eContent

Proposal acronym: KOM2002
Project Number: 22071Y2C2DMAL2

Groupware for Distributed Content Production

Annex I
Description Of Work

Abstract

Demonstrate, in a practical experiment, the use of tools for distributed, multilingual content production, which have been developed by partner 1 in a previous EU-funded project. Central properties of these tools are:

Every object in the data base can exists in multiple versions in different languages. There can even be more than one version in each language. For example, a new object may first be machine-translated to different target languages, and the machine-translations may later be replaced by human translations.

Every object for publication will have, associated with it, a forum. In this forum, the designers in different countries can discuss the object, suggest changes, supply revised versions, etc. Also the contributions to these forums will be multi-lingual in the same way as the object for publication.

These facilities will be demonstrated in a user group of psychiatrists and psychotherapists, who will use the system to develop health information in the mental health area.

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Project Overview

Objectives (maximum 1000 characters)

KOM2002 will demonstrate that forum-based multi-lingual content development tools are effective in the production of multi-lingual content by a group of of experts. This will be demonstrated by full-scale development of a set of health informational web sites in the mental health area, targeting life-style problems, obesity and over-weight, eating disorders, post-traumatic stress syndrome (PTSS), workplace problems, child guidance, sexual problems and attention-deficit hyperaktivity disorder.(ADHD)

Description of the work (maximum 2000 characters)

- KOM2002 will achieve its objectives by providing the following services:

- A selection of medical doctors, psychiatrists and psychotherapists from five different European countries will use the KOM2002 tools to jointly develop a set of many hundreds of carefully classified web pages with answers to specific questions, and professional translation of these pages into German, English, French, Italian and Swedish. Document format will be based on XML, RDF and Dublin Core to enable the same text to be presented in multiple formats to different users such as PDA users and users with disabilities.

- Quality assurance according to Health On the Net (HON) principles.

- Logging of success rates and user satisfaction, and using these logs to continuously stepwise refine the content and its classification.

- Setting up a subject tree, a natural-language question-answering system and a conventional search engine for finding the informational pages.

- Provision of on-line forums and chats with news control and e-mail notification facilities. People with problems, their relatives and friends can participate pseudonymously. It will still be possible to send personal messages to such users, without knowing their names.

- Demonstrate the use of machine and manual translations of forums between major European languages, so that each person can read messages in their preferred language – users will always be able to see the text in any available language.

- Provisions of ask-the-expert areas where anonymous questions are published together with the answers from a psychotherapeutic expert. Also in these areas, translations of questions and answers to multiple languages will be provided.

- Testing and evaluation of the quality and usefulness of the development tools and user services.

- Develop a strategy and exploitation plan for successful continuation after the end of the EU-funded phase of the project...

Milestones and expected results (maximum 500 characters)

Major milestones:

Month 1: Start of information exchange in the KOM2002 system.

Month 6: Content plan.

Month 12: Start of public service.

Month 24: Evaluation and start of non-EU-funded phase.

Expected results:

a.   Demonstrate that the KOM2002 development tools work well for the development of expert information by experts in multiple countries and languages.

b.   At least tens of thousands of European citizens will be helped by the mental health information developed to attain a higher quality of life.

1   Rationale and Objectives

Project Goals

Co-operation Goals

Community goals: More and better co-operation between people in different European countries. See section "European Level Advantages" on page 46

Derived functional goals: Experts in different countries and using different languages should be able to jointly develop information pages with a higher quality than each of them can do alone. Consequence:

Derived technical goals: To be able to do this, the experts need support of a software system which allows them to develop and discuss each informational page in a shared discussion area see page 20ff.

Reaching these goals: The technical partners will support the medical partners with groupware and content production tools in WP1, WP2, WP3, WP4 and WP7.

Health Goals

Community goals: Improve the health of European citizens. See section on page "Social Perspectives, Quality of Life and Effects on Productivity and Competitiveness of Europe, Effect on Employment" on page 50.

Derived functional goals:. Helping many visitors to our web site with mental health advice which will enable them to improve their own life.

Derived scientific goals: Produce a high-quality mental health website in Dutch, English, German, Italian, Swedish.

Reaching these goals: Content will be produced by the medical partners in WP1, WP2, WP3 and WP4 and will be evaluated in WP7.

Quality Goals

Community goals: High quality medical information.

Derived scientific goals: See section "Medical Quality" on page 14.

Reaching these goals: All informational pages will be sourced and peer reviewed by medical partners in different countries.

Selected Expert Area

Health information sites are among the most popular parts of the Internet. This is not surprising, since health is so important to our well-being. In the health area, mental ill-health is an important cause of unfitness and unhappiness. Mental ill-health is also a major cause of loss of production in European countries costing 70 000 000 000 Euro/year. According to one of the largest Swedish insurance companies [1], 20 % of absence from work because of illness was caused by mental problems in the year 2000, an increase from 9 % in 1995. However, there are not many web sites oriented towards mental health combined with psychological/psychotherapeutic advice and help.

Psychological advice and counselling is a wide area which covers loneliness, melancholy, jealousy, marital problems, alcohol and drug dependence, bulimia, etc. All of this may be just a part of everyday life, or may be serious mental illnesses, or anything in-between. Even less serious problems are often a cause of misery and lack of capacity for productive work.

Psychology/psychotherapy is also closely related to physical well-being, since many people know how they should live healthier (food, weight, exercise, etc.) but are not able to adjust their life to this knowledge. There are many web sites about how you can live healthier, but not so many sites on how you can make yourself change your life-style in accordance with this knowledge. Obesity and unhealthy life styles costs more than 30 000 000 000 Euro/year in loss of production in EU member countries [2].

KOM2002 is not mainly oriented towards the very serious illnesses which may require hospitalisation. KOM2002 is targeted at the many people who are suffering in silence, who do not seek a doctor, psychiatrist, psychologist or psychotherapist, but who can be aided in achieving a better and more productive life by psychological advice.

[1]   SEB Trygg Liv, as reported in Dagens Nyheter, 8 Jan 2002, page C1.

[2]　　Economic Aspects on Obesity, by Kristina Narbro, Göteborg University, Göteborg, 2001.

Specially Targeted Areas

KOM2002 will at first mainly be oriented at the following categories of psychological/-psychotherapeutic advice:

a.　Eating disorders (Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, and people who do not meet all the diagnostic criteria for these disorders) and Obesity.

b.　Psychological obstacles to achieving healthy living habits, including healthy eating, exercise and achieving an healthy weight, stopping substance abuse (alcohol, tobacco, drugs, narcotics), etc.

c.　Psychological problems causing a lower quality of life through despair, inability to work, inability to handle life's problem in a suitable manner, marital problems and inter-personal relationship problems.

d.　People who have not sought help from a medical doctor or psychotherapist. For these people, KOM2002 may recommend them to seek professional help, when this is needed, and will in such cases help people overcome the fears which prevent this. Note that most people with psychological problems do not seek professional help, but may be helped by the advice which KOM2002 can give them online and by on-line psychotherapy.

Quantifiable Goals and Measuring Success

Many hundreds of informational pages will be developed. We hope that the experts involved will find that KOM2002 is a good and effective tools for joint coworking in the production of multi-lingual informational pages.

KOM2002 will produce psychological advice sites in all languages represented among the partners: English, German, Italian, Greek and Swedish. These sites will ultimately contain a minimum of many hundreds of carefully semantically classified advice pages which can be selectively delivered to each visitor depending on their particular problem. Our forums and ask-the-expert areas will offer new information hundreds of times a year. Our goal is to have at least tens of thousands of different visitors a month to our web services.

Recall and *precision* are traditional measures of success in information retrieval systems.

Recall R characterizes the system's ability to retrieve all the relevant items in the collection of documents (i.e., FAQs):

$$R_1 = \frac{\text{Number of relevant documents retrieved}}{\text{Total number of relevant documents in the collection}}$$

Precision P characterizes the system's ability to retrieve only relevant items:

$$P = \frac{\text{Number of relevant documents retrieved}}{\text{Total number of documents retrieved}}$$

In a psychological question-answering system, many stored answers will contain variants of the same information, but users only want only one or two highly relevant answers. Thus, to make a reasonable measure of recall on our system, it must be adjusted to:

$$R_2 = \frac{\text{Amount of highly relevant information retrieved}}{\text{Total amount of highly relevant information in the data base}}$$

Neither of these measures will indicate the comprehensiveness of the information in the data base. If the data base has no good answer to a question, then recall and precision may both be zero divided by zero and thus undefined.

Systems like ours often get questions obviously outside its scope, such as "What time is it?" or "Where can I buy orchids in London?", but relevancy is not easy to define in a psychological data base. For example, is the question "Will I go to heaven when I die" relevant or not? And how can you measure the correctness of an answer to such a question?

We aim at getting more than 80 % recall (using the R_2 definition of recall) after sorting out questions not related to the subject area. Our

experience from previous use of the same technology indicates that such high recall values are achievable.

However, user satisfaction might be a more meaningful measure. We will measure this by letting each user rate the usefulness of the answer. Our aim is to achieve more than 90 % user satisfaction. Users will also be able to explain why they find a particular response unsatisfactory and to have their question forwarded to an expert for answering.

Unfortunately, experience shows that most users do not use a non-mandatory rating facility.

To avoid this problem, we will ask particular groups of users to use the system at a particular time with a promise that they will provide a rating on each answer they get.

Traditional medical methods of measuring success are the so-called double-blind tests with a user group and a control group, where the fitness of each group is measured afterwards. We will not in general apply this method, but we will use it on selected groups of users where fitness can easily be measured, such as weight in the area of obesity.

Measures of Success

Note: These numerical values are goals we hope to achieve and will try to achieve, but we cannot promise that we will 100 % be able to reach all of them.

