficiency of work.

Since VESP was established recently, we will start to work on creating a network in Vingaker. People in the network will start to know the system and each other. It will be a process to grow and develop enabling people and companies to get to know each other well. According to the research, people prefer to have meeting or conference in a meeting room and to meet people in person. It is then easier for people to communicate and get trust. Therefore, online conference center will be implemented when the network system grows mature. However, in order for network communications and collaboration in a project to work well it is necessary that the persons involved have met physically and got to know and trust each other.

4.2 BASIC STRATEGIES OF NETWORK PLATFORM

- Apply a URL that is easy to remember. In this case, it is www.vesp.se or vesp.se

- Update information:

If a web site has long period of time no update, people would not want to visit it again. So it will be necessary to update the content, even if there are only small changes;

- Valuable content:

Information is accessed very easily from the Internet, so if our site can provide valuable information, more visitors will be attracted. If the information is the same or similar to that of others, after a period of time visitors will get tired of it;

- Interactive content:

More and more visitors do not just want to watch, but they want to have interactive content. An interactive platform will be very helpful, such as a forum platform.

4.3 WEB PROMOTION

How do we let more people know and visit our websites? This is an important issue that concerns most enterprises. As consumers are more and more subdivided, it is important to work by strategies and use the minimum cost to get the most recognition of the target consumer groups.

4.3.1 INTEGRATION

4.3.1.1 Integration of web promotion

The website of VESP will be developed in a trend of diversification. Horizontally there are various application forms such as school education websites, KCEM, VESP, knowledge portal, on line training and community websites etc. Vertically, to accomplish the final goal we have to achieve the phased targets step by step. At this point, websites of a single application will be isolated. We should expand diversity that seeks the single best network systems and uses integrated systems.

A reasonable combination of promotion, keyword selection and presentation of the content can filter invalid clicks better, and attract more customers, thereby more users will be allowed to save costs and achieve better effects.

4.3.1.2 Integration of web resources

We should be concerned about integration of web resources. There are many websites related to our industry. For example, related companies could release information for us. If only 20% websites of these related websites have our corporate information, each website brings a little page view; day after day it will give us enormous exposure opportunities.

4.3.1.3 Web integration technology

Web integration technology is a system to ensure that any upgrades without changes to any database.

- (a) No matter where users login, registration, logout, it will be fully synchronized.
- (b) If you forget the password, or modify the password, or modify your password question answer, complete synchronization.
- (c) You can amend user information, complete synchronization.
- (d) The original functions, security and stability have no any loss.
- (e) There is no limit of any installation directory of a system.

4.3.2 NETWORK MARKETING COMMUNITY

Network Marketing community effects are obvious by creating innovative Posts. The forum of VESP is set up at <http://vesp.se/phpBB3/>

4.3.3 NETWORK MARKETING VIDEOS

In the history of network marketing, from static texts and images to dynamic videos is a major progress of online advertising. From then on, network Marketing has entered a new era of more need for creative and more marketing power. A successful video should be creative and impressive and it can be popular in large scale.

4.3.4 ATTRACTING ADVERTISING AND BUILDING UP FRIENDSHIP LINK

A successful website will be able to attract more attention and advertising. Google AdSense is a very developed example. It brings financial benefit from webpage (<https://www.google.com/adsense/>). More friendship links will help us to improve the page views of each other.

4.3.5 ENHANCING THE BRAND VALUE

It is easier to enhance the brand value by internet.

Internet is not only a spread media but also a powerful interactive marketing platform. In this interactive platform, we can not only greatly enhance the visibility of a brand. More importantly, the reputation and brand loyalty are able to be enhanced by use the interactive marketing technology.

Enhance reputation Strategy

- Through interactive marketing strategy, the brand can provide users with an online interactive platform, allowing all users to participate in building the brand's value and improving products, so that users and the brand has a close contact and we can get immediate response from users, customers and potential customers.

- The brand provides users with a range of value-added services that allows users to see that this brand has more opportunities to be cooperated with not only just now but also in the future. We provide more services, technology support and keep the contact with customers by the online system. That can enhance the brand reputation by users and at the same time enhance brand loyalty.

Enhance loyalty strategy

- through a series of effective promotion campaigns, we will access a large number of potential customers and clients from databases. Through Internet technology, user groups will be categorized and valuable advice and information will be sent automatically to these user groups, thus there will be a significant increase in brand loyalty.
- Word-of-mouth marketing can be effectively carried out by the Internet. People who know the brand can disseminate the brand reputation and we can provide the platform for it.

4.4 IMPROVING PAGE VIEWS

This is a fascinating topic, but also the most difficult one to resolve. This requires some experience. Some people have tried numerous times to change the page view, but still lack progress. The success of some people may be accidental, but more important is that they keep practicing. Improving page views helps promote new technology, increase business opportunities and create economic returns

4.4.1 SEARCH ENGINE PROMOTION METHODS.

Generally speaking, when people need some information and they do not know where exact to find it, the most common way is to use a search engine. Data shows that more than 80% page visiting comes via search engines. The same for companies, when potential customers need service in a particular area, the most common method is to search online, and then to select the appropriate contact of the company's Web site from the searching result.

Networks are composed of countless number of sites, our web site is only one of these sites, if we have not joined the search engine and have not created web site links, then the site can only be regarded as a nameless island in the Internet.

4.4.1.1 Search engine registration

When the web site has been done, visitors would not appear if we just wait for them and do nothing. To let people find our site, the simplest approach is to submit it to the search engine. Although the major search engines and directories have charges (such as Yahoo), so far the largest search engine Google is still free, and it dominates with over 60% of the search market.

Search engine registration works well. The scope of the impact is broad and effective time is relatively long.

4.4.1.2 Search Engine Optimization

SEO gives web pages a very good "communication" with search engine, so that search engines can properly understand your page. If the search engine cannot find your site, then there will be no ranking. Since each search engine needs a certain way to find sites, there are certain rules that you will need to follow.

4.4.1.2.1 Keywords Analysis

Search engines generally have their own database, when you register a search engine, your web pages and the corresponding keywords are stored in database. When you search a keyword by search engines, search engine does not really search the whole internet, but search the key words that you designated of your website in the database. Then it submits the corresponding Web sites with the degree of keyword matching as well as the emergence of high and low frequency words.

Therefore, keywords are always used when people search. Keywords Analysis and SEO analysis are very important tasks. First of all, main keywords of the website should be determined, and then those keywords should be optimized, including keyword density, relevancy and prominence etc.

Name keywords

Keywords, in other words, are the words describe your Web site when you registered it for a search engine. The search results ranking of search engine are based on the keyword terms. If you have good keywords, your website in search engine rankings will be higher, and then the page view will be improved. Data shows that when people see a lot of pages of information in the search engines, they rarely have enough patience to read all of them, most only see one or

perhaps a few pages at the beginning. If a web site has low ranking, it will not be able to attract more people to visit.

When we name keywords, we should use common internet terms as least as possible, since they can not embody the characteristics of the company, and ranking of keywords in the database will definitely drop behind. We can use the type of industry or the categories of company operating products. They should be simple and clear.

We should not use the brand of enterprises or product names as keywords as well. Registration in search engines is to seek potential customers who are generally not very familiar with our company's name at beginning, in such case, when they try to search, they probably will not enter keywords of the company's name, so that some potential customers will be missed.

We should not use emotional terms such as "the best" or "the first". On the one hand, visitors mostly use neutral vocabulary to search. On the other hand, some search engines do not want any website register keywords as these emotional words, or else they will be deleted.

Try to use the professional vocabulary as far as possible. This will enhance the opportunity to access to those potential customers. In addition, you can write a few keywords as the number of keywords is unlimited. However, most search engines will only register the ten first of these keywords. They must be input as so-called "Meta tags".

Identify the keywords

We identify the keywords of the website as "sustainable development", "explosive", "energetic materials", and then optimized the key words. Focusing on doing the title contains the keywords and the body with keyword density; we will see the results soon.

4.4.1.2.2 Log Analysis and Traffic analysis

Log and data analysis is often neglected by people, in fact, no matter large or small-sized Web sites; it is the work with great significance.

