REPORT:

DANTERM as a provider of IT solutions to the communication and knowledge handling needs of Danish companies

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As a result of Danish society's transition from an industrial to a knowledge society, new demands arise for quality assurance and efficiency of technical communication, clarification of technical concepts in connection with such things as project management, knowledge organisation and knowledge handling, as well as the automatic handling of large quantities of information, for example when searching for information on the Internet.

DANTERM – the Danish Centre for Terminology is one of the few centres that combines competence in terminology and the terminological working method, knowledge organisation and data structuring, plus the development of terminology-related IT applications, especially term bases. The centre's knowledge of terminology, as well as clarification and systematisation of technical concepts, is indispensable when developing other IT systems, such as systems for searching, storage and exchange of information. By this we mean, for example, systems for digital document handling, e-commerce and electronic health care records. The unambiguous determination and systematic description of concepts within such a system's field of operation is an important precondition for the successful development of the system and for usable results.

It is precisely this expertise that lays the foundations for DANTERM's ability – independently and in collaboration with technological service organisations and consultancy firms – to contribute to the solution of business-related tasks that are also necessary for society at large by:

- promoting quality assurance and the efficiency of technical communication
- developing IT systems for searching and exchange of information

and in this way

- contributing to the development of competence and the international competitiveness of Danish companies
- playing an important part in the innovation of Danish research and development activities in terminology and knowledge handling
- building bridges between Danish research organisations and Danish business

DANTERM is a commercial foundation, which was set up by the Danish Terminology Group, based on the development and research work that has been taking place for many years in the Department of Terminology and the Department of Computational Linguistics at the Copenhagen Business School. DANTERM works closely with the Copenhagen Business School. The centre's board is composed of representatives from institutions and organisations that have a particular interest in the work that the centre carries out. These include The Confederation of Danish Industries, The Danish Board of Trade, The Danish Bankers' Association and the Danish standards institute (Dansk Standard).

In 1998, DANTERM came in as the administrator of a so-called "centre contract project" with the title: "Development of methods and tools for the creation and operation of companies' internal term banks". Within the framework of this project, DANTERM has built up a number of areas of competence, which can contribute to the promotion of Danish companies' innovation and international competitiveness.

It has been crucial for DANTERM's role in building up and disseminating knowledge, which characterises the centre contract project, that the centre is very closely linked to the Department of Computational Linguistics at the Copenhagen Business School, which is one of Denmark's leading institutes for research into the formalisation of technical language for the purposes of data processing.

DANTERM has a crucial role in building bridges between research institutions and business. The collaboration has given the companies that take part in the centre contract, access to the most recent research, and at the same time, the collaboration has contributed to innovation in research and teaching.

The centre's staff have a solid background in the management of language

technology projects, and they follow developments in these areas. A close collaboration with the leading research institutions in Denmark, and strong ties to most European terminology centres gives direct access to the newest developments in the field.

Quality assurance in technical communication

Standardisation and quality assurance are unavoidable demands when it comes to a company's products. Corresponding demands hold for a company's technical communication, that is to say that the company must set down standards and allocate resources to quality assurance of all types of texts, if the company is to be able to compete effectively with other national and international companies. It can cost an individual company – and society as a whole – considerable sums of money when technical messages are not understood or, even worse, are misunderstood.

This means that all the company's texts, such as manuals and brochures – in Danish as well as foreign languages – must be framed in clear and correct language that is consistent in its use of technical expressions. A precondition for achieving this is that the company's staff – subject field experts as well as translators – have knowledge of, and access to, the relevant **IT tools and methods**.

Clarification of technical concepts

One of the most important factors in technical communication is the common understanding and use of terms, including technical concepts. It is therefore important to clarify the content and delimitation of technical concepts, and to register this in a systematic way, in order to enable quick retrieval. This can be achieved by using **IT applications** to handle language and knowledge, for example **terminology and knowledge bases**, which build on such things as well-defined and well-described concept apparatuses, for example concept systems, ontologies and domain models.

Concept systems, which are used when elaborating terminology and putting it into a term base, give a systematic overview of the concepts and terms within a particular subject field. Concept systems show the relations between technical concepts, which can be determined by analysing the characteristics of the concepts (concept contents), and they are used, among other things, to help devise definitions and determine the equivalence of concepts in two languages. Most often, there are super-/subordination relations, where subordinate concepts are subtypes of a superordinate concept, but concept systems can also contain other relations, for example partitive, temporal and causal relations.

In connection with methods for the organisation and handling of knowledge – **knowledge management** – one refers to systematic descriptions of concepts within specific subject fields such as **ontologies** or **domain models**. These are based on broadly the same principles as concept systems, and are likewise a way of bringing order to the concepts in a subject field, and of ensuring unambiguous communication.