Success criteria	Measure	Goal	How to achieve this.
User satisfaction.	User reported satisfaction with individual answers.	More than 90 % satisfied users, Better than 80 % recall.	Stepwise refinement as described in WP 4 and on page 8.
Amount of quality medical information produced.	Number of informational pages, each page peer-reviewed by at least one partner other than its author.	Several hundred pages in each supported language.	Medical partners develop informational pages in WP 1, 2 and 3.
A popular web site for people who need information om mental health.	Number of visitors.	More than 10000 visitors/month to our web sites.	A good quality web site which will attract visitors, web promotion as described on page 15

Stepwise Refinement
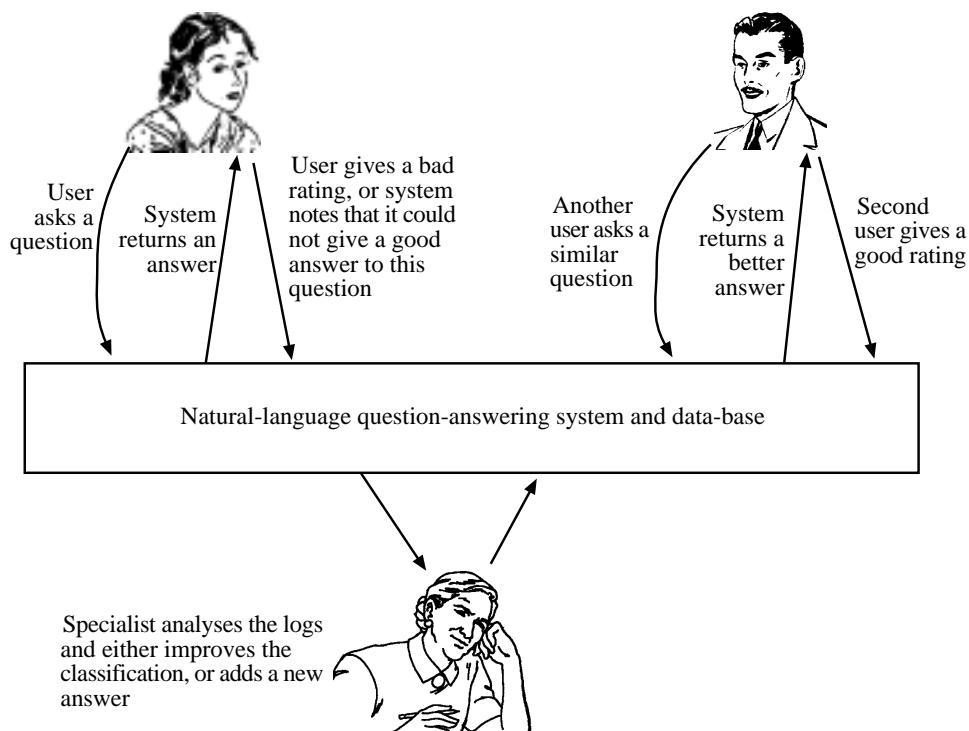
The user ratings will be very important to KOM2002. The main value of the user ratings is that they can help us increase the quality of the system. The system automatically logs both user ratings and observations of system and user behaviour which indicate quality problems, such as when no answer is found to a question or where the user spent very little time reading an answer. The facility to send a question to an expert, if the system does not find any answer, is also an indirect measure of the incompleteness of a system response.

The logs will be continuously checked by experts, and whenever a relevant question is not well answered, the experts will either add a new answer, or reclassify an existing answer, so that the next time a user asks a similar question, the answer will be good. This method of stepwise refinement is central to our approach and the main reason why we believe that we can ultimately achieve high user satisfaction. Previous experiments with similar systems show that people often say things like "It is fantastic how well the computer understands me" even though there is no real intelligence in the system – the

intelligence is in the people who write the answers and classify them. It is this intelligence, stored in the data base, which will make the system appear intelligent to its users.

Our aim is that more than 90 % of users will rate the answers as satisfactory and useful to them. This will be measured after sorting out obviously irrelevant queries like "What time is it?" or "Where can I buy orchids in London?".

Medical Quality

See section Medical Quality on page 14.

Examples of Informational Pages

To illustrate the kind of advice KOM2002 will provide here are two examples:

Question: What should I do when my young daughter refuses to eat?

Answer: A patient told a therapist that her two year old daughter refused to eat. The mother was desperate and afraid that her daughter would starve to death. Their relationship had become impossible; the mother lost all control and shook her daughter because of her refusal. The mother said that she prepared three good meals a day; breakfast, lunch and dinner, all without avail.

The answer from the therapist was: It may be that your daughter's hunger does not coincide with the family's mealtimes. I suggest that you put small attractive and nutritious plates of food in her room. Then take little notice and let her discover her hunger and eat when she wants to.

Don't continue a power struggle with her, because she will win and use her refusal as a weapon against you.

To eat or not to eat must be between her hunger and the food. She won't starve to death and as long as food is there she will eat when she wants to.

You needn't be perfect; just do your best. Good luck!

More about children.

Question: How can I change my behaviour?

Answer: If you want to solve your problems you must be active and this often involves changing your habits and ways of thinking. For example, you may want to reduce your weight, find a better job, complete a difficult task or change your relations to other people. These problems are difficult and extensive. To be successful, it might help to divide them into a number of smaller objectives. Begin with the one that comes first and then set new objectives. You do not have to make a list of all the objectives in advance.

Every objective must be clearly defined; e.g., if you want to reduce your weight, you begin by deciding to take more exercise, but this is not at all clearly defined. It would be better to state that you intend to walk or cycle for 30 minutes a day. Bear in mind that all objectives must be reasonable and possible, that is, they must lie within your capabilities. You might, for example, specify exercise for a minimum of 5 days a week. Do not give up if you cannot follow your plan for one day. Just try better the next day.

It is often easier to make small changes, one at a time, than large changes in your way of living. To completely change your eating habits may for example seem insurmountable. But if you take one step at a time, you will note, that you have eventually achieved much more than you first thought possible.

It is obvious that this approach can be applied to almost any change, which you want to make to your lifestyle.

2   Baseline and Results

State of the art

General Health Sites

There are many health sites on the Internet, but few directed at psychological advice. There are many sites which tell people what a healthy lifestyle is, but few sites which helps them overcome the psychological barriers against changing their lifestyle.

The largest European health site provider is NetDoktor, which is a partner of KOM2002.

Of special interest is Health on the Net[5], which has participated in previous related EU-funded projects such as WRAPIN (IST-2001-33260 BP) which targets use of natural-language access to data bases.

One of the best mental health sites on the Internet is the Mental Health Net [2]. This net, however, like most other psychology/psychotherapy web sites, is aimed at specialists and at reporting research, rather than on giving advice.

Psychology Sites

A good psychology site is Psychology About [3]. But it is very different from what KOM2002 plans to do. It does not have any good way of finding the answers to specific psychological questions.

There are many specialized web sites on various kinds of mental problems, such as eating disorders, child care, ADHD (Attention-Deficit Hyperactivity Disorder), etc. They usually give a good overview of their area, but most of them are not well oriented towards answering specific questions.

An evaluation of the quality of existing psychological healthcare sites on the Internet showed that the quality was variable [1].

General Web Portals

Internet search engines and portals like Google and Yahoo are surprisingly good at finding information, but still do not give good answers to common psychological problem questions, according to our tests. We tried posing some common psychological advice problems, and found that Google mainly found entries in discussion groups and newspaper articles. They

were not carefully prepared by experts to help people.

One of the most well known web services using natural-language question-answering is AskJeeves [4]. AskJeeves uses similar methods to ours in KOM2002, and can produce amazingly intelligent answers to questions which have been well classified. They do not, however, seem to have any good classifiers on psychological advice, since our tests with such questions often gave poor results.

Psychotherapy Online

One of the best sites for psychotherapeutic guidance on the Internet is HelpHorizons. They provide psychotherapeutic guidance through chats and e-mails, and have a look-up service for listing 500 000 psychotherapists for conventional counselling (only in the U.S.A.). The chat system allows a person to immediately discuss a current problem with a psychotherapist, or to schedule a chat session with a therapist.

Psychotherapists pay a fee from about $20 to about $80 per month, and decide themselves what to charge their patients. HelpHorizons provide software for finding a therapist, scheduling and charging.

[1]   Assessing the Quality of Psychological Healthcare Sites Available on the Internet, by J. diBlassio et al, Ursinus College, USA, Mental Help Net, http://www.mentalhelp.net/poc/view_doc.php/type/doc/id/372?PHPSESSID=f78e745b981aea8956a2d066d6781fec.

[2]   MHN Mental Health Net, http://www.mentalhelp.net/.

[3]   Psychology About, http://psychology.about.com/.

[4]   AskJeeves, http://www.askjeeves.com/.

[5]   Health On the Net, http://www.hon.ch/

New Opportunities

KOM2002 will give Europe a better opportunity to develop content simultaneously in multiple languages by experts in many different countries. This will give new opportunities for co-working of European specialists in different fields.
Since we have found no good question-answering

service on the Internet on mental health and psychology/psychotherapy problems, there is an obvious opening for new work in this area. There is a great need for help (see page 12) and the opportunity for KOM2002 is therefore good. On line psychotherapeutic counselling through e-mail or chat has been successful in the U.S.A. but we do not know of any experience with this in Europe.

Competing/Alternative Approaches

We have found no existing service similar to KOM2002. No other tool combines forums with a multi-lingual content development tool in a similar way.

The main alternative approaches to providing the kind of service which our mental health information site will provide are:

a. Popular psychology/psychotherapy books, and magazine articles.

b. Professional help from psychotherapists and psychiatrists.

We do not claim that we will replace either these sources of help.

Popular books can provide a more in-depth treatment of areas than we can do, but cannot as readily guide people to reasonably short advice relevant to their particular problems. Many people are not willing to read a whole book. Printed material is also not as well adjusted to different needs of different people as our site will be.