(1) Web site log analysis: there are many types of Web log analysis such as the visiting sources, browsers, screen size of clients, the entrance, the bounce rate, PV, etc. The three most relevant with SEO work: the search engine traffic; analysis of search engine keywords; statistical analysis of user search behavior.

(2) Important data mining: through our own Web site log analysis as well as external SEO tools we can analyze important data which include grasp the industry hot spots; predict potential hot spots, the higher sensitivity of the information, the better predict the potential of popular information.

Traffic analysis allows us to determine how visitors find the site, or why some visitors did not find the site. For example, when we register the site with search engines, and we did not find that visitors come from them in the analysis, we have to check if our site was listed successfully in the directory of the search engine. If we did not find our site, then we can re-register.

4.4.1.2.3 Link exchange

Exchanging friendship Links with other sites can increase opportunities to be found by a search engine. At that time, our sites may no longer be an island, since the search engine has the information of the website that can show the website to strangers who are likely our potential customers.

Link Popularity

Web content is linked by Hypertext approach, which is same as websites. In addition to search engines, people surf the internet from different sites via links. The more other sites link to your website the more page views you will get. More importantly, if your site has many external links, search engines will believe it is of importance and give you higher rankings. Therefore, it is worth to spend a lot of energy to do link exchange with others.

Each company's website has its own resources, which can be expressed as a certain amount of page view, registered users' information, valuable content and features, and online advertising space. Using web resources and cooperating with partners, we can achieve resource sharing and expand the revenue together. Exchange of links is the simplest form of cooperation, that is, to place the others' LOGO of website or website name in each own web site and set up a hyperlink to the other site, which allows users to find what they need from partner sites. The advantages of exchange links shows in several main areas: access to page view, enhance

users' impression, increase rankings in the search engine, and gain credibility through cooperation of the recommended sites. In general, each site tends to link to other sites with high value, so accesses to other sites means partnership and the recognition from similar field sites.

External links policy: the link text contains the keywords; exchange links with high relevance sites as far as possible; the number of links to other sites should not be too much, otherwise, the value is little.

Search engine optimization is critical to a website's survival and development, but it is not only the matter of importance. High-quality and original content of a website is the principle approach to increase the page views as well as customer loyalty.

4.4.2 E-MAIL PROMOTION METHODS

About e-mail promotion, I believe there are two valuable approaches - Under license Email Marketing and E-mail signature. Under license Email Marketing contains internal and external list marketing Email marketing. Internal list is known as e-mail list which uses information of the registered users from the site to carry out Email marketing, such as newsletter, Members promotion and e-publications. External list Email marketing carries out Email Marketing by users' e-mail address of professional service providers, which send information to service providers by the form of e-mail advertising.

E-mail signatures, can be exchanged with other people every day, such as the BBS or EMAIL. We can take full advantage of the signature by adding our own URL address, and e-mail program will automatically convert it to links, so the recipient would be very easy to connect to our Web sites.

4.4.3 RESOURCES COOPERATIVE EXTENSION METHODS

Besides website link exchange, there are Resources Cooperative Extension methods which include advertising exchange, content and user resources cooperation among target sites with

similar co-promotion purpose. The most commonly used approach is web site link strategy which uses the site visits resources of partnership to cooperate in the promotion of each other.

4.4.4 ONLINE ADVERTISING PROMOTION METHODS

Internet advertising is one of common strategies of internet marketing which works well for network branding, product promotion, website promotion. Common form of online advertising includes: BANNER advertising, keyword advertising, classified advertising, sponsorship advertising, Email advertising and so on. BANNER advertising is based on web pages, keyword advertising is a form of search engine marketing, Email advertising depends on Email marketing permission, so we can see online advertising can not exist in isolation, and it needs a combination of a variety of network tools in order to achieve transmission of information. Online advertising can be used to promote a website with the advantages of high range, diversity, applicability, and release in time, which suits the early stage of website promotion.

4.4.5 PUBLISHING ARTICLES

When we publish articles about the project, the home page on the URL can be attached in articles. The traditional media publicity is very broad, usually, print media will not simply go away and other people can see them anytime.

4.5 OPTIMIZATION OF THE WHOLE SITE

Now we already have a very good start, however, in the long term the optimization of the whole site is more important. The real focus of search engine optimization is not just the ranking, more importantly, but the optimization of user-orientation and the contents of web site. Firstly, we need to offer useful information and service to users. In other words, the supreme goal of search engine optimization is the user experience. Secondly, we need to focus on content optimization, that is, whether the site content contains the information that

users need. It is very important that the contents of Web sites have valuable and continuously updated information for users.

5. ENHANCING USABILITY - USER CENTERED DESIGN

It is important to design and build up a high usability system. No one wants to make a system but seldom use it. We want that our system can be used efficiently and in a long-term, thus users' reception cannot be ignored. We should be able to meet the users or user organizations' needs, and have a friendly interface by communication between user and the systems.

5.1 INVESTIGATING USER NEEDS THROUGH QUESTIONNAIRE, SEMINAR OR WORKSHOP

Since different companies and universities are in different circumstances, we want to understand well their own characteristics, advantages as well as they also could be a complement to each other. I have done the field study of factories and companies, school, community and community management. About 50% enterprises in Vingåker municipality have been interviewed and studied. More information about them please see APPENDIX B. The activities include participative observation, that is, watch how people work and how they solve problems at their work places, and interviews, questionnaires and survey.

5.2 RESULTS FROM FIELD STUDYING COMPANIES AND ENTERPRISES

5.2.1 COMMON FEATURES OF COMPANIES IN VINGÅKER MUNICIPALITY

(1) Background

History: Companies and enterprises in Vingåker municipality all have long history, from 10 to 150 years.

Scale: There are 1 to 280 employees in different companies, and most of them live in Vingåker municipality.

(2) Marketing

(a) Business: More than half companies have business in the local area and Sweden. Some of them have business in Europe or the World. Some companies import raw and processed materials from European companies.

(b) Marketing approach: Website, telephone, radio, TV, newspapers, magazine, market activities to promote brand.

(c) Attracting business by superiority as following:

- Good quality and Reputation;
- Good relation with customers and old customers recommend companies to people;
- High service level: quick responses to customers; on time deliveries; Training customers so they can use products well;
- The webpage is the most important;
- Seeing possibility: even if it looks impossible, we still need to keep thinking.

(d) Internet marketing:

- Advantages: Fast, abroad, Important and it is the future;
- Functions: Enable to inform customers a good picture of how product will look like; Offering programme technology training, so costumers can learn how to use products; Making sale order by internet directly; Contact with customers and businesses.

(3) Prospect

- Companies hope to expand business to Europe and the World;
- Companies want to improve webpage and make sales by internet to whole World at the right price;
- Companies want to keep good service, so customers all come back;
- Companies want to have more contacts with universities;
- Companies want to be bigger but not alone, want competition, in order to meet customers' need better, to be more efficient, to have someone to compare with;
- Companies want to be unique: better safety, service and price;
- Companies want to develop research, test different components of a product;
- Companies want more opportunities and make progress all the time.

(4) competitive advantages comparing with competitors

- (a) High-technology: Quality is better. They have the most modern technology and update machines
- (b) Better service to customers: Make customers come back even though they are not the cheapest:
 - They Meet customers' needs better; Try to do everything customers want;
 - Be sensitive what customers want, listen to the customers and strive to have satisfied customers and act as a stimulator for the customers to find new concept
 - They have flexible and fast delivery time
- (c) Forward-looking: Continuous improvements and innovations are necessary
- (d) Expertise: They have the expertise that no one else has
- (e) Unique products: The products are unique and they cooperate well with customers

(5) Features of Vingåker municipality

- Natural resources: sand, limestone, and lots of land, therefore houses are less expensive to build (50% price), and factories can be built cheaper
- Clean nature: environmental protection (independent quality systems)
- Transport: railway, roads
- Location: Vingåker is located at the middle of Sweden, close to big cities (Örebro, Linköping, Stockholm, Västerås...) and businesses, one hour by car;

People who work here can choose where they want to live, their families can live in different cities nearby;

Vingåker is able to be expended.

