

The Academic Library as an «One Stop Shop» Information Provider for the Small and Medium sized Enterprises

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The Academic Library as an «One Stop Shop»

Information Provider for the Small and Medium sized Enterprises

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Summary

Small and medium-sized enterprises (SMEs) constitute 99% of industries on a world basis.

SMEs have global attention from local and national governments, from international organisations and SMEs are important to national economies.

Information management (IM) in SMEs is executed differently than in larger enterprises that can hire professional and trained IM staff. SMEs must handle information and knowledge needs with limited personnel and limited information technology (IT) resources.

Only the fewest of small businesses have the opportunity for themselves to develop all the knowledge needed to stay competitive in an increasingly demanding world market. This concerns knowledge of all kinds, from technology to the market to global business conditions. At the same time, the flow of information that all businesses and administrators have to keep track of and apply to their activity is increasing in scope and speed.

Norwegian enterprises appreciate too little the importance of quick access to knowledge and information, and the ability to apply it in their own business. Nor do authorities, corporate advisers and sources of finance have any major expertise and experience using computer-based information from national and international sources. The reasons for this situation are many, and several types of measures must be implemented to develop the market for those services. We think the situation is much the same in other regions and countries of Europe.

The array of electronic information, on-line through Internet as well as on disk and CD-ROM, has increased substantially in recent years. However, the demand is still weak and limited to niches with high requirements for quick and precise access to information, such as foreign-exchange and the stock market. Besides this lack of awareness of the benefits of quick access to information, demand is also restricted by the fact that the offerings are little known. The user interfaces are poor, and prices are often high and structured so as to discourage learning by trial and error. It's also hard to get advice on how to search databases, or help to interpret the results based on the user's needs in order to put the information in the right context for the individual enterprise.

To help improve the relations between users in enterprises and know how in the applied academic organisations including the academic library resources, we wish to establish a «market and meeting place» for these actors. The user-interface will be a combination of an artificial Internet searching machine and a telephone operated SME help-desk. The paper gives a short description of a Norwegian model, and experiences from a pilot test.

1. Examples of «one stop entries» or «one stop shops» in the «www-world», an introduction

The development of IT through the last decades has given Information Management (IM) a new dimension. The possibilities of applied IM has exploded with the open world wide Internet distribution systems - lately supplied with the Intranet concept.

Examples of organised use of this technology and philosophy are given in the following.

Biology: Selected Gateway World Wide Web Sites
<http://www.library.wisc.edu/guides/Biology/wwwsite.htm>

This is a listing of a few major gateway WWW sites. These gateways are extensive value added, categorized collections of WWW sites.

http://www.ghsl.nwu.edu/cic/cic_overview.html

The health science librarians of the CIC schools will work cooperatively to develop

an interface (CIC HealthWeb) which will provide organized access to evaluated non-commercial, health-related, Internet-accessible resources. The resources will include those currently available as well as new resources developed in collaboration with other organizations. The interface will integrate educational information so the user has a one-stop entry point to learn skills and use material relevant to their discipline.

<http://www.knowledge-basket.co.nz/kete/publisher.html>

Our weekly page "hits" count is now well over a thousand. The majority of our visitors are paying customers who use the services we host. Each new service brings more users to all the publishers on The Knowledge Basket.

<http://www.bre.co.uk/~itra/ikb/ikbforum.htm>

Below are links to a number of discussion topics concerning the Industry Knowledge Base. By clicking on the link you will be able to view the discussion so far and will have the option to add your own views on the subject via a fill-out form.

1. Acceptability of electronic information provision; views on the delivery mechanism, media etc; need for human contact; how to promote an IKB.
2. User interface issues - one or many, targeted to different end user groups?
3. Copyright, security, role of current arrangements where information is supplied through membership arrangements.
4. Experience in other countries, in other industries.
5. Views of single entry point Gateway idea in principle - key advantages, disadvantages.
6. What functionalities would you want most from CIG? e.g. one stop shop, common look and feel, unified security and charging system...
7. How should it be managed - what are the key requirements?

NWI

at

http://nwi.bibsys.no/nwi_info_uk.html
(This site is currently out-of-order)

Information about NWI

The Nordic Web Index (NWI) project is a collaborative effort across the Nordic countries, providing a free Web search service to the general public in the Nordic countries. We are today providing access to databases covering the WWW in four of the Nordic countries, and as of January 1997 through three service points (see above). Because of the "public service" nature of NWI and its architecture building on open standards, we are able to collaborate with other initiatives, be it public sector or commercial ones. NWI builds upon the idea of decentralization of harvesting, indexing as well as of the service points. The advantage is that it reduces network load and keeps a more up to date index of pages.

Related to the history, tradition and philosophy of the **library** and the **library services**, the gap between this «new» www-based complex information service on Internet and the «old» library is small. It is relevant to ask - who came first. Do we need a new definition of the **library** - to make a good strategic position on the coming global battle field of modern value added information services where the old and new actors will meet?