No Internet guidance can of course replace a professional specialist. However, many people with psychological or mental health problems never go to a specialist, and specialist psychotherapy can be expensive. Our site will not claim to be able to replace such professionals, and will recommend people to seek professional help when needed. However, Our site can have an advantage in that we can provide specialist help to people living in places where otherwise this is not available. Thus, persons seeking professional help could bring the recommendations from our site with them to their psychiatrist/psychotherapist, and we believe this can provide new insights to many professional therapists.

Achievability within Project Time

Software functionality: Since this project is based on already existing software, developed partly funded by previous EU projects, availability and functionality will not be a large problem.

Achieving consensus: All the medical partners are committed to providing information on-line, and many of them already have experience with this. This means that one of the largest problems with achieving consensus, that some medical people are afraid of all publicising popular information, will not be a problem in this project.

Usage experience with the software: Since the software has already been developed and used in previous EU-funded projects, the availability of software will not be a problem.

Usage experience with the site content: It is important to have a high quality and comprehensive information base before we try to get users. Thus, we have not scheduled external usage until month 12. This gives us a whole year to evaluate experience and stepwisely refine the information base. In fact, the stepwise refinement can start already on month 9, since at that time we will start testing with selected user groups.

Dissemination: The fact that we have successful existing Internet health information providers also as medical partners will make dissemination of the site info likely to succeed (see page **Error! Bookmark not defined.**). The KOM2002 software tool will be made available as public domain software. Its precursor, KOM 2000, already has been distributed to about 20 installations, mainly in Europe.

Technological Basis

Technological basis is described on page 13.

Risk Factors

On-line advice based on stored informational pages can be screened by professionals, which reduces the risk of unsuitable content. In spite of this, psychological counselling like all medical counselling has a liability risk. Some advice may be inappropriate to some people, and some people may interpret advice incorrectly.

In a direct interaction between counsellor and patient (through face-to-face meetings, phone counselling or chat counselling) the counsellors can directly note misunderstandings and correct them. Advice through stored pages does not have this remedial facility.

The risk is similar to psychological advice through books and magazine articles and advice columns in magazines. In KOM2002 this risk will be reduced by careful writing to avoid text which is easily misunderstood and by letting several professional therapists screen the texts before publication.

In KOM2002, each medical partner will have liability for content produced by that medical partner. The commercial partners will only share liability if they copy information from KOM2002 to their own sites.

Viability Beyond the Project Phase

During the 24-month EU-funded period, our site itself will not be commercial, but its contents will be made available or sold to commercial health sites who want to increase their coverage of mental health. Towards the end of the EU-funded phase of the project, Our site and software tools will achieve a commercial basis for future funding by:

a. Continuing to provide free access to informational pages which can be delivered automatically to users.

b. But charging a fee for personalized advice from experts.

c. We might also investigate whether to accept sponsoring or advertisements for selected good products and services.

d. Our contents can also be sold to other web-based health services.

American experience from HelpHorizons shows that it is viable to run such a service commercially. HelpHorizons are paid by the psychotherapists registered with them, and the therapists charge the customers for the therapy, using a billing and scheduling system provided by HelpHorizons.

Impact

Obesity and Unhealthy life Style

15-30 percent of the European population are unhealthily overweight or obesity. Unhealthy life style is a primary cause of other illnesses, such as cancer, diabetes and cardiovascular diseases.

A Swedish study compared 2038 obese individuals with a population average. Sick leave and disability pension rates were doubled in obese women. The incremental cost of sick leave and disability pension for the overweight fraction of the Swedish female population was 400 000 000 Euro/year. Since Sweden has 2,4 % of the EU population, this would mean if the same results were applicable in all EU countries, that the cost of loss of productivity because of obesity in women in the whole of EU would be more than 16 000 000 000 Euro/year. Annual pharmaceutical costs were 77 % higher for obese individuals than for the population average. [1]

Eating Disorders

10-20 percent of young women have eating disorders like bulimia and anorexia. 0,5 to 1 % of young women has anorexia nervosa. This can lead to death (for 15 % of the people with anorexia according to one study), but also if the person survives, 60 % of persons with anorexia and 40 % of persons with bulimia feel very unwell and are very distressed by their disorder.

Mental Disorders

23 % of the population has diagnosable mental disorders. Mental disorders account for four of the ten most common causes of disability.

The cost of treatment of mental health in Europe is 150 000 000 000 Euro/year, and indirect costs such as loss of productivity is 70 000 000 000 Euro/year.

Almost everyone can benefit from psychological guidance at some time.

How Much can KOM2002 Help?

Even if our site only helps a small percentage of these people, the economic impact will be large. Note also that our site primarily targets people who do not get into contact with traditional medical mental health services. Many people with emotional, personality and psychological problems will not get into contact with professional psychiatric health services or may get to a health service which does not have the right competence for their particular problem. Our site will combine the competence of several different experts to produce a synergy of valuable knowledge for our users.

[1]   Economic Aspects on Obesity, by Kristina Narbro, Department of Body Composition and Metabolism, Göteborg University, Göteborg, Sweden, 2001.

3   Workplan

Project Workplan Overview

The project will start with evaluation of existing material (WP1) both provided by partners and available elsewhere. Doing this overview will be a good way for the partners to agree on criteria, requirements and other issues for our own contents. This work will result in agreed plans for our own content by month 6.

After this, we will start developing our own contents (WP2). By month 9, we will have enough own contents to begin user testing with smaller selected user groups, such as patients at the medical clinics participating in the project.

User interaction tools (forums, chats, etc.) will be provided in parallel with our own contents (WP5).

From month 9 and onwards (WP4), we will perform stepwise refinement of our data base based on user logging, user ratings and usage experience, on selected small initial test groups of users.

By month 12, we plan to make our own content publicly available to any European citizen.

By month 12, we will start exploitation and dissemination (WP6), by using established techniques for getting users to web pages (see page 15).

A second version of our own content will be ready on month 18 (WP3).

Evaluation of the usefulness of our services, based on user experience, will start on month 12 (WP7) and continue until the end of the project. This evaluation will include some controlled tests on smaller groups of patients at participating medical clinics or groups found in other ways.

Technological Basis

a.   A Natural Language Question-Answering System (NLQAS), where users can write their questions and the software will find a good answer.

b.   Answers will be in a combination of XML and XHTML format. Expected quality of the answers will be around 80 % recall and 90 % user satisfaction, based on our experience

with using the same software tool for information in other subject areas.

c.   The software will easily adapt to different delivery formats, and we will in addition to ordinary WWW access also deliver in formats for PDAs (mobile devices) and access formats suitable for disabled people.

d.   A Yahoo-like subject tree, organizing the same information as the NLQAS for access with overview of the available information.

e.   Logging of all user accesses and ratings, provided by the users, to assess the quality of the NLQAS, to note when people did not get a good answer, and to allow continuous updating of the data base with new, improved information.

f.   When a user does not find a good answer in the data base, they can send their questions to an Ask-The-Expert-Service (ATES), where psychiatric/psychological/psychotherapist experts will answer them. Anonymous questions and answers will be published so that other users can browse them and ask additional questions for clarification if needed.

g.   Forum system, where users can discuss and exchange information on mental health, moderated by psychiatric/psychological/-psychotherapist experts.

h.   Group therapy through on-line forums guided by psychotherapists.

i.   Individual therapy through chats and e-mail.

j.   Automatic translation, using Systran, between major human languages of the messages in forums. Experts can check the machine-translations and replace them by better human translations when needed.

k.   A development tool for production of answers in multiple languages through cooperation of psychiatric/psychological/-psychotherapist experts in different parts of Europe, including automatic first translation

through Systran, which is to be replaced, before publication, by human expert translations. This tool will also allow the same text to be easily presented in different formats for different usage, such as NLQAS, subject tree, printing on paper, access by people with disabilities, the same information in different languages, display on devices with very small screens, such as mobile devices (PDAs), etc.

All of this will be provided using software tools which have already been developed by partner 1, and partly funded by previous EU-funded research projects, with minor extensions to support the new application area.

Technical Quality

The project will perform continuous technology monitoring to reduce the risk of technology obsolescence. Internet as well as mobile telecommunications technology and protocols are changing rapidly, and active technology monitoring is required to watch for new developments. Since the project is anticipating the successful roll out of 3rd generation mobile telecommunications technology in the next few years, this monitoring is especially important to make sure that tools being developed can be used by existing as well as the emerging technologies. Note that for this particular work we request permission for travel outside Europe. This is necessary, since most important meetings in this area take place in North America.

Medical Quality

The project will employ a Quality Management System based on peer reviewing. Important results and deliverables will be peer reviewed by a partner, who has not contributed much to the result to be peer reviewed, or by external peer reviewers. For external peer reviewers, we will contact other ongoing projects in the same area as ours, and suggest that we establish peer reviewing agreements, where each project will help to find peer reviewers on deliverables from the other projects.

A central issue for medical information sources on the Internet is the medical correctness of the answers. Ideally, every answer should be based on proven scientific facts from an indicated medical science reference. This is, however, difficult to achieve in a psychological guidance system. A system which only contained scientifically proven answers from quantitative research would be very shallow and barren and often not provide satisfactory responses.