- Factory outlet: attracts 400,000 – 450,000 people each year
- Nice surroundings: fresh air, lakes, fishing, agricultural landscape and connections
- A small town: long industrial history, with multiple high-tech industries; Easy to manage, community can work flexibly and faster; There is less competition in town.
- People are loyal and can be trusted, no job-hopping; People are ambitious, have creative minds and want to build friendship with other companies; Vingåker has good engineers; People in factories have professional knowledge; It is easy to find skilled and loyal people.
- Community (Political) support: Vingåker community politically protects and helps companies; Community is positive: People can buy land and can talk to the community, and they may know you.
- Media: there is newspaper of high-tech, which can be used to introduce and publicize VESP

(6) What can be improved about Vingåkers municipality

- (a) Community: The center (commercial zone) of Vingåker can be Larger; We need a better environment for people and kids to live here; We need to build more buildings, thus people can live here and work at other cities; We need more people to be here; People need more choices; Community can use the same organization with other communities for some purposes.

- (b) Education: We need better services and higher school quality. Students need to be more ambitious. The education level needs to be improved. There are not many people with high education, and high education level jobs are too few; We can enhance language education to help work with the world.
- (c) Business: Need good and stable companies in the community, and extend business to let people be able to find jobs here; we need to increase communication with companies, need to be more active.
- (d) People: Generation shifts. There are many old and kids. Middle age people are gone. We need new blood from outside of the town.
- (e) Service: In countryside there is no signal for cell phone and very slow internet which is bad for communication and business.
- (7) what is the key for Vingåker municipality to be successful
- (a) Vingåker Energetic Science Park (VESP):
- Companies, universities and society in Vingåker need to work together and build a brand, since everyone is good at something. Vingåker must be branded for interesting companies with unique products and ideas to achieve sustainable solutions and high environmental practice. The Internet must be used.
 - Every company has certain customers. They are a strong backup force to help promote the brand.
 - VSP offers communication and combination of channels, since we need a local arena and improved communication.
 - Everyone in Vingåker does not compete with other local companies, but with the World. We need to have a view from the World side and need to take time to understand each other. VESP can organize meetings for companies and universities to support each other.

(b) Be unique: We have Vingåker Energetic Science Park, with political support; we have Vingåkers Factory Outlet, which attracts 400,000 – 450,000 people each year; we also need hardware facilities as well, such as more shopping places, bigger shopping center, road building, etc.

(c) International collaboration :

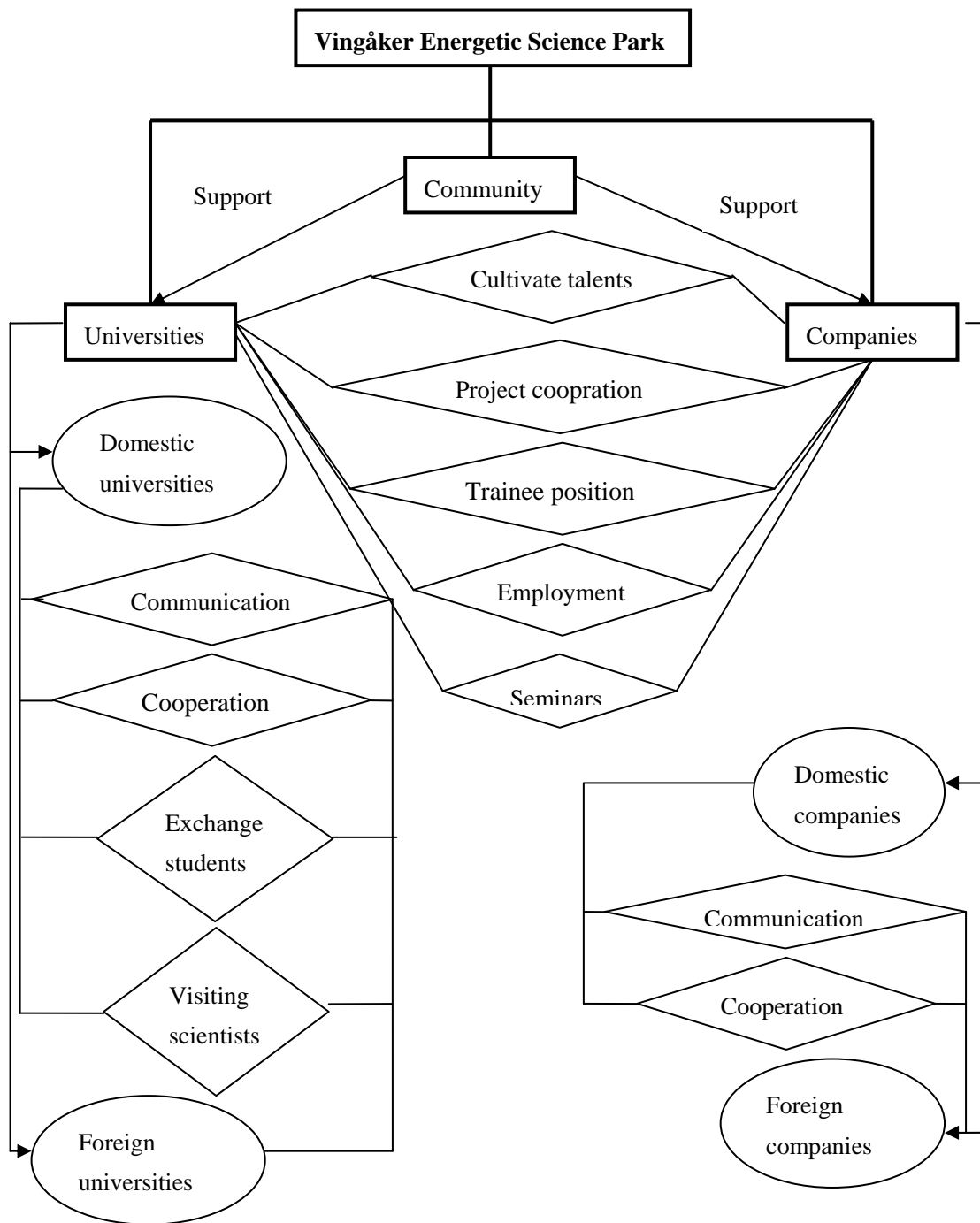
Sweden - quality: Talking about Sweden, the good quality is well known, so we need to collaborate with international companies, organizations and universities, and the highlight is the good quality and high- technology; Stable and sustainable development is another feature of VSP.

Possible collaboration examples: 1.invest: community agrees ISA; 2.Other big organization: Stockholm Business Arena

(d) A system for visitors: shopping, golf, food, hunting, fishing and tourism

(e) A system for living: We need a complete system to attract people to live and work here. Say we can offer houses over looking lakes, easy and inexpensive to buy a house here. At the same time, we need more job positions and higher level education.

5.2.2 THE NETWORK BUILT FOR VESP



VESP sets up a network among universities, companies and community. The bridge between universities and companies is technology. Universities cultivate talents for society and the companies. The communication between universities and companies is necessary, just as companies can tell universities what kind of talents they need; they also can also have project

cooperation. Companies can offer projects to universities on items they want to fulfill and universities can give technology support to them; Companies can offer trainee positions/thesis practice opportunities to students at the same time this is an efficient and economical way for companies to get additional competence and to get to know potential employees; Companies can provide job opportunities to students when graduate; Last but not least, successful talents in companies can give lectures or seminars to college students to introduce the current situation of business, economics, the real world and their successful experience as well.

The universities include domestic universities and foreign ones. We can enhance the communication between them. For example, we can have some activities to let teachers and students communicate with different universities and have some activities to exchange knowledge and cultures between them; We can have more project cooperation between domestic universities and foreign universities; We can have more activities among cooperating universities such as offer more opportunities for exchange students, or invite cooperative universities' teachers and students to visit their universities.

It is the same for domestic companies and foreign companies. We need to have more efficient communication and close cooperation among them as well.

The Vingåker community gives 100% political support to the development of contacts for and between universities and companies.

5.3 INTERACTION DESIGN

Interaction design plans and describes the way of acts, and then depicts the most effective form to convey them. The authors⁴ of "Interaction Design - Beyond Human-Computer Interaction" concluded interaction design as: design products to support the people's day-to-day interactive work-life. Specifically, interaction design is about create user

⁴ Authors of "Interaction Design - Beyond Human-Computer Interaction": Yvonne Rogers, Helen Sharp and Jennifer J. Preece

experience. The aim is to strengthen and expand the ways of people's work, communications and interaction.