Entry Word: library

Text: a place in which literary, musical, artistic, or reference materials (as books and films) are kept for use but not for sale.

2. Small and medium sized enterprises (SMEs) and their use of information sources

Small and medium-sized enterprises (SMEs) constitute 99% of industries on a world basis.

EU definition of SMEs:

- Small Enterprises have less than 50 employees and a balance less than 7 mill ECU
- Medium-sized Enterprises have between 50 to 250 employees and a balance up to 40 mill ECU.
- Very Small Enterprises have less than 10 employees.

SMEs have global attention from local and national governments, and from international organisations. And SMEs are important to national economies.

Information management (IM) in SMEs is executed differently than in larger enterprises that can hire professional and trained IM staff. SMEs must handle information and knowledge needs with limited personnel and limited information technology (IT) resources.

Only the fewest of small businesses have the opportunity for themselves to develop all the knowledge needed to stay competitive in an increasingly demanding world market. This concerns knowledge of all kinds, from technology to the market to global business conditions. At the same time, the flow of information that all businesses and administrators have to keep track of and apply to their activity is increasing in scope and speed.

2.1 Market situation and prospects

The Bangmann report ([Bangmann](#)) do focus on the interaction between the hardware and the software, including socio-political feasibility of Information Technology.

The small and medium-sized enterprises must take a major part of the future growth of the labour market.

The access of academics in labour market is improving - also to the benefit of SMEs.

This situation will give SMEs the possibility to strengthen the competence profile of the enterprise by recruiting people with qualified and relevant academic knowledge.

The increase of knowledge in SMEs will give more innovative and R&D-driven organisations and the need of access to qualified external expert support.

A Norwegian survey ([Skaug](#)) give these main indicators for information needs of access to expertise:

- Start-up information (starting up a business or locating abroad)
- Purchasing and price negotiations
- Sales (distribution network, the market, framework conditions)
- Customer contact (bidding, price negotiations, credit assessment)
- Manufacture (materials management, technology, quality, management, finance)

- Product development
- Transport and communication
- Finance (accounts, invoicing, payment administration, financing, price/profitability)
- Recruitment (employment, working conditions, employment termination)
- Competence training
- Strategy work
- Environment (working environment, pollution)
- Policy

3. KNOWLEDGE NETWORK - an IT-based ORACULAR expert skill service for SMEs

Norwegian enterprises appreciate too little the importance of quick access to knowledge and information, and the ability to apply it in their own business. Nor do authorities, corporate advisers and sources of finance have any major expertise and experience using computer-based information from national and international sources. The reasons for this situation are many, and several types of measures must be implemented to develop the market for those services. We think the situation is much the same in other regions and countries of Europe ([EXPUN](#) , [WOLF](#)).

The array of electronic information, on-line through Internet as well as on disk and CD-ROM, has increased substantially in recent years, but demand is still weak and limited to niches with high requirements for quick and precise access to information, such as foreign-exchange and the stock market. Besides this lack of awareness of the benefits of quick access to information, demand is also restricted by the fact that the offerings are little known, user interfaces are poor, and prices are often high and structured so as to discourage learning by trial and error. It's also hard to get advice on how to search databases, or help to interpret the results based on the user's needs in order to put the information in the right context for the individual enterprise.

To help improve the relations between users in enterprises and know how in the applied academic organisations including the academic library resources, we wish to establish a «market and meeting place» for these actors. The user-interface will be a combination of an artificial Internet searching machine and a telephone operated SME help-desk. The «market place» we have called KNOWLEDGE NETWORK - an IT-based ORACULAR expert skill service for SMEs.

This area should be a challenge for the library sector with their competence on information science. They can be a manager of the technical infrastructure, but also a disseminator of know how and skill, and by that give value and new relations to library services.

KNOWLEDGE NETWORK is based on experiences from several Norwegian governmental agencies over the last 15 years in transferring information, knowledge and technology to small and medium sized enterprises (SMEs), and an ongoing Norwegian pilot project under development in 1997.

The objective of KNOWLEDGE NETWORK is to help strengthen the solidity of SMEs and to increase the SMEs applied use of competence in universities, colleges and R&D. A solid enterprise is a security for the local community and the citizen living there. The possibility to develop a solid enterprise depend on an interaction between the enterprise and the external (local, regional, national and international) bidders of information, technology and know how.

KNOWLEDGE NETWORK shall act as a bridge between users needs and this know how.

The academic libraries have a traditional culture as being a server of library services for the internal mother organisation. They do not have the same position and professional strategy as a server of value added services to the external community.

The idea of KNOWLEDGE NETWORK is to bring a new dimension to the service of library systems, where competence within organisations and related to the individual expert, will be visualised together with the other library services. The individual university libraries are already linked together in interlibrary networks. The service of KNOWLEDGE NETWORK will then be a part of a complex offer of value added professional knowledge services as a «one-stop-shop» concept for SMEs.

It is of importance that these services are introduced as professional service - accessible not for free, but as a pay-service - and by that increase the commercial potentials of information services.