We will instead attain high quality by combining the following methods:

a. All answers will be developed or checked by qualified medical experts.

b. All answers will (after translation to English) be checked by the different medical partners in different countries. The cost for professional translation to English is included in the budgets of all the medical partners in the "Subcontracting" section. (Translation to the national languages of the partners will be done either by professional translators or by the partners themselves.) No answer will be published in English or in another language than its origination language, before it has been peer reveiwed and approved by another medical partner in another country.

c. Users will always know who provided the answers and the source of the answers. The source can be a reference to a scientific study, or it can be a reference to the experience of a qualified medical expert.

d. Answers will be written in a language which is understood by people who are not medical experts.

e. User satisfaction will be continuously logged and the data base updated accordingly (see the section Stepwise Refinement on page 8).

f. An address for complaints and suggestions for improvement will be easily accessible to all viewers of our pages.

g. User privacy will be protected and a clear privacy policy will be developed and available to users.

h. People with problems, their relatives and friends, can participate anonymously and their anonymity will be respected in

accordance with a privacy policy, which is easily available to all users.

i.   None of the partners will have any commercial interest in marketing any product in the area.

j.   We will avoid a one-sided view. On controversial issues, we will explain the different views to the users, and let them choose.

k.   The same information can easily be delivered in different formats, such as special formats for people with disabilities or for people using hand-held computers.

l.   All links to web sites outside of KOM2002 will be quality-checked by medical professionals.

We are aware of the eEurope/eHealth quality guidelines [1], the Mitretek Health Summit Working Group [2], the eEurope Health Online Action Plan [9] and the HON Code of Conduct [3]. Other inputs are OMNI [4], CAPHIS [5] and MHN [7].

On-line psychotherapy is not deemed unethical by any of the major professional organisations for psychotherapists and psychiatrists [8].

A quality assurance plan will be developed as deliverable D1.3.

[1]   Quality Criteria for Health Related Websites, published by eEurope/eHealth, http://europa.eu.int/information_society/eeurope/e health/quality/draft_guidelines/index_en.htm.

[2]   Criteria for Assessing the Quality of Health Information on the Internet - Policy Paper, published by the Health Summit Working Group at http://hitiweb.mitretek.org/docs/policy.html.

[3]   HON Code of Conduct for medical and health Web sites, http://www.hon.ch/HONcode/Codunct.html.

[4]   OMNI guide to quality Internet resources in health and medicine.

|5]   Consumer and Patient Health Information Section at http://caphis.mlanet.org/consumer/.

[6]   Community Outreach and Prevention Network Requirements, Information Structure and Policies, developed by a previous EU-funded research project, in which some of the partners of KOM2002 participated.

[7]   Assessing the Quality of Psychological HealthCare Sites Available on the Internet, at http://www.mentalhelp.net/poc/view_doc.php/type /doc/id/372/ and http://www.mentalhelp.net/poc/view_doc.php/type /doc/id/373/.

[8]   HelpHorizons professional frequently asked questions, https://www.helphorizons.com/help/faqvo.asp#iso nline

[9]   Guidelines and quality criteria for online dissemination of medical information, action plan from Health Online workshop held on 7 and 8 June 2001 in Brussels.

Internet Quality and Reaching Out Plan

There is no value in our work, if we do not reach out to people who can be helped by us. Thus, a very important part of the our work is the work to reach out to people with our information. We need to reach out to people with the disorders targeted by our site, whom we can help. We need to reach out to people in risk categories, like young women to prevent eating disorders. We need to reach out to medical doctors and other health professionals, who need information on how to handle patients with the disorders targeted by our site. We need to reach out to people with influence in society, since they can help build a society which prevents eating disorders, obesity, unhealthy living and other disorders targeted by our site. We need to reach out to advertising people, since their favouring of extreme slimness and other unhealthy behaviour is a major cause of eating disorders and unhealthy living.

How, then, can we reach out to these people. To answer this question, it is important to recognize that reaching out to people on the Internet is different than reaching out to people in other ways. It is important to understand how people choose which WWW sites to visit. A large percentage of visitors to web sites find the sites by using web directories like Google and Yahoo. Other people go to web sites, because of links to them from other web sites. Also reaching out to newspapers and journalists can be done through the Internet, since searching on the Internet has become a major way for journalists to research their articles.

How, then, do you get web directories like Google and Yahoo to put your web site early in their lists of links. Knowing how these web directories select pages is important. By certain

ways of organising your web pages, you can get higher ratings. This technology is called "Search Engine Optimisation" (SEO), and will be employed. However, by far the most important way to get high ratings from web directories is to produce good web sites. Google has become very popular because it puts links to good web sites first. The technique Google employs is to look at links to web sites from other web sites. And links from reputable web sites, like Yahoo, get higher ratings by Google than less reputable web sites. And reputable web sites put links to other web sites, which they think are good.

So it all comes down to making very good web sites. By good is meant web sites which give good and useful information, makes it easy to find information, presents the information in a nice way. Our site should provide the information which people need. Thus, very important for reaching out to people is simply to make our web site very good in all respects.

Writin good web sites is different from writing for example good research reports or good deliverables or good proposals for new EU-funded research projects. You should use simple language, understandable to non-experts, even if experts will find such text less scientifically precise. But since you also want to reach out to professionals, like medical doctors, you should also provide text which give them valuable information.Our site will to some extent provide separate informational areas for ordinary citizens and for professionals. But best is if the same text can be written to suit both categories, because you never know how a person finds a web page – a medical doctor searching on the Internet may find web pages for laymen, and an ordinary citizen may find web pages intended for experts.

It is very important that our web site is designed with the needs of its users foremost. This may sound self-evident, but if you look at the web sites of other EU funded research projects, you will see that many of their sites are designed in the interest of promoting the project and its partners, rather than helping the users to find the information they need.

Putting the users foremost means that the content should be what users ask for, and be organised so that users can easily find the information they are looking for. The information should be relevant to the users' needs and the web site should contain clear instructions on how to find information.

Because of this, this project will put much effort into making its web site good: Good information, well organised, neatly presented, scientifically sound. That is the best way to reach out to people with our information and experience!

In addition to this, we will of course employ the well-known ways to get people to find your web sites: Including meta fields for keywords and description, employ repeated search phrases, inviting people with good web sites to link to our web site. We will also, at least initially, when our web site is first opened to the general public (month 12 according to the work plan), to get our web site known, use a limited amount of web advertising.

It is, however, important that we do not try to promote our web site too early. It should be really good, before we invite people to visit us. Because of this, all the web pages on our web site will at the beginning be marked with special meta fields which will prevent web crawlers to index them and with warnings, saying that the pages are "under development". Not until our web site is really good, will we remove these meta fields.

Summary of Reaching Out Plan

a. Produce a comprehensive set of very good and easy to understand informational pages.

b. Make it easy to find by a combination of subject-trees, natural-language question-answering and ordinary search function.

c. Ensure that all pages have proper meta-tags for indexing by search engines.

d. Select good search key strings and include multiple search key strings in the text.

e. Ask many good web indexing sites to reference your pages.

f. Check access statistics and access logs to see where people have problems finding information, and maintain the web site continuously.

g. Provide forum, ask-the-expert areas and news areas.

h.   Translate the site to multiple European languages.

i.   Do not introduce the site until it is very good.

j.   Introduce the site by short-time web advertisements at the start to get the site known.

Evaluation Plan

A detailed evaluation plan of our web site will be developed as deliverable D7.1. This section gives an overview of the evaluation tasks, but its content may be modified through the more detailed work in developing deliverable D7.1.

There will be two parallel evaluations, one of the suitability of the KOM2002 software, and one of the quality of our web site.

In general, health information sites on the Internet are very popular, and many Internet users access such sites. For example, NetDoktor (which is a partner of Web4Health) has more than one million visitors per month. Health information sites put up by other partners of Web4Health also have very high access rates.

It is obvious, because of the popularity of health informational sites, that they are important to people. An example of this is that, in recent years, some patients search for so much medical information about their illness that their medical doctors feel that the patient knows more than the doctor.

It can be expected, because of this, that medical information on the Internet has an impact on health. How, then, can this be measured?

Traditional clinical evaluation would be to divide a set of patients into a control group and a treatment group, ask the members of the treatment group to use our Internet health site to find information, and then check whether the patients in the treatment group do in fact become healthier. In the case of obesity and eating disorders, the increased health could for example be measured by a more normal body weight (BMI value) and reports from the patient of more normal eating habits, stopping vomiting, etc.

It is probably not good to use this method on patients at existing psychiatric and psychotherapeutic clinics, since these patients are at the same time receiving interventions from their psychiatrists/psychoteraphists which are more powerful than the interventions from our web site.

Instead our web site will use patients who are on waiting lists for psychiatric/psychotherapeutic treatment and patients who send e-mail letters to our web services asking for personalized advice. We know from previous experience that there will be many such e-mail letters. The following procedure might then be followed:

a.   Sort out those patients who have such serious problems that they need immediate help, and give them advice to get it.

b.   Send a letter to the other patients, asking them to access the our web site and try to find information there, promising that they will get personalized advice two weeks later, provided they answer some questions on the value of our information, which they have seen.

c.   The URL they would be directed to, would be a special page which will ask for their identification and ask a few screening questions.

d.   Two weeks later, ask them to answer a new set of screening questions, promising them free advice through e-mail after they have answered. It is important to clearly clarify that they will get help, even if their answers to the new screening questions show improvement.

An alternative method, which will also be used, is to ask existing patients at psychiatric/-psychotherapeutic clinics and practices access the our web site and directly report whether the information was of value to them. One could then ask them, a week later, if they have improved because of the advice they got.

A third method might be to combine the methods described above with selecting two groups of patients, one which was not affected by the information from our web site and/or did not report that it was useful for them, and one which was affected positively, and compare them through interviews, personality tests and other ways to find out why our web pages helped some of them and not others.

A fourth method is to use the statistics which the KOM2002 software can collect automatically,

such as how often the system could find an answer to a question, the ratings given by the users, etc. KOM2002 will collect user ratings. To get them to supply such ratings, we could ask existing patients at clinics and practices participating in this project.

This evaluation plan will be updated and extended in deliverable D7.1.

3.1   Machine Translation

Innovation

Translation Technology includes electronic tools for translation support, document processing and management, messaging and dialog systems.