From the user point of view, interaction design is an effective and pleasant technology that makes products easy to use. It is committed to understand the target users, their expectations, and users' behaviors when they interact with the product, human psychological and behavioral characteristics and effectiveness. At the same time, it enhances and expands those interactions.

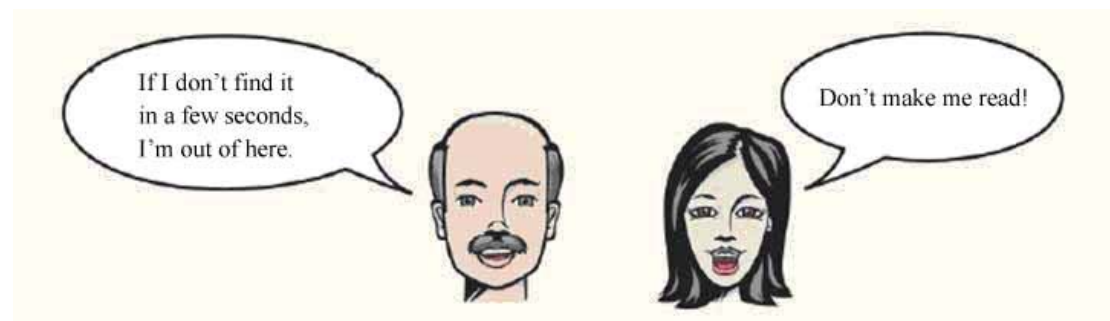
Through the interface and interactive design, a relationship between products and users is established, so that the objectives of the users can be achieved effectively which is the purpose of interaction design.

Usability is the basic and important indicator of interaction design, which is the overall evaluation of the product. From the user point of view it measures whether the product is effective, easy to learn, safe, efficient, easy to remember and of high-quality.

5.3.1 QUICKLY ATTRACTED VISITORS

People visit websites for content

Our website should be able to answer their questions or offer information to help them complete their task. Information should be easy to find, easy to understand and accurate, up-to-date and credible.



Janice and Nielsen⁵ have common opinion, when people surf on the Internet, most people would skim the site rapidly and enter the page they would be interested in. Even in the target information page, the majority of users still skim the content before reading carefully. When people search on-line, they will not read until they find the content they need.

Data display: 66% of the (professional) users, who once have had a bad experience of a site, would rarely visit that site again. Visitors deciding to give up a web site only need less than two minutes on average.

Our strategy:

- (1) The design should suit user habits as far as possible.
- (2) The more important content should pop out in the web page and a clear visual hierarchy should be established.
- (3) Highlighting clicks.
- (4) Omitting redundant words
- (5) Adding the name of each page, so visitors know where are they without thinking.
- (6) The navigation of higher level and lower level can be different, but must have content and visual consistency.
- (7) Do not use drop-down boxes if it is not necessary, because it hides information.

A good site navigation system is able to tell users the following information in one second:

What is this site about? (Web site LOGO)

Where am I? (Page name)

What sections does the site have? (Navigation column list)

On this page, what information I can have? (Page Navigation)

What is effective web content?

Web site content is like a good dialogue (interaction), can answer people's questions; Allows people to obtain information on what they need; has different groups in accordance with the different users and needs.

5.3.2 DESIGNING WEB SITE FROM USERS PERSPECTIVE

⁵ Janice (Ginny) Redish, (2007) Letting Go of the Words: Writing Web Content that Works

A successful interaction system must be able to meet the needs of users. This means that it can identify not only the various user groups, but also skills, experience and preferences of individual users.

Concerned about users

Users should be at the center for the design, so we need to know users well, which includes user groups, user information, characteristics of users, users' backgrounds and tasks. We can get familiar with the users, their tasks and needs by visiting their office to talk to users, observe how they work, make videos of their work, talk to users when they work, let users be involved in the design process, analyze tasks, use surveys and questionnaires etc.

5.3.3 USER EXPERIENCE

User Experience refers to the aesthetic value and software applications which are based on the user's point of view. It is also the degree of fit between the user's needs and the web site. User experience has four important interrelated factors: branding, usability, functionality, content.

Branding used to obtain a higher confidence from users: the brand of a web site probably depends on whether it is unique and has strong characteristics and abundant content. In addition, the visual experience influences the brand value very much.

Usability shows how easy it is to use web site content, structure, process and characteristics. We should minimize errors and focus on optimizing the whole page of the site according to target audience. We should see from the user's point of view what information they need, and the information needs to be placed where anyone can find it.

Functionality describes all the technology and the process and application of interactive services for users. Functionality contains access to the users query information and feedback to the user; keeping visitors' privacy of personal information; good site management procedures.

Content refers to the actual content of the site (text, multimedia, images) as well as its structure, or information architecture.

User Experience Optimization

User Experience Optimization is an optimization of users' psychological feelings when they interact with a product (service). The core significance of site optimization refers to user experience optimization, which satisfies user experience and optimizes the search engine at the same time. The design should be User-Centered and we want all visitors to like the site.

The user experience depends on the speed of access to the Web site, advertising strategies, website design aesthetics, the improvement of user confidence, the web path naming and usability etc. Search engines will give our site a good ranking only if users like it as well.

User experience optimization more relies on the operator's experience; through constantly summing up of experience will be possible to do a better user experience of the web site.

In short, we want a good web page to:

- Allow users understand our site easily
- provide information that users need
- minimize steps needed
- provide assistance for users
- create good interaction

5.4 INTERFACE DESIGN

A good interface design starts with an understanding of people: what they intend to see, and how they might interact with it. How can we set appropriate expectations for users? How do users and our webpage end up good communication to each other?

Nowadays more and more people begin to notice the great impact that interface design brings to users. By the user interface systems, users can understand the system and interact with the system. When we design interfaces, we are concerned about the interface components, layout, style and interaction, but the interaction is the source of the interface constraints. The design can be more beautiful, more abstract, more artistic, as long as it does not violate interaction.

The three major principles of user interface design are: the interface is under the user's control; reduce the burden on user memory; maintain the consistency of the interface.

5.4.1 ART DESIGN

When people visit our Web site, the first impression is very important, which directly determines whether visitors will become customers, thus the art design of the site is very important. Web site should be designed gracefully and beautifully, and then it would give people a strong and reliable feeling.

The basic principles of web site art design:

- (1) Style based on site content and audience preferences. Different types of users have different tastes.
- (2) Try to avoid dazzling and extraordinary design, the color design should not be too obtrusive. The classification of content should be clear and user-friendly. Too much content in one page would make visitors feel at a loss.
- (3) Do not use too much dynamic effects, which would slow down the speed of the site and divert the user's attention.
- (4) The content should be logically arranged in different classification according to different categories of products in order to let users understand content better.
- (5) Layout, navigation and design style should be consistent and create a good convergence of the various pages.
- (6) Color design should be reasonable; each page can not use too many colors. Otherwise the visitor will feel chaotic and visual fatigue.
- (7) Text should use moderate size. The background color need to contrast with text color for easy reading.

5.4.2 VISUAL STYLE AND AESTHETICS

One of the most important factors of interface design is the appearance of the web site. People don't trust sites that looked amateurish. A professionally designed look gives a web site a lot more headway with users, even if those users have few other reasons to trust the site.

Good looks matter. Donald Norman⁶, one of the best-known gurus of interaction design, said that "positive affect enhances creative, breadth-first thinking whereas negative affect focuses cognition, enhancing depth-first processing and minimizing distractions." He added that "Positive affect makes people more tolerant of minor difficulties and more flexible and creative in finding solutions." Interfaces actually become more usable when people enjoy using them.

A well-designed interface takes all of content, meaning, and interactive behavior all of these factors into account. The VESP website was designed by considering all contents and interactive behavior after studying and analyzing users' needs. The main background pattern of sites is on the theme of sustainable development. Green is the main color of background. The pattern shows beautiful nature supporting our theme. The traditional Swedish house in the background stands for Swedish characteristics. The pattern of global earth reveals our international direction of development.