3.1 Knowledge of sector and technologies to be used

Small businesses are a heterogeneous group. Their information needs are typically bipartite:

1. Acute needs relating to specific problems which must be solved quickly.
2. Continuous or long-term needs. Often, the business needs help specify its long term need for knowledge and information relating to various functions.

The businesses usually have one, or a small number of, trend-setting persons who characterise the way information is used and prioritised in the decision-making process. Many prefer oral conveyance (telephone, meetings), feeling that written documentation (including electronic) is cumbersome and unnecessary. Generally, electronic media are little used; mostly these people will call personal contacts in public agencies or other companies. The cellular

phone and fax are today the small business's most important tool for communication and information gathering. The use of databases with a PC and modem is not widespread, neither the use of Internet.

The following criteria are considered crucial for an information service aimed at small businesses to reach its customers. The service must:

- Give only the desired information
- Give easy-to-understand, concrete and practical answers and advice
- Give answers quickly
- Be easy to use
- Be readily available
- Use local contact persons
- Use familiar, reliable and respected sources and channels
- Use only well-known technology
- Be stable
- Have a price level and price structure suited to small businesses' capacity to pay and to their concept of cost/benefit.

Internet is considered attractive, but still with very few users among the SMEs. A major advantage of Internet is the possibility of personal interaction, but the beneficial value of the available information is often low.

Networked information systems are however experiencing a tremendous growth in terms of users and traffic as well as publicity. The dominating application, the Internet-based World Wide Web (WWW), is still dominated by free-of-charge information systems, but this is expected to change dramatically in the near future. WWW will be used for all sorts of electronic commerce and trade. The same development can be expected for the IBC networks and "Information Highways."

There are numerous projects and services that aim at electronic commerce via Internet. Many are US-based. Most of them aim at closed solutions and concentrate on electronic payments only. None of them aims at the complete electronic marketplace. None of them provides a coherent model or architecture. Moreover, not even the non-technical and security requirements on such an electronic marketplace are understood completely.

In order to disseminate results and to co-ordinate with related efforts, a European initiative, SEMPER has established an SIG on Secure Electronic Commerce.

These ideas will be implemented in KNOWLEDGE NETWORK during the project.

- **3.2 Technical aspects of the Demonstrator**

The objectives of the demonstrator are:

- KNOWLEDGE NETWORK shall give easy access to a very qualified expert skill - as a «first help» to questions (needs) with a degree of difficulty, which if directed to a more «common» service - would take a lot of time and involve several people or resources
- KNOWLEDGE NETWORK shall incite the development of «local» skill databases in academic and R&D organisations as a tool to visualise the skill resources within the organisation as a possible service for SMEs and other external users in the region
- the first line experts will be recruited from this «second line sources» on special conditions as a service of very short stand-by time
- the local databases will be linked together in a cluster (meta-database)

It will be necessary to modify/upgrade the existing solutions with regard to:

- The database (expert base) for the registration and updating of competence profiles with classification and indexing systems, including contact data. The system can be improved by moving the registration and upkeep of expert/professional profiles to a local/Intranet interface, enabling each expert to register/update his own profile. Quality assurance routines are a must.
- The IT infrastructure for the administration of the mediation of contacts, the follow-up on this on this, and logging for the purpose of subsequent evaluation.
- Supplementing the expert base by developing an intelligent user interface available on the Internet and linked at the national or regional level to existing library/information systems. This could as an example in Norway, be the national academic library system BIBSYS or some other service of the "ONE STOP SHOP" type.

3.3 Results

So far we have established a IT infrastructure, based on a knowledge database consisting of 80 very qualified experts. The service of KNOWLEDGE NETWORK is available through the SME business service called «NARVIK-TELEFONENE», a free telephone help desk for SMEs.

This SME service will be upgraded with a supplying Internet server called [BEDUIN](#), business information on Internet, a high quality

information service with some free and some pay service. KNOWLEDGE NETWORK will be a part of this «one stop entry» service - but we plan for a huge national expert skill service as a value service - also accessible through for example BIBSYS.

During the nineties there have been a focus on the lack of applied use in private sector of the results from and know-how in Academic institutions. Recently there has been going on a work to establish a «Code of Good Practice» on information from research and technology development and competence/know-how within the Community. We hope that KNOWLEDGE NETWORK shall play an important role in the ongoing work to develop an European standard for management of R&D information, included know-how and expert skill.

Figure 1 - 5 describes the principal function of the network KNOWLEDGE NETWORK.

4. References and related projects

Bangmann, Martin, et al (1994): *Europe and the global information society : recommendations to the European Council*. Brussels : European Community.

BEDUIN - project proposal for a WWW-based Internet Server as a «One-Stop-Shop» service (National Norwegian Proposal) (1997).

EXPUN - Telematics/Telework research project funded by DG XIII (1994-95)

Skaug, Erik (1995): *Computer-based information network for small businesses, Pilot project 1994-95*. Oslo, NHO.

WOLF - Telematics/Telework research project funded by DG XIII (1996-97)