The Terminological workbench addresses the necessity of directly and continuously improve the translation accuracy by inserting the appropriate specialised terminology, using translation memory and post edition functionalities. It is particularly helpful to be able to extract terminology and to automatically update the dictionaries. Translation memory (and aligned multilingual text corpora) systems cannot translate, but can keep track of previous translations - based on pair wise matching of terms, phrases, sentences and versions. Machine translation systems can translate but cannot keep track of previous translation versions.

The objective of this project is to combine all these possibilities, linking a new tool (automatic but validated by an human expert) inserting the terminology extracted from TM and post edited translations into the MT dictionaries.

WP8 Terminological workbench

Terminology implementation in the project languages will be performed, using 3 modes :

- Insertion of the available specialised terminology from the users and/or content providers,

- automatic terminology extraction from aligned multilingual text corpora provided by the content providers, and validation by human translators,

- insertion of the users feedback in the MT dictionaries, using Systran coding tool and/or post edition tool.

The difference between revised sentences and the translation proposed by the machine translation will be analysed to extract the meaning of the revision : the post editor will detect whether a revision was made because of a terminological or analysis problem, or because a deeper one. For the first two points, the system will automatically suggest new dictionary entries taking into account the localized version, mainly contextual terminological entries. These new entries, validated by the reviewer, will then be integrated into the updated MT dictionaries, thus extending the impact of the revision to further translations.

1.   Global specification of the architecture for the system

This task specifies how the system components – the translation modules, terminology modules and memory modules – fit together to create the system functions of dictionary updating, terminology extraction, document processing and refinement functions. - Installation of the MT software and the extraction tool.

2.   Preparation of terminology

Extensive dictionaries and text corpora for the languages covered in the Terminological workbench exist within the Consortium. This will permit terminology extraction to be performed efficiently.

- Design and implementation of validation module for new extracted terminology.

3.   Integration of multiple components

The components of machine translation, translation memory and terminology functions will be integrated together with a user-friendly interface.

- Design and implementation of intuitive online extractor analysing difference between revised sentences and automatic translation.

4.   Assessment of feedback from the users, terminology implementation adapted to each application

Assessment of feedback from users guides the work of refining the Terminological workbench. It will be reviewed as part of the evaluation of the entire project. In addition, a

special assessment focused solely on this terminological implementation support system will be made. Evaluation serves to locate problems and generate ideas for improvements.

Deliverables :

Dn.1:Prototype of the Terminological workbench, M12
Dn.2 Final version of the Terminological workbench, M24

Expected results : A significant enhancement of rough translation

3.2 Existing Software

The following existing software, partially developed with funding from previous EU projects, will be input to this project:

Natural Language Question Answering System

The basis of this system is not any artificial intelligence or full syntactic and semantic analysis of the query. The basis is instead templates in a general-purpose format. As an example, below is an answer with its classification:

Title:	Causes of Eating Disorders
Required keywords:	bulimia* anorexia* overweigh* obes* fat* slim* diet* eat* ; ill* caus* result* relat* combi* bas* reason* creat* effect* why [get got; me]
Optional keywords:	disord* much
Forbidden keywords:	psychosis*

Here are examples of questions which are matched by this template:

"What can cause bulimia?" "Why am I overweight?" "What got him to eat too much?"

The *Forbidden keyword* "psychosis" in the example above will mean that this answer will not match for example the question "Can a psychosis cause bulimia". Forbidden keywords are mostly used when there is another, more direct answer which should be matched instead of the answer with the forbidden keyword.

A matching answer must contain one of the words in the groups separated by ";" in the required keywords list." [get got; me]" will match "get me" or "got me". An answer which contains more than 1 word, which is not on a stop list of common words and not in the required or optional keywords, is listed as a "related" answer.

It is possible to have several separate question templates relating to the same answer.

Below is an example of the result page for the question "What causes eating disorders?":

Note that several answers may be listed, the recipient can then choose which of them is most appropriate. The answers are separated into two categories, fully matching answers (two in the example above) and related answers (one in the example above), depending on how well the template matches the user question.

Multi-Lingual Forums and Chats

The users can also specify which languages they can speak, in order of preference. For each language, the users can specify their fluency in that particular language. This information is combined with the

quality of the translation, to select which translation to show to this particular user. For example, a person might indicate a fluency of 1.0 for French and 0.7 for English. If a message is available in an English original, and a French machine-translation, such a user may prefer to see the English original. But if a translation into French by a human expert is available, the user may prefer to read the French translation.

Reading Messages

When users read messages, they will automatically be shown each message in the language most suited to them, by combining the quality of each translation with the fluency of the user in each language. The table below shows a scoring table, the language version with the highest score is shown to the user.

			User understanding of this language			
		Numeric quality value	0,0	0,3	0,7	1,0
	Numeric quality value	Human quality designation	No	A little	Fairly well	Well
Quality of translation	0,6	Machine	0	1	4	6
	0,7	Other Human	0	2	7	8
	0,8	Native	0	3	9	10
	0,9	Expert	0	3	9	11
	1,0	Original	1	3	9	12

Examples:

User A understands French well and English Fairly well. A document is available in original English and Machine translation to French. For this user, the score for the original English will be 9 and for the French translation will be 6. So A is shown the original English version rather than the French machine translation.

User B understands English well and French a little. A document is available in original French and in machine translation to English. The score will be 6 for the English translation and 3 for the French original, so this user is shown the English machine translation.

A user can always choose to see a message in another language. Here is an example of the user interface when reading a thread.

News   Private   Forums & Chats   Help   Logout

Go to:
All forums
   Eating Disorders Public
   Discussions
      There are periods when
      I binge eat

There are periods when I binge eat

To: Eating Disorders Public Discussions
Author: Caroline Johansson

Thread Messages in thread:

342. There are periods when I binge eat , Caroline Johansson, Sun 13 Jan 18:31 2002

345. Re: There are periods when I binge eat , Eleonor Lindberg, Sun 13 Jan 18:33 2002

342.   ⚞ Top   Next message ▾

There are periods when I binge eat
From: Caroline Johansson
(Translated by: Jacob Palme)
Date: Sun, 13 Jan 2002
18:40:09 +0100
Language: Swedish , English

Reply to all   Personal reply   Add Recipients   Translate   Modify object   Show History

I am 24 years old. My life is rather chaotic. It has been that way as long as I can remember. I am struggling along with my work and my boyfriend and try to believe in myself. I have never eaten normally, even though I have been active in sports and know how important food is. In my present phase, one of many, I buy sweets and cookies for 15-20 Euros/day, and push them down.

After this, I get anxious and feel very guilty. I cannot say that I am fat, but both of us feel bad about this. My stomach does not like it. I am very aware of my problems, but cannot solve them myself. I have no one to talk to, am rather desperate.

345.   ⚞ Top   ▲ Previous message

Re: There are periods when I binge eat

In the example above, a thread is shown in English translation. By pushing the "Swedish" command, the reader can get to the original Swedish text of the message. The "Translate" command can be used to enter a manual translation into a new language. Connections to Systran for automatic translation is not yet implemented, but will be as soon as the project starts.

Writing Messages

Messages can be written in plain text or in HTML format. When you write a message, you are asked to specify the language you are using, see below:

Write Reply

Subject: [Re: Freedom versus control] [Submit]

[Français ⇕] Enter the text...

Attachment: [   ] [Browse...]
[Submit] [Preview/Save] [Cancel]

Detecting Language

We have found that it is very easy to enter a message, but indicate the wrong language. Because of this, we have added code developed in a previous EU-funded research project by KOM2002 partner C1, which will detect the language of a text. If a user enters a text in one language, but uses common words from another language, the system asks the user to confirm the choice of language or instead use the language detected. This tool can also be used to detect the language of incoming e-mail, which may not always have a language indication. The code for language detection works very well for ordinary text. It will only have problems if a message contains a mixture of different languages, or a combination of natural language and some artificial language like a programming language or query language. It is not so reliable for very short messages (less than 200 characters).

Collecting Opinions

The forum system also has a facility for collecting the opinions of members of a group on various issues. For example, a list of alternative solutions can be shown, and each member can evaluate each solution on a scale from "Very bad" to "Very good". Note that this is not a voting system. The computer does not compute any automatic decision, it just collects the opinions and shows an overview of the opinions among the members of the forum.

Managing the Creation of Answers to the Natural-Language Question-Answering System

The window below is an example of the user interface of the software for managing the creation of answers.

The answer can be shown in multiple languages, and below the answer are links to discussions regarding it. A user entering the system and with access rights to the question-handling system will be able to see which new contributions have been written in the discussions of any of the terms, and read and comment on them.