5.5 USABILITY AND USABILITY TESTING

5.5.1 USABILITY

Usability is a quality indicator for interactive IT product and systems. It describes if products are effective, easy to learn, efficient, easy to remember for users and the satisfaction level, that is, if users can complete their missions efficiently, and how are their subjective feelings. In fact, it is the quality of products from what users have seen, and it is the core of the competitiveness of the products.

Usability includes the following five elements:

- Learnability: the first time when visitors use it, if it is easy to learn.

⁶ See Donald Norman, "Emotion and Design: Attractive Things Work Better," at <http://www.jnd.org/dn.mss/Emotion-and-design.html>. See also his book on the subject, *Emotional Design: Why We Love (or Hate) Everyday Things* (Basic Books).

- Memorability: after a period of time when visitors come back to the site, if they still can use it proficiently.
- Efficiency: how fast users can complete the task.
- Errors: including if it is easy to get errors, and how easy it is to revert back from errors.
- Satisfaction: the level of users' satisfaction and acceptance.

5.5.2 USABILITY TEST

Usability testing of web sites is an essential element of quality assurance, which is a true test of how people actually use a web site.

If you want to build a good web site, usability test is a necessity. Testing one user is better than none and we should do the test as soon as possible. Testing one user earlier is better than testing 10 users in the end.

How do we test?

The test can be carried out in the process of the project. It is not unnecessary to wait until the end of the project. At the beginning of the project we can create a number of versions (even if they are very rough versions) of the site design by skills, experience and creativity and then observe how people use and feel them.

When the website is finished, the simplest task is let some users see the site in order to see whether they understand it, the site objectives, value proposition, organization, operation and so on. More tests can let users complete some certain tasks, and then observe how they finish them.

The test was carried out by three groups. Each group has four users. Users in group one are students in IT department; users in group two are students in other department; users in group three are employed. All users were asked to work through the tasks and do all the questions about their impression and experience when using the site of the survey.

During the test, users' behavior was observed, noticed and recorded. For example, when they were hesitates or misunderstand of something. Those are also the data need to be analyzed and improved later.

About the usability test survey please see APPENDIX C.

How do we improve the site after testing?

Classification of problems: looking back at the problems we have found and deciding which of them need to be amended.

Solve the problem: from the test, we can see the user point of view of our works. Such experience is often able to provide new solutions for the project, or give us a new point to look at the original questions. The point is to fix the problems in time

Testing result

- Part of problems of the website we have found and fixed:
- The index page had too much information and it was hard to see the main idea;
- The map of Vingåker did not stand out at the index page;
- The classification was not clear and user-friendly enough;
- The layout appears differently in different browsers;
- Some vocabulary is not accurate enough;
- A hyperlink was repeated;
- Colors of texts and background are fixed;
- There is no newsletter system that can let visitors login and then send them newsletters.
- Swedish characteristic didn't stand out until replacing a traditional Swedish house and marking Sweden with a national flag on the pattern of earth at background and so on.

Conclusions

In this thesis, we have presented works that investigate the market and users' needs, and design and build of web pages for VESP.

Field study was carried out at the first stage of the thesis work, which included participative observation, interview and questionnaire of factories and companies, school, community and community management. The result of survey was analyzed, which formed the basis for the content of the webpage of VESP.

Vingåker Energetic Science Park (VESP) serves as a platform and a full scale laboratory for research and development of sustainable and environmentally correct methods for disposal of explosives material and articles. It builds and maintains a network of universities and companies not only in Sweden, but also in Europe and the World range and also supports researchers and organizations who working with related field as well.

The brand was designed, not only about the name, logo, symbol and slogan, but more importantly from the perspective of the development of the whole society. I have done the research about the city's core values and the brand positioning, and the strategies were developed. This is an overall balancing process.

The market was investigated, and for promoting the market the brand has to be enhanced, the internet based marketing should be explored and many strategies should be implemented.

Then the webpage of VESP was built at www.vesp.se by interaction and interface design. After usability testing the webpage was improved. The webpage has to be promoted by integration of web resources, web promotion and web integration technology, network marketing community, friendship links and so on. The following task to improve the number of page views can be done by search engine promotion methods that include search engine registration and optimization, such as keywords analysis, log analysis and traffic analysis, link exchange. There are other methods to improve page views: E-mail promotion methods, resources cooperative extension methods, online advertising promotion methods and publication of articles etc.

Future work

In this section I discuss what further work can be done in order to improve the present work.

In the future it will be interesting to further develop the website. Although now we already have a very good start, in the long term the optimization of the whole site will be more important. The real focus of search engine optimization is not just the ranking, but more importantly, the optimization of user-orientation and the contents of the web site. Firstly, we need to offer useful information and service for users. Secondly, we need to focus on content optimization, that is, whether the site content contains the information that users need. It is very important that the contents of web sites have valuable and continuously updated information for users.

Furthermore, we would like to establish long-term forms of cooperation between universities, colleges and businesses and take full advantage of them to work in research, development and education. The universities and colleges in the APPENDIX A have been listed can be potential collaborators in future. This work will focus on the formation of a research center that has sustainable, eco-virtuous cycle of treatment and rehabilitation of explosives and other related technology systems. The competitive edge needs to be kept and enhanced.

Last but not least, the website can be improved all the time in the process of using it which is process of testing as well. Since the whole system is new and just being built up, problems can come out on the way of development. It is a non-stop job to keep it complete and being better.

In sum, this is a long-term work, of which I have already completed the VESP market research, analysis, and the brand and website design and establishment. For future work, we will need continued development of the project based on the plans and strategies, and continue to maintain and expand the existing network, do a good job of maintaining and updating the web site and make progress all the time.

APPENDIX A. INFORMATION ABOUT VINGÅKER

1 Basic information

Vingåkers community belongs to Södermanland County, and has totally 8912 inhabitants and a total 441.86 km² of area (Land area 372.47 km²). The density of population is on average of 1 24.7 inhabitants/km². For more information please visit the Website www.vingaker.se

2 Education

2.1 Status quo of Vingåker

Elementary school: Students in elementary school are between 6 and 15 years old. Elementary schools in Vingåkers municipality are divided into three areas Rector. Year 1-6 schools have also pre-and leisure.

Secondary school: Vingåkers municipality does not have its own secondary school, with the exception of the IV program. The municipality has an agreement with Katrineholm, Flen and Hallsberg for secondary school places. The majority of high school students choose education in Katrineholm, at Duveholmsgymnasiet, Lind High School or Ellwynska School. In the autumn of 2008, over 470 young people from Vingåker went to secondary school.

2.2 Information of universities nearby (radius 150km)

Uppsala University

Established as a university: 1477

First establishment: 1477

Student population: 19900

Location: Uppsala

Website: <http://www.uu.se/>

Swedish University of Agricultural Sciences

Established as a university: 1977

First establishment: 1977

Student population: 3,600

Location: Uppsala and other

Website: <http://www.slu.se/>

Stockholm University

Established as a university: 1960

First establishment: 1878

Student population: 22,400

Location: Stockholm

Website: <http://www.su.se/>

Karolinska Institutet

Established as a university: 1965

First establishment: 1810

Student population: 5,500

Location : Stockholms län (mostly Solna, but also some departments in Huddinge, Stockholms kommun and Danderyd)

Website: <http://ki.se/>

Kungl Tekniska Högskolan (Royal Institute of Technology)

Established as a university: 1970

First establishment: 1827

Student population: 11,700

Location: Stockholm

Website: <http://www.kth.se>

Linköping University

Established as a university: 1975

First establishment: 1969

Student population: 16,900

Location: Linköping

Website: <http://www.liu.se/>

Karlstad University

Established as a university: 1999

First establishment: 1977

Student population: 7,600

Location: Karlstad

Website: <http://www.kau.se/>

Örebro University

Established as a university: 1999

First establishment: 1977

Student population: 8,300

Location: Örebro

Website: <http://www.oru.se/>

Mälardalen University

Established: 1977

Student population: 13000

Location: Västerås and Eskilstuna

Website: <http://www.mdh.se/>

University of Borås

Location: Borås

Website: <http://www.hb.se>

University of Skövde

Location: Skövde

Website: <http://www.his.se>

Stockholm School of Economics

Location: Stockholm

Website: <http://www.hhs.se/>

Ersta Sköndal University College

Location: Stockholm

Website: <http://www.esh.se/>

Södertörn University College

Location: Flemingsberg (Near Stockholm)