One of the most important language technology tools one can use when producing and translating texts is **term bases**. A term base can be used to store a company's terminology electronically, so that staff have easy access to the company's technical language, including Danish and foreign language terms, grammatical information about the terms, text examples, definitions and relations between the technical concepts that the terms express. Term bases can, for example, be made available on a company's intranet. A company's term base can indicate which term, out of a number of synonyms, is the preferred term to use in this company's texts. This is a way of achieving consistency in both Danish and foreign language texts.

However, term bases are not just useful tools for translators, but for all the employees in a company who produce texts about the company's products, or who need to understand a text in a foreign language.

Knowledge organisation and knowledge handling: key concepts in the use of IT applications for information storage and retrieval

The use of many types of IT applications for information storage and retrieval demands the unambiguous definition of concepts. It is, of course, helpful if the various IT systems also use the same designations for the concepts, but the most important thing is the determination of the concepts' technical content.

Automatic handling of large quantities of information

Systematic definitions of concepts within a specific subject field are also essential for the automatic handling of large quantities of information, for example when searching for information in an information database, or when searching for relevant information on the Internet.

Basic concepts in connection with project management applications

When carrying out large projects, such as building hospitals, bridges (the Øresund and Great Belt bridges) and metro systems, there is a great need for efficient applications for project management. Such applications must be based on a number of well-defined concepts, since communication between

the various parties (the owner of the building, the building contractor, the suppliers etc.) would otherwise be impeded.

DANTERM's areas of competence: terminology and knowledge organisation – methods and IT applications

DANTERM's competence lies in areas such as those mentioned below, which fall into two main categories.

The first category concerns methods that are absolutely crucial when constructing language technology and other IT applications:

- characteristics of different languages
- terminological working method
- concept modelling and concept definitions
- classification and thesauri
- knowledge organisation and knowledge modelling
- data analysis and data structuring

The second category concerns the development of IT applications, both language technology and other applications:

- development of language technology tools and terminology-related IT systems, especially terminology and knowledge bases
- development of other IT systems for information storage and retrieval
- development of target group-oriented user interfaces

Consultancy, advice and courses

DANTERM offers help with creating term bases, and with integrating them with language technology tools such as electronic dictionaries, machine-assisted translation (including translation memory systems) and spelling and grammar checkers. Moreover, DANTERM helps companies to devise language policies and to lay down strategies for the use of term bases integrated with other language technology tools.

In the early summer of 2001, DANTERM plan to launch a subscription scheme where, for a fixed annual charge, companies can receive information and services from DANTERM. The services will include an annual report and newsletters, plus discounts on courses and other events, as well as consultancy to assist in integrating linguistic information technology in the company.

DANTERM arranges a number of courses on the following subjects: creation and use of term bases, use of various aids such as dictionaries, term bases and texts on the Internet, and systems with a translation memory.

Furthermore, DANTERM presents papers at conferences and seminars. In January 2001, DANTERM held two seminars on quality in language production, which were attended by a large number of important Danish companies.

Participation in national and international networks

DANTERM has participated in two projects under the EU's MLIS (Multilingual Information Society) programme. **TDCnet** (European Terminology Documentation Centre Network) and **NORDTERM-Net**. DANTERM has also produced Danish **terminology on the subject of the environment** for the EU's EURODICAUTOM term bank.

In collaboration with Danish and foreign institutions and companies, DANTERM has contributed to a number of proposals and applications, including some to the EU's framework programmes, for example a knowledge base for the health sector, a Nordic concept network with a view to intelligent information retrieval, machine translation, ontologies for use when browsing (e.g. in connection with e-commerce) and a system for editing dictionaries.

DANTERM has taken the initiative for a collaboration with the Danish Language Council (Dansk Sprognævn) and a number of companies, institutions and associations, with a view to devising proposals for **Danish IT terminology**. The project, whose background includes the Danish Culture Minister's initiative for a Danish language policy, started in the spring of 2000. DANTERM will construct and administer a database, which will be available to all Danish citizens via the Internet.

DANTERM participates in Danish and international standardisation concerning the content and structural description of lexical data collections, medical information science, and terminology and computer-assisted terminology work.

DANTERM's interaction with Danish business

With its technical background, its close contact with leading research environments and the experience it has acquired building bridges between research institutions and business, DANTERM has the best qualifications to

play an important part as adviser and sparring partner for Danish companies, including smaller companies.

With its special competence, DANTERM will be able to contribute to the continuing increase in quality development and quality assurance.

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In next number of LSP and Professional Communication:

A report from one of DANTERM's collaborative partners: Nordea

ABSTRACT

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