Use of XML, RDF and Dublin Core

The health information format will be based on XML, RDF and Dublin Core as specified in a previous EU-funded project. Below is an abbreviated example of an answer in such a format:

```
1.    <?xml version="1.0"?>
2.    <!DOCTYPE rdf:RDF SYSTEM "http:salut.nu/health/documentation/health-info.dtd">
3.    <rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
4.            xmlns:dc="http://purl.org/dc/elements/1.1/"
5.            xmlns:hi="http://salut.nu/health/hi-format.html">
6.    <rdf:Description about="http://salut.nu/FAQ-entries/>
7.    <hi:translation xml:lang="en">
8.    <dc:language>en</dc:language>
9.    <dc:identifier>http://salut.nu/en/answers/food-sugar.xml</dc:identifier>
10.   <dc:title>Sugar</dc:title>
11.   <dc:subject>sugar, sweet, ice cream, chocolate, toffee, bonbon, honey, pastry, cake,
      biscuit, cookie, bun, cooky</dc:subject>
12.   <dc:description>A summary of medical knowledge about sugar.</dc:description>
13.   <dc:date-created>2001-06-19</dc:date-created>
14.   <dc:format>text/html</dc:format>
15.   <dc:type>text</dc:type>
16.   <dc:publisher><a href="http://salut.nu/en/swedish/" xmlns='http://www.w3.org/1999/xhtml'>
17.   SALUT Sweden</a></dc:publisher>
18.   <hi:question>Will sugar make me fat?</hi:question>
19.   <hi:required>sugar* sweet* [ice;cream] chook* toffee* bonbon* honey* pastry* cake*
      biscuit* cookie>* bun cooky*</hi:required>
20.   <hi:optional>good healthy non-healthy dangerous* bad harm* health* fit vigorous well*
      strong beneficial recommend* nourishing wholesome unsafe* hazard* risk* safe* damag*
      hurt* unsafe*</hi:optional>
21.   <hi:forbidden></hi:forbidden>
```

```
22.    <hi:limit>1</hi:limit>
23.    <dc:relation-alias></dc:relation-alias>
24.    <html:body xmlns='http://www.w3.org/1999/xhtml'>
25.    A healthy person's body has the ability to tell you when
26.    you have eaten enough. For a person, where this ability works well, you
27.    will feel satisfied when you have eaten what your body needs. You will then
28.    achieve a normal, healthy and good-looking body. </p>
... ... ...
29.    <p><img src="/images/salad-sauce.jpg" width="55" height="113" align="left" vspace="5"
       hspace="5" />Unfortunately,
... ... ...
30.    <html:body xmlns='http://www.w3.org/1999/xhtml'>
31.    </hi:translation>
32.    <hi:translation xml:lang="sv">
33.    <dc:language>sv</dc:language>
34.    <dc:identifier>http://salut.nu/sv/answers/food-sugar.xml</dc:identifier>
35.    <dc:title>Socker</dc:title>
36.    <dc:subject>socker, söt, glass, choko, karamell, godsak, snask, kaka, kex,
       godis</dc:subject>
37.    <dc:description>Vad man vet om sockers hälsoeffekter.</dc:description>
38.    <dc:date>2001-06-19</dc:date>
39.    <dc:format>text/html</dc:format>
40.    <dc:type>text</dc:type>
41.    <dc:publisher><a href="http://salut.nu/sv/swedish/">
42.    SALUT Sweden</a></dc:publisher>
43.    <dc:date-created>2001-01-10</dc:date-created>
44.    <hi:question>Blir man fet av socker?</hi:question>
45.    <hi:required>socker* söt* glass* choko* karamell* godsak* snask* kaka* kex*
       godis*</hi:required>
46.    <hi:optional>bra nyttig* hälso* hälsa* onyttig* ohälso* farlig* dålig* skadlig*
       frisk*</hi:optional>
47.    <hi:forbidden></hi:forbidden>
48.    <hi:limit>1</hi:limit>
49.    <dc:relation-alias></dc:relation-alias>
50.    <html:body>
51.
52.    <p>En frisk m&Auml;nniskas kropp har f&ouml;rm&aring;gan att tala om f&ouml;r dig n&Auml;r
       du har &Auml;tit tillr&Auml;ckligt. N&Auml;r denna f&ouml;rm&aring;ga fungerar bra,
       kommer du att k&Auml;nna dig m&Auml;tt, n&Auml;r du har &Auml;tit s&aring; mycket som din
       kropp beh&ouml;ver. Du f&aring;r d&Auml;rmed automatiskt en normal, frisk och snygg
       kropp.</p>
... ... ...

53.    </html:body>
54.    </hi:translation>
55.    </rdf:Description>
56.    </rdf:RDF>
```

3.3 Workpackage Overview

Partner Personmonths in each Work Package

Work package No.	Workpackage title	Lead contractor No.	KTH	A-BIT[1]	OG	Ioan-nina	Emer-gis	Sys-tran	FP	FH NON	Net-dok-tor	Person-months	Start month	End month	Deli-vera-bles No.
			1	1.1	2	3	4	5	6	7	8				
0	Project co-ordination and admini-stration	KTH & OG	12	1	8	0,5	0,2	1	0,5	0,5	0,5	24,2	1	24	D0.1, D0.2, D0.3, D0.4
1	Existing content evaluation and quality assurance planning	Ioan-nina & ABIT	2	1	1	1	0,8	2	1	2,5	1	12,3	1	6	D1.1, D1.2, D1.3
2	New content development first stage	FH NON	6	2	4	3	1,5	2	2	2,8	0,5	23,8	3	12	D2.1, D2.2, D2.3
3	New content development second stage	FH NON	5	1	4	1	1	2	3	2	0,5	19,5	12	22	D3.1, D3.2
4	Own content and usage step-wise refinement	KTH	6	2	2	1	1	2	3,5	2,5	0	20	6	24	D4.1, D4.2, D4.3
5	Forums, chats, ask-the-expert areas, on-line consultation services	KTH	8	0	1	1,5	0,5	1	1	2	0	15	6	24	D5.1, D5.2
6	Exploitation and dissemination	Net-Dok-tor	2	0,5	1,5	0,5	0,5	2	0,5	0	4	11,5	6	24	D6.1, D6.2, D6.3
7	Evaluation and reporting	Ioann-ina	1,2	1	2	3	0,5	2	0,5	0,5	1	11,7	12	24	D7.1, D7.2, D7.3, D7.4
8	Language translation technology	SYS TRA N	1	0,5	0,5	0,5	0	20,6	0	0,5	0	23,6	1	24	D8.1, D8.2, D8.3
All		Total	43,2	9	24	12	6	34,6	12	13,3	7,5	161,6			

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[1] Subcontractor to KTH

3.4 Workpackage Descriptions

Workpackage Description: WP0 Co-ordination and Management

Workpackage number:	WP0	Start date:	1	End date:	24
Workpackage title:	Project co-ordination				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

- Ensure good cooperation and co-ordination of the work done by the different partners so that promised results are delivered with high quality and on time.

- Communicate with the CEC and with other on-going related projects.

- Management of deliverables and, for important deliverables, their peer reviewing.

Description of work

WP0.1 Project Co-ordination includes co-ordination of all contract management, financial reporting, and delivery of project results to the commission as well as project reviews, consortium meetings and workshops and the final management report. This subtask results in on-time delivery of project management reports as well as the final project report.

WP0.2 Project website and presentation involves setting up the official project website with updated project and partner information and collaboration infrastructure such as project mailing list, joint file repositories, as well as links to regional websites. This worktask also includes making a *Project Presentation* for the public use deliverable. The consortium may, if needed, subcontract part of the web design work to professional designers in order to ensure a professional looking and appealing website.

The day-to-day activities are managed by the technical co-ordinator, OG, and the finances are managed by the administrative-financial co-ordinator, KTH. KTH also has main responsibility for developing the project website. Each partner manages the content in its language. The English website is jointly produced by all medical partners with technical support from KTH, OG and Systran.

(Inter-) Dependencies, milestones and expected results

A effective project producing the expected results in on-time.
Month 8: Consortium agreement ready.

Deliverables

Month 3: D0.1 Main project website.
Month 3: D0.2 Project presentation.
Month 5: D0.3 Community outreach policies.
Month 9: D0.4 Reports for the annual review.

Workpackage Description: WP1 Existing Content Evaluation and Quality Planning

Workpackage number:	WP1	Start date:	1	End date:	6
Workpackage title:	Existing content evaluation				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

Some of the partners already have some existing content which can be used as a starting point. In this work package, this content will be translated into English and evaluated by all the medical partners. It will be put on a draft non-public demonstration service at first, and will later, after evaluation and approval, be part of the main web service. Existing information on other existing web sites will also be evaluated.

Description of work

Setting up existing information, making inventories of existing information on other sites, translation to English, evaluation by the different medical partners.

    This work package also includes producing a quality assurance plan, to ensure that the work of the project will produce results which are medically sound and helpful to patients.

    This work is done by all medical partners and managed by the medical co-ordinator. Appointment of medical co-ordinator will be done in the start-up meeting.

(Inter-) Dependencies, milestones and expected results

Base for WP2 and WP3.

Milestones:

    Month 2: Inventory of existing content.

    Month 4: Availability of existing content in English for evaluation.

    Month 5: Evaluation of existing content.

    Month 6: Test site using existing content.

    Month 6: Decisions on information organisation.

Expected results:

    Project agreement on quality and a demonstration site to help in developing WP2.

Deliverables

    Month 6: D1.1 Existing content evaluation.

    Month 6: D1.2 Test site using existing content.

    Month 6: D1.3 Quality assurance plan.

Workpackage Description: WP2 New Content Development First Stage

Workpackage number:	WP2	Start date:	3	End date:	12
Workpackage title:	New content development first stage				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

First stage of development of content by the medical partners, and classification and input to the data base.

Description of work

For each language region, the partners from that region will develop content. Content will be translated into English by professional translators. Informational pages will be available in XML format for easy transformation to different presentation formats. Translations from English into the languages in the project will be done by the partners in the target language region or by professional translators.

Content will be specified, classified, input and edited in a format, which is easy to understand and use also for people who are not experts on computers or XML. Such users will also easily be able to discuss and comment on proposed content from other partners. Discussions will be stored and shown to users adjacent to the informational page being discussed. The groupware tools will thus make it easy for several different people to develop each informational page together, even if they are placed at diverse geographical locations. The translations of the same informational page to different locations will also be stored adjacent to each other, so that users can easily check and discuss the content of a text as it is expressed in different languages.

The medical partners will provide and peer review new content. Translation to English will be done using professional translators, financed by the partners in the source language. Translation to other languages than English is done by the medical partners. The technical partners provide software support for these tasks.

(Inter-) Dependencies, milestones and expected results

Milestones:

Month 9: A usable service available for limited use by selected users.
Month 12: The project goes public with its first service available to everyone.
Expected results: A good and popular web site for psychological advice.

Deliverables

Month 6: D2.1 Content plan.
Month 9: D2.2 Internal service ready for user testing.
Month 12: D2.3 Public service ready and running.