Website: <http://webappl.web.sh.se>

Jönköping International Business School

Location: Jönköping

Website: <http://www.ihh.hj.se/eng/>

Jönköping University

Location: Jönköping

Website: <http://www.hj.se/>

APPENDIX B. INTERVIEWED COMPANIES AND FACTORIES

About 50% enterprises in Vingåker municipality have been interviewed, which are listed as following:

Companies	Homepage	Business Scope
KCEM	http://www.kcem.se/	KCEM is a network and a meeting centre for companies, universities, authorities and all persons within the Energetic Materials sector.
Vingåker Factory outlet	http://www.vfo.se/	Brands Clothes
Clear edge group	http://www.clear-edge.com/	Clear Edge Filtration™ offers a large variety of specialty filtration products for numerous industry applications.
Weber International	http://www.e-weber.com/	Weber, a full offer of solutions for building, construction and renovation
Nammo Group	http://www.nammo.com/	Recycle and demilitarize ammunition
VYTAB	http://www.vytab.se/	Development, Construction, Manufacturing, Coating (hot), Montage of steel structures in general and the stairs in particular.
provinsbutiken	http://www.provinsbutiken.se/	Farm products

Voith paper	http://www.voith.com/	Woven Forming, paper making
Cesium	http://www.cesium.se/	Mobilt Säkerhets Valv; Stölskydds bur för MC-Snöskotrar- Fyrhjulingar; MC-lås med rörelse alarm, etc.
Gränslandet	http://www.granslandet.se/	Offer financial support for projects of countryside development
Viadidakt Björkkvist	Helene http://www.katrineholm.se/	Adult education
Sörmlands Sparbank	http://www.sormlandssparbank.se/	Saving bank
Olson machine service AB	http://www.olsons.se/	Service, safety and production of Rönqvist presses
Lindroths tryckeri	http://www.hos.nu/	Printing house
Axdos AB	http://www.plcsweden.com/	Industirell automation
Spesab		Construction materials (wood, steel and plastic etc.)
Låtra Gård	http://www.lattrabriketten.com/	Bio products; Horticultural Forestry
European Union		The European Union (EU) is an economic and political union of 27 member states, located primarily in Europe.
Seclink	http://www.seclink.se/	SecLink is a security cluster, a network, which collects agencies, organizations and businesses which in their activities directly or indirectly, are employed in services and products that increase safety in our society.

Life time engineering AB <http://www.lteab.se/>

Requirements for any given product can be divided into three main groups: Safety, function and lifetime requirements. Safety requirements are regulated in law and their directives. Function properties are being taken care of by manufacturers. Our business area is being the customers' first choice when it comes to lifetime properties.

Regionförbundet
Sörmland <http://www.region.sormland.se/>

Cooperation projects encompass our commitment to Europe and the Baltic area, our own regional environment, culture and tourism, communications and social planning, as well as the development of knowledge and competence.

Dynasafe <http://www.dynasafe.se/>

DYNASAFE offers a broad portfolio of high quality and high performance products for explosion containment and destruction of munitions. Both business segments have a strong focus on safety and environmental friendly solutions. DYNASAFE also offers services and expert analysis within both business segments

Chilefonden <http://www.chilefonden.se/>

Chilefonden helps you to have a small or medium-sized companies that you think could grow in South America; helps have you to have a Chilean

company; helps you a project
which may become a product.

Fex <http://www.fex.se/>

Nitrex <http://www.nitrex.it/> Explosives engineering

NORDIC BALLISTICS <http://www.nordicballistics.com/> A company specializing in
consultation and education in all
areas of ballistic science.

APPENDIX C. USABILITY TEST SURVEY

Question list of usability test survey:

1. The first impression of the site was 1 2 3 4 5 (from not good to very good)
2. What was your feeling when you were visiting the site: 1 2 3 4 5 (from confusing to pleasant)
3. Was it easy to get to the home page from the page you started on: 1 2 3 4 5 (from difficult to easy)
4. In generally, finding a specific information was : 1 2 3 4 5 (from difficult to easy)
5. Was it easy to read (both font style and size): 1 2 3 4 5 (from difficult to easy)
6. Was there anything missing that you were expecting to see?
7. Was anything too obtrusive?
8. Any problems or suggestion on the color scheme?
9. The organization of the site was: 1 2 3 4 5 (from not effective to very effective)
10. How did you feel about the layout of the site?
11. What would encourage you to return to this site in the future?
12. Please name your three favorite things about the site, and your three least favorite
13. Please describe any new content or features you would like to see on the site

1 The copy of local newspaper on June 15th 2009

Kinesiska Zhang Lei är imponerad av Vingåker

"Vingåker är vackert och en speciell stad. Här finns många företag och outlets. Folk är engagerade, har gott hjärta, och jag upplever att de älskar sina jobb. Jag tror att Vingåker kan bli en unik stad i Sverige men också i världen", lyder den något fria översättningen av den kinesiska texten härintill, signerad av Zhang Lei, student som valt just Vingåker för att klara uppgifterna för en kommande Mastersexamen.

Zhang Leis beskrivning ger förstas Vingåkersborna anledning att sträcka på sig. Att hon, som för närvarande studerar vid Uppsala universitet, valde just Vingåker för sitt examensarbete har sin förklaring i att hon hittade Vingåker Energetic Science Park (VESP) på nätet. Det vill säga, forskningspro-

jektet med syfte att utveckla metoder för att på ett säkert och miljövänligt sätt destruera eller återvinna ammunition och explosiva ämnen.

Via kontakter med i första hand projektledaren Hans Wallin är Zhang Lei genom återkommande besök i Vingåker i full färd med att hälsa på och studera företag, skolor, banker och institutioner för att skapa underlag till examensprovet som ska beskriva kommunen och dess utvecklingsmöjligheter och som ska ge henne en ungefärlig motsvarighet till en fil. kand.

Mycket återstår

En hel del besök återstår men redan nu har Zhang Lei fått en ganska klar bild av Vingåkers kommun som hon tycker är "häftig", och med till synes glad förvåning konstaterar hon att i den lilla kommunen finns

exportföretag med inriktning på stora delar av världen. Nammo Vingåkersverken är ett sådant exempel. Voith Paper Fabrics i Högsjö ett annat. Lagg därtill Vingåkers Factory Outlet och intilliggande outlets som lockar besökare från när och fjärran.

Imponerad

Zhang Lei förklarar med ett leende att hon är imponerad. – Jag upplever att här finns en framtidstro, och det finns inget som säger att inte Vingåker kan lyckas, menar hon som mycket väl kan bli en värdefull förbindelselänk mellan Kina och Vingåker i projektet VESP vars målsättning är att med Vingåker som forskningscentrum samlar forskare vid högskolor och universitet från världens alla delar att ta fram metoder för destruktion och återvinning av explosiva äm-

nen. För att sedan kopplas samman med företag och handel och därefter marknadsföring internationellt.

Hur kan man stärka Vingåker?

– Genom fortsatt och utvecklad teknologi, säger Zhang Lei och tillägger, Vingåker har stora utvecklingsmöjligheter inte minst genom internet som ju har förändrat allt, öppnat en ny värld.

När Kuriren träffar Zhang Lei är det förutom projektledaren Hans Wallin också tillsammans med Lennart Larsson, chef för Sörmlands Tillväxtbank (som

tillhör sponsorerna för projektet), och Bertil Juhlin, förre kommundirektören som numera är engagerad som konsult/rådgivare för VESP.

Hans Wallin är den förste att understryka de framtida möjligheterna för Vingåker, inte minst ifråga om teknologi.

– Det är ju framför allt spets-teknologierna vi är duktiga på, säger han och nämner just Voith och Nammo som exempel.

Zhang Leis avhandling/examensarbete handlar således om hur VESP kan bidra till att stärka Vingåkers konkurrenskraft genom samarbete med universitet och högskolor via internet. Ett första forskarmöte ägde rum i Katrineholm i fjol med deltagare från tio länder. Ett nytt möte är planerat till den 23 juni, måhända med ännu flera länder representerade eftersom bygget av nätverk pågår och utvecklas.