Workpackage Description: WP3 New Content Development Second Stage

Workpackage number:	WP3	Start date:	12	End date:	22
Workpackage title:	New content development second stage				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

Second stage of development of content by the medical partners, and classification and input to the data base. The tasks are similar as in WP2, WP3 just adds more informational texts, especially in areas where users were not satisified with the texts from WP2.

Description of work

For each language region, the partners from that region will develop content. Content will be translated to English by professional translators, financed by the partners in the source language areas. Informational pages will be available in XML format for easy transformation to different presentation formats. Translations from English to the languages in the project will be done by the partners in the target language region or by professional translators.

This work is done by the medical partners with technical support from the technical partners.

The medical partners will provide and peer review new content. Translation to English will be done using professional translators, financed by the partners in the source language. Translation to other languages than English is done by the medical partners. The technical partners provide software support for these tasks.

(Inter-) Dependencies, milestones and expected results

Milestones:

Month 18: An extended service available to everyone.

Month 22: End of input of new content.

Expected results: A very comprehensive covering of all common questions which our users have been asking.

Deliverables

Month 18: D3.1 Second stage start of operation.

Month 22: D3.2 Report of second stage.

Workpackage Description: WP4 Usage Step-Wise Refinement

Workpackage number:	WP4	Start date:	6	End date:	24
Workpackage title:	Own content and usage step-wise refinement				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives
Improving the quality of the content by monitoring of usage and stepwise refinement.

Description of work
Usage of the content will be continuously monitored, rated by users and usage will be logged. The log will report when no answer was found to a question, or when the user was not satisfied with the answer, or when the user spent a very short time reading the answer, which might indicate low satisfaction. The content and its classification will be continuously extended based on usage experience. If a user got an unsatisfactory response, then the content and classification will be changed, so that the next user with the same question will get a good response.

   This work is done by the medical partners with technical support from the technical partners.

(Inter-) Dependencies, milestones and expected results
The experience from this stage is central to developing better content in WP2 and WP3.

Deliverables
   Month 8: D4.1 Monitoring, rating and logging plan.
   Month 14: D4.2 First report of stepwise refinement experience and results.
   Month 24: D4.3 Final report of stepwise refinement experience and results.

Workpackage Description: WP5 User Interaction Tools

Workpackage number:	WP5	Start date:	6	End date:	24
Workpackage title:	Forums, chats, ask-the-expert areas, on-line consultation services				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

User interaction services like forums, chats, ask-the-expert areas and on-line consultation services will be set up and used. The software used has been developed in previous EU-funded research projects by partners of KOM2002.

Description of work

Note: Patients, their relatives and friends can participate by using secret pseudonyms.

Forums: Non-same-time discussion groups for users and experts.

Ask-the-expert areas: Users can ask questions, and the anonymous question and the answer from an expert will be published for the benefit of other users.

On-line consultation: Users can consult with psychotherapists via e-mail and chats. E-mail and chat can be used.

This work is done by the medical partners with technical support from the technical partners. KTH (partner 1) will manage this task.

(Inter-) Dependencies, milestones and expected results

Milestones: Start of service on month 9.

The questions and user interaction will be central to input of new information to the content development in WP 2 and WP3.

An effective and popular running service in each language region should be achieved.

We will experiment with multi-language forums with automatic translation, using Systran, between language regions.

Deliverables

Month 6: D5.1 Start of service.

Month 18: D5.2 Service status and evaluation report.

Month 24: D5.3 Final report of user interaction services.

Workpackage Description: WP6 Exploitation and Dissemination

Workpackage number:	WP6	Start date:	6	End date:	24
Workpackage title:	Exploitation and dissemination				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

Getting people to use our services, and planning for continuation after end of project.

Description of work

a. Getting wide usage by providing high quality content.

b. Linking exchange agreements to enhance quality rating in search engines and getting more people to find our site.

c. Registering and promoting our web site at web portals using established search engine optimisation techniques.

d. At the initiation of the public services, some limited web advertising will be used to get the usage started.

e. Our content will be made available to commercial partners for their own services and may be marketed to non-participating partners.

f. An exploitation plan will be developed for continuation after the end of the EU-funded phase of the project.

g. Dissemination and exploitation after project end is described on page 48ff.

Medical partners will disseminate information to medical conferences and journals and through co-operation with patient organisations in their respective countries.

NetDoktor will develop the exploitation plan, aided by all the commercial partners.

(Inter-) Dependencies, milestones and expected results

Milestones:

Month 12: Start of promotion.

Expected results: We expect to get at many thousands of accesses to our web site each month, and hope to get our web sites highly rated in major web portals such as Yahoo and Google.

Deliverables

Month 9: D6.1 Preliminary exploitation and dissemination plan.
Month 16: D6.2 Report of first promotion stage.
Month 20: D6.3 Final exploitation and dissemination plan.

Workpackage Description: WP7 Evaluation and Reporting

Workpackage number:	WP7	Start date:	12	End date:	24
Workpackage title:	Final evaluation and reporting				
Participants involved: Person-months per participant:	See table Partner Personmonths in each Work Package on page 26.				

Objectives

The evaluation will use: User testing, usage statistics and usage logging to evaluate the value and quality of our services.

Two evaluations will be done in parallel, one of the usefulness of the software and one of the quality and value of the web site.

The final report will combine all the knowledge gained within KOM2002 in a comprehensive overview which can also be a base for future research in this area as well as for exploitation.

Description of work

User testing will involve people with a need for our services, such as patients and members of organisations for people with various mental disorders and will let them test our services and evaluate their usefulness.

User testing will also involve combining the usage statistics and usage and user ratings logging of our services. For example, our systems will include facilities where users can rate the quality of the results they get, how often no matching document was found, how long a user spent on viewing a result, and how often a user tried another question after seeing one answer. All this data can be combined to gain a view of how useful our services are.

See the Evaluation plan on page 17.

This work is done by all the medical partners and is co-ordinated by partner 3, Ionannina.

(Inter-) Dependencies, milestones and expected results

Evaluation depends on a working service. We will start our service for a limited set of selected users on month 9, and for external users on month 12. Some time after that will be needed to improve the service with user experience before we can do the major work of evaluation.

Expected results will be reliable information on how to run this kind of service successfully, and it will reveal when our services are useful.

Deliverables

Month 14: D7.1 Evaluation plan
Month 16: D7.2 First evaluation report
Month 24: D7.3 Final evaluation report
Month 24: D7.4 Final project report

Workpackage Description: WP8 Machine Translation

Workpackage number:	WP8	Start date:	1	End date:	24
Workpackage title:	Machine Translation				
Participants involved: Person-months per participant:					

Objectives

Creation of computerized translation technologies making it possible to present all collected information in any of the proposed languages.

Description of work

T1 : Integration of specialized dictionaries into the translation software at the start of the project. Integration of new approved dictionaries at any time.

T2 : Introduction of Machine Translation into the site

1. Creation of the multilingual access interface, link with the translation engine on line and multilingual navigation. Integration in the existing MT language pairs (EN <-> FR, GE, IT) of specialized terminology by multilingual terminology extraction from text corpora.
3. Definition of the feed-back procedure.

T3 : Semiautomatic on line terminology customization

1. Definition of the protocol for the development and validation of entries.
2. Implementation of a tool for the automatic encoding of entries and integration of the latter into the translation engine.
3. Implementation of an extraction tool for semiautomatic multilingual terminology insertion.

T4: Prototype of English to Swedish translation engine

(Inter-) Dependencies, milestones and expected results

Dependencies:

User needs

Milestones :

Machine Translation on line, Feed-back integration

Deliverables

Month 3 : D8.1 Access to the on line translation engine.

Month 12: D8.2 Prototype of the terminological workbench.

Month 14: D8.3 Integration of the specialized terminology in the existing MT language pairs.

Month 16: D8.4 Final version of the terminological workbench

Month 18: D8.5 Prototype of English to Swedish translation engine.

3.5 Deliverables List

The technical co-ordinator (Partner 2, Omega) will distribute the tasks of deliverable production and will manage their submission to the CEC. Each deliverable development is managed by its main contractor as specified in the table below.

No	Deliverable title	Main con-tractor	Con-trac-tors[2]	Date	Na-ture[3]	Dissemi-nation level[4]
D0.1	Main project website	KTH	All	3	D+R	PU
D0.2	Project presentation	KTH	All	3	D+R	PU
D8.1	Access to the on-line translation engine.	Systran	Tech.	3	D+R	PP
D0.3	Community outreach policies	KTH	All	5	R	PU
D1.1	Existing content evaluation	Ioannina	Med.	6	R	PU
D1.2	Test site using existing content	KTH	All	6	D	PP
D1.3	Quality assurance plan	ABIT	Med.	6	D	PU
D2.1	Content plan	FH NON	Med.	6	R	PP
D5.1	Start of service	KTH	All	6	D+R	PU
D4.1	Monitoring, rating and logging plan	KTH	All	8	R	PP
D0.4	Reports for the annual review	Omega	All	9[3]	R	PP
D2.2	Internal service ready for user testing	KTH	All	9	D+R	PU
D6.1	Preliminary exploitation and dissemination plan	NetDoktor	All	9	R	PP
D8.2	Prototype of the terminological workbench.	Systran	Tech.	12	D+R	PP
D2.3	Public service ready and running	KTH	All	12	D+R	PU
D8.3	Integration of the specialized terminologi in the existing MT language pairs.	Systran	All	14	D+R	PP
D7.1	Evaluation plan	Ioannina	Med.	14	R	PP
D4.2	First report of stepwise refinement experience	FH NON	All	14	R	PP
D8.4	Final version of the terminologoical workbench.	Systran	Tech.	16	D+R	PP
D7.2	First evaluation report	Ioannina	Med.	16	R	PP
D6.2	Report of first promotion stage	KTH	C3	16	R	PP
D3.1	Second stage start of operation.	KTH	All	18	D+R	PU
D5.2	Forum service status and evaluation report	Ioannina	All	18	R	PP
D8.5	Prototype of English to Swedish translation engine	Systran	6, 1	18	D+R	PP
D6.3	Final exploitation and dissemination plan	NetDoktor	All	20	R	PP
D3.2	Report of second stage	Omega	All	22	R	PP
D5.3	Final report of user interaction services	Omega	All	24	R	PU
D4.3	Final report of stepwise refinement experience	FH NON	All	24	R	PU
D7.3	Final evaluation report	Ioannina	All	24	R	PU
D7.4	Final project report	Omega	All	24	R	PU