Entusiastisk. "Jag tror på Vingåkers möjligheter", säger Zhang Lei.



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Långväga gäst. Zhang Lei på ännu ett Vingåkersbesök inför sin Mastersexamen. Här vid sammanträdet med Hans Wallin, Lennart Larsson och Bertil Juhlin som alla är engagerade i VESP – miljöprojektet för destruktion

KCEM Nyhetsbrev

Årgång 8 Nummer 2

Juni 2009

Kompetens
Centrum
Energetiska
Material



Utbildning
Innovation



Forskning

Zhang Lei - kinesisk masterstudent på VESP

På Vingäkers Energetic Science Park (VESP) hittar man just nu, och en tid framöver, en långväga gäst. Från Kinas huvudstad, Peking, kommer Zhang Lei som har valt att utföra sitt examensarbete här i Sverige.

Zhang Lei kom till Sverige och Uppsala universitet under 2007. Med sig i bagaget hade hon studier på Institute of Civil Engineering and Architecture i Beijing (eng. Peking), med inriktning mot geografiska informationssystem.

Idag arbetar Lei intensivt på sin mastersexamen. Som sitt examensarbete har hon valt att under 20 veckor utarbeta en marknadsplan och ett profilprogram ("branding") för att marknadsföra VESP och Vingåker på den



globala marknaden. Nyckeln till framgång ligger i att främja internationellt samarbete mellan universitet och högskolor och där fungerar Internet som ett viktigt verktyg, både för att nå ut med sin marknadsföring och för att bygga nätverk.

Målsättningen är att skapa ett starkt varumärke för VESP som står för (forts sid 3)

KCEM inventerar utbildningsbehov

KCEM inventerar behovet av specialistutbildning för yrkesverksamma inom explosivvaruindustrin i Östra Mellansverige.

En av de viktigaste uppgifterna för KCEM är att säkerställa att explosivsektorn har tillgång till efterfrågad specialutbildning för att stärka både individens och företagets konkurrenskraft.

KCEM och FEX styrgrupp har en omfattande utbildningsverksamhet i form av kortare och längre kurser, specialutvecklade för explosivsektorns behov.

Genom arbetet med EUExcert och utredningar beträffande validering och certifiering av yrkeskunskaper som vi genomfört åt Skolverket vill vi även bidra till utvecklingen av en explosivlinje på den nya yrkeshögskolan.

KCEM har av Europeiska socialfonden i Östra Mellansverige beviljats medel för att genomföra en förstudie för att klarlägga behovet av specialistutbildning för yrkesverk-

samma som yrkesmässigt hanterar explosivämnen.

På grundval av resultaten från förstudien avser KCEM att i september 2009 ansöka om medel för att under tre år genomföra en kompetensutveckling. KCEM har ambitionen att med stöd från Europeiska Socialfonden erbjuda efterfrågade utbildningar till starkt subventionerad kostnad till yrkesverksamma vid företagen i region Östra Mellansverige.

Utbildningarna kommer att ingå i KCEM kursutbud och möjlighet finns att få kunskaperna validerade och certifierade.



EUROPEISKA UNIONEN
Europeiska socialfonden

Europeiska socialfonden stöder projekt som främjar kompetensutveckling och motverkar utanförskap. Under perioden 2007-2013 satsas över 12 miljarder kronor på att hjälpa kvinnor och män att stärka sin kompetens och förbättra sina utsikter till arbete. Visionen är ett samhälle med arbete och nya möjligheter för alla.

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Livslängd hos explosivämnen - specialistområde på EXOVA
(sid 4)

KCEM önskar en trevlig sommar!



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FEX 2009

Vi har nu genomfört den tredje kursveckan av årets FEX. Denna, den sista veckan i maj, var förlagd till Stora Hotellet i Örebro, med Orica Mining Services som kursvärd. Två kursveckor återstår, dels vecka 35 i augusti hos Nammo Raufoss, dels avslutningen vecka 41 hos EURENCO Bofors i Karlskoga.

Den första kursveckan var förlagd till Södertälje med FOI som kursvärd och den andra uppe hos Kimit i Kiruna



Nästan alla kom med på bilden ovan i skopan vid besöksgruvan hos LKAB i Kiruna. Men med denna glada bild från kursveckan i Örebro är gruppen komplett.

Noterbart är att vi för första gången inte är på f.d. SAS Flight Academy på Arlanda. Kontakten med flyget har vi emellertid inte släppt helt då vi fortfarande anlitar kaptenerna Gunnar Fahlgren i Human Factor och Christer Lundström i CRM.

Årets FEX kurs har fler sökande än de 20 som slutligen blev uttagna. Kursen består av 2 deltagare från Finland, 2 från Norge och resten, 16 st, från Sverige. Andelen kvinnor är tyvärr fortfarande besvärande låg med bara 2 representanter.

Fördelningen mellan civilt och militärt är 9 respektive 11, varav några omfattar både civila och militära verksamheter. Gruppens sammansättning i övrigt är en bra blandning av erfarna och något mindre erfarna.



De som inte blev uttagna till årets kurs får på sedvanligt maner förtur till FEX 2010 om intresse fortfarande finns.

– Jag kan som en garvad kursledare konstatera att andan och inställningen hos deltagarna i FEX 2009 är en av de bästa, för att inte säga den bästa, av de 23 FEX kurser jag haft förmånen att leda sedan 1985, säger en glad Hasse Ahlgren.

Kinesisk forskarstudent

(forts från sid 1)

ett professionellt, högteknologiskt forskningscentrum.

Ett av Leis intresseområden är interaktionen mellan människa och dator. Hon är därför mån om att arbeta med ett tydligt användarperspektiv.

– Det spelar ingen roll hur bra din produkt än är om du inte har tagit hänsyn till användaren i slutändan, poängterar hon.

Genom sina högteknologiska studier har hon lärt sig att tänka logiskt och tekniskt. Men det är just vad som händer, där mellan människan och datorn, som ger henne den typ av kreativa utmaningar som inspirerar henne!

Så, några av de viktigaste ledorden för ett internetbaserat VESP kommer att vara användbarhet och interaktion som i sin tur, menar Lei, bäddar för effektiva och långsiktiga system.

Tankar kring VESP och KCEM
Genom sin fokusering på forskning, ut-

veckling och utbildning inom områden som hållbar och miljövänlig hantering och återvinning av framförallt explosiva ämnen, tror Lei att VESP kan utvecklas till något i särklass.

– KCEM, som genom sina framgångsrika erfarenheter av projektledning och internationellt arbete kommer också att kunna bistå VESP och vara en kraftfull samarbetspartner, tror Lei vidare.

Tankar om Sverige

Lei beskriver ett land med utbildningar på hög nivå och med universitet i världsklass.

Hon pratar om landets trevliga invånare, kända för sin vänlighet och uppriktighet,

som älskar att hjälpa till och får henne att känna sig så varmt välkommen.

Hon beskriver ett fantastiskt landskap med vackra sjöar överallt. Ett varierande klimat som ger gnistrande snö på vintern och härliga somrar.

Och så det här med att vi skulle vara så vackra. För det är Sverige som Zhang Lei beskriver. Sverige, och vi som bor här. Även om man i detta Jante-land inte helt känner igen sig i denna fantastiska skildring, så är det svårt att inte bli glad av Leis entusiastiska ord.

Man kan bara konstatera att både Sverige och framförallt VESP, förutom en ambitiös och kunnig gästforskare, också verkar ha fått en god ambassadör!

KCEM (能源和材料知识中心) 是一个网络中心和一个联系公司、大学、能源与材料系统的主管部门和所有人员的会议中心, KCEM 将协助 VESP 成为一个独立的系统, 而 KCEM 也将会成为合作网络的一部分。 KCEM 有大量的成功经验, 管理项目和国际合作机会, 它将给予巨大的推动作用来帮助温奥克的发展。

Ett utdrag ur Zhang Leis originaltext på kinesiska. Den första raden inleds med orden: KCEM (kompetenscentrum för energetiska material) är ett nätverk och ett mötescentrum för företag....