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[2] Lead contractor in bold face, other participating contractors in regular face.
[3] Please indicate the nature of the deliverable using one of the following codes:
> **R**   =   Report
> **D**   =   Demonstrator/Prototype
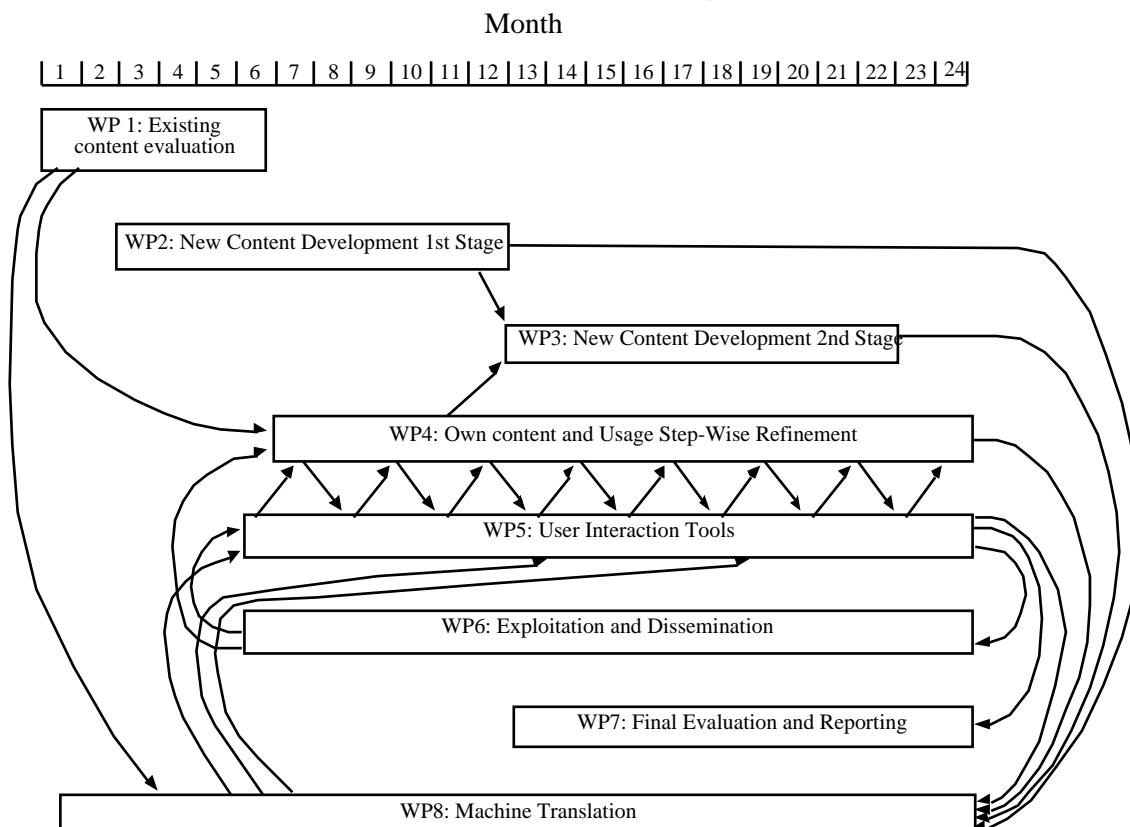> **O** =   Other
[4] Please indicate the dissemination level using one of the following codes:
> **PU** = Public
> **PP** = Restricted to other programme participants (including Commission services and project reviewers).
> **CO** = Confidential, only for members of the consortium (including Commission services and project reviewers).

3.6 Project Planning and Timetable

No.	Package / Month	First year												Second year											
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
WP0	Project co-ordination	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
WP1	Existing content evaluation	▓	▓																						
WP2	New content development first stage			▓	▓	▓	▓	▓	▓	▓	▓	▓	▓												
WP3	New content development second stage													▓	▓	▓	▓	▓	▓	▓	▓	▓	▓		
WP4	Own content and usage step-wise refinement					▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
WP5	Forums, chats, ask-the-expert areas, on-line consultation services							▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
WP6	Exploitation and dissemination	░						▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
WP7	Final evaluation and reporting												░	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
WP8	Machine translation	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓

3.7 Graphical Presentation of Project Components

Month

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |

WP 1: Existing content evaluation

WP2: New Content Development 1st Stage

WP3: New Content Development 2nd Stage

WP4: Own content and Usage Step-Wise Refinement

WP5: User Interaction Tools

WP6: Exploitation and Dissemination

WP7: Final Evaluation and Reporting

WP8: Machine Translation

Note: The circularities in this diagram can in reality be resolved. Some exploitation (WP6) is necessary to get users to WP4 and WP5, but WP6 also includes planning for project life after the end of the EU-funded period. User interaction tools (WP5) will be needed to support stepwise refinement (WP4), but user interaction tools will continue to be used throughout the project. The Machine translation task will take input from all the content production and management, and will provide input primarily to WP5. Results from WP8 will actually be made available to WP5 at several instances during the project.

4   Project Management

Managed Actions

Management involves the following project actions:

a.   Performance of work tasks
b.   Decision making
c.   Achieving consensus on medical issues
d.   Technical and user interface design issues
e.   Quality control
f.   Preparation of deliverables
g.   Peer reviewing management
h.   Preparation of reports to the CEC
i.   Planning of annual review presentations
j.   Changes in the project program and contract, if needed
k.   Other management issues requiring agreement within the project

Internal Project Working Groups

The partners intend to establish a management structure consisting of a Management Committee (MC), a Technical Committee (TC) and a Scientific (user) Committee (SC).

Management Committee (MC)

The Management committee is responsible for the approval and delivery of all detailed workplans with respect to each partner's work force allocation, and for the approval of official deliverables as well as for monitoring internal technical risks and for approval of any significant changes in the development plan and changes that affect the delivery of a contractual item to be submitted to the Commission. Each relevant decision concerning resources, rescheduling or replanning will be formalised and addressed to each Management Board member for the purpose of information or action, thus ensuring that all partners and team members are at all times fully informed. All unresolved conflicts and dispute within the consortium will be handled at the MC level. The MC intends to work by consensus, failing which a decision will be reached by voting with each contractor having one vote. In case of deadlock, the project co-ordinator can cast the tie breaking vote. Exploitation of project results is a key responsibility of the MC.

Changes to the project goals will also be handled by the MC, which will prepare contract amendments if needed. Changes to the contract need unanimous acceptance by all partners.

Membership of the MC consists of the Project Co-ordinator and one Management Representative from each partner. All official communications will be addressed to the Project Manager of each contractor. Partner Management Representatives are responsible for delivering the contribution of their organisation to each work-package and task. Each partner should also identify a specific contact person for all relevant project task areas. Note for small contractors: To reduce the number of people involved in project management and improve communications the same person can be assigned to several of these roles.

Technical Committee (TC)

The Technical Committee is the forum for discussion of technical and design issues. It is responsible to the MC for the review and approval of all technical deliverables. In addition, the TC identifies the necessity for workshops and other meetings necessary for execution of project deliverables. The TC will be chaired by the Project Technical Co-ordinator. Members of the TC will be the Work Package Leaders, plus one technical or scientific representative from any partner which is not leading a work-package. Work package leaders are responsible for delivering the results of their work package. All active developers should participate, if possible, in the technical meetings. Developers can also arrange to hold meetings for detailed technical discussions.

Scientific (User) Committee (SC)

The Scientific Committee is the forum for the discussion of medical and behavioural science issues in order to develop the joint diagnostic tools and the web based informational pages and exchange experience between experts on prevention and treatment from different countries. The SC will also oversee the evaluation work done by the medical and behavioural science partners. It will consist of all the participants from the medical partners.

Project Meetings, Communications, and Reports

Project Meetings and Communications

In order to maintain proper co-ordination we expect the MC to meet once every three to four months. TC meetings will be scheduled as necessary for proper completion of project objectives. Where possible, TC meetings will be scheduled to coincide with MC meetings. A major Management Board meeting will be held at least once prior to each Annual Project Review. Additionally, the Management Board shall meet at the request of the Project Manager or at the request of one of the partners. Also other people working on the project may attend the meetings of these Boards as non-voting participants. Additional meetings can be organised by Workpackage leaders to co-ordinate Workpackage execution as necessary.

In order to reduce overhead and travelling costs, the consortium will rely on e-mail, groupware and collaborative work spaces, etc. Tele-conferences with all partners on a regular basis may also be used to insure proper project co-ordination.

Communication Flow

The project co-ordinator will establish a secure project server with work-group capability as the central repository and access point for all internal project related information. The project co-ordinator is also responsible for maintaining the official project site, with links to regional portals.

We will experiment with use of groupware for:

a. Decision making, using a query system for measuring the views within the consortium.

b. Discussion of informational pages, using groupware systems with a separate "forum" for discussion of each informational page.

Both of these functions are already supported in the groupware which partner 1 has developed, partly funded by previous EU-funded research projects, which will be supplied to the project by partner 1.

Communication within the consortium, intended for all partners, shall be in English.

Periodic Management Reports

Partner Management Representatives are responsible for submitting Periodic Management **reports**, as well as, other reports complying with the rules set out in the contract issued through the Project Co-ordinator. All