KCEM Nyhetsbrev

Kompetens Centrum Energetiska Material

Årgång 8 Nummer 3

Oktober 2009



Utbildning
Innovation



Forskning

VESP - ett varumärke som behöver laddas med rätt krut

Hur ser framtiden ut för VESP, Vingåkers Energetic Science Park? Vilka värden bör varumärket laddas med för att VESP ska nå ut och kunna säljas in? Det brände till under slutdiskussionerna på VESPs senaste projektmöte i Vingåker!

Projektledare Hans Wallin inledde projektmötet med en historisk tillbakablick över Vingåkersverken.

Under 50-talet, i efterkrigstidens Sverige, började planerna på en hemlig ammunitionsanläggning att ta form, frågan var bara var. I enlighet med den då rådande riksplaneringen bestämdes det att anläggningen skulle lokaliseras till Vingåker. Förutom en passande natur kunde en tyngre industri av det här slaget balansera upp den redan etablerad konfek-

tionsindustrin och skapa nya arbetstillfällen.

– Verksamheten på Vingåkersverken kom igång 1964. Två år tidigare hade Rachel Carsons bok "Tyst vår" kommit ut, som ju fick en enorm genomslagskraft, berättar Hans.

Plötsligt började man inse att bristande kunskap och oförsiktighet med kemikalier faktiskt kunde förgifta naturen och i slutändan hota både oss själva och vår närmiljö. Naturen var inte den oändliga, okänsliga sopcontainer man hade föreställt sig! Till slut tystnade fåglarna... Med insikten började saker så småningom att förändras.

1970 kom ett förbud mot dumpning. Och på Vingåkersverken startade världens första industriella återvinningsanläggning för övertaliga explosiva varor.

Globalisering

På Stockholmskonferensen 1972 började man prata "global miljö". Utbildning och kunskap inom miljöområdet efterfrågades, så även inom explosivämnessektorn. På initiativ från industrin startade FEX 1980 – en utbildning för föreståndare inom explosivämnesbranschen - än idag den enda i sitt slag.

Efter Sovjetunionens kollaps 1989 uppdagades det alltmer alarmerande (forts sid 3)



Nya föreskrifter från MSB

MSB (Myndigheten för samhällsskydd och beredskap) har förslag till två nya föreskrifter; Identifiering och spårning av explosiva varor för civilt bruk samt Förvaring av explosiva varor.

Identifiering och spårning

Denna föreskrift är ett genomförande av EU direktivet 2008/43/EG. Bakgrunden till direktivet är bl.a. terrordåden i London och Madrid. Föreskriften innehåller långt gående

krav på märkning av explosiva varor för civilt bruk som omfattas av krav på CE-märkning. Således är t.ex. explosiva varor som skall levereras till Försvarsmakten men även handvapenammunition undantagna från kravet på märkning.

Kraven på märkning omfattar varje individuell explosiv vara t.ex. patroner eller säckar med sprängämne och varje enskild sprängkapsel. Dessutom ställs krav på att importe-

(forts sid 5)

OBS! KCEMs
årskonferens
10-11 mars
2010

Läs om nya
Enheter för farliga ämnen
på MSB
sid 5



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Excert - en inventering av kompetensutveckling

I slutet av april beviljades KCEM medel av ESF-rådet från den Europeiska socialfonden för att genomföra en förstudie om kompetensutvecklingsbehovet inom den energetiska sektorn i Östra Mellansverige (Uppsala län, Västmanlands län, Örebro län, Södermanlands län och Östergötlands län). Avgränsningen till Östra Mellansverige beror bl.a. på den regionala indelning ESF-rådet gjort av Sverige men den beror också på att tyngdpunkten av svensk explosivämnesindustri finns i denna region.

Syftet med kompetensutvecklingen är att stärka individens

- yrkeskunskap
- språklig förmåga
- förmåga att använda IT samt
- beredskap för förändring

Vår studie har fokuserat på de specialistkunskaper som behövs inom det explosiva området.

Förstudien visar att ett stort kompetensutvecklingsbehov i form av kurser finns. Totalt har 49 olika kurser identifierats. Många av kursaktiviteterna riktar sig till

personer med låg formell kompetens. Genomgången omfattar ca 2500 personer i den energetiska sektorn. Förstudien skall ligga till grund för en ansökan om genomförande.

Ansökan skall vara inlämnad senast den 15 oktober till ESF-rådet. Om allt faller väl ut får KCEM i början av nästa år ett positivt besked om att genomföra kompetensutvecklingen.



EUROPEISKA UNIONEN
Europeiska socialfonden

VESP - ett varumärke...

(forts från sid 1)

problemet med överbliven ammunition ute i markerna, både i forna Sovjet och ute i Europa

Under början av 90-talet spreds Internet, något som ytterligare spädde på den ökade globaliseringen.

På Vingåkersverken fortsatte uppbyggnaden av ny kunskap och nya kontaktnät inom destruering och återvinning av explosiva ämnen, både inom och utom Norden.

VESP beviljas

År 2008 beviljade NUTEK stöd till VESP. Projektets huvudsakliga uppgift är att bygga upp ett utvecklings- och forskningscentrum i Vingåkers kommun, där Vingåkersverkens erfarenheter från explosivämnen kan tas tillvara.

www.vesp.se

En viktig del av VESP är att marknadsföra och kommunicera ut själva projektet, något som Lei Zeng kunde berätta mera om.



Lei, som har presenterats närmare i tidigare Nyhetsbrev, redogjorde för sitt arbete med VESPs hemsida och logotyp. Hon betonade vikten av internationellt samarbete samtidigt som VESP står för något helt unikt. Resultatet av Leis arbete kan man se på www.vesp.se, VESP:s hemsida som Lei avser att kontinuerligt optimera under sin resterande tid här i Sverige.

Vingåkersverken idag

Ola Pikner från Vingåkersverken (NAMMO), berättade om dagens företag, vars nyttillverkning helt upphörde redan 1993.

Idag är det återvinning av gammal ammunition som gäller. Hela 96 % av inkommande material återvinns, varav 50-60 % kommer från Sverige.

- Det är naturligtvis extremt viktigt att behandlingen av kontaminerade material sker på ett professionellt och noggrant sätt, betonar Ola. Inget material får gå till smältverk med minsta explosivämnesrester!

- Av återvunnet energetiskt material går det mesta till civila ändamål i USA, berättar Ola vidare. Liksom tidigare talare, betonar han vikten av samarbete inom branschen, inte minst för att utveckla nya teknologier och bygga upp långsiktig kompetens.

Att inte göra någonting

- Det är alltid skönast att inte göra någonting, utbrister Dan Loyd från Linköpings universitet provocerande.

Ett bristande underhåll, på t ex hus, märks först efter några år. Men det är inte hus som det handlar om här, utan kompetensutveckling inom explosivämnen.

- 1989 fanns det ca 20 000 anställda inom branschen framförallt på FFV och Bofors, berättar Loyd. Idag finns det runt 4 000, uppdelade på många små företag, inget stort nog att kunna axla nödvändig utbildning och kompetensutveckling.

- Det positiva är att branschen finns i ett relativt avgränsat geografiskt band, vil-



ket borde kunna underlätta samarbete, tror han dock. Men för att täcka in allt från basutbildning till spetskompetens krävs både KY, eller motsvarande, och studier på högskola/universitet.



Bo Janson gav oss en kort redogörelse för Safety Science Lab på Mälardalens högskola. Från Emma Nehrenheim fick vi sedan en uppdaterad inblick i projekten BIO-REX och Clean

Export, projekt som följs kontinuerligt här i Nyhetsbrevet.

Efter ett mustigt smakprov på vad en entreprenör kan åstadkomma med bra idéer och bra produkter (Jack Gustavsson, Cesium AB) var det dags för en gemensam diskussion där dagens kanske viktigaste frågor fick deltagarna att tända till:

- Vad ska vi fokusera på under återstående projektid?
 - Hur marknadsför vi VESP så att det också finns ett "sedan"?
 - Ska mer krut läggas på att betona det som ett miljöprojekt?
 - Och om alla är överens om att det krävs kompetensutveckling inom sektorn, vem är då denna "någon" som ska driva detta vidare?
- Frågor som det finns anledning att återkomma till.

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I would like to say thank you to Hans wallin, Bertil Juhlin, Professor Bo S.G. Janzon and Matthew Gourley for their help with my work and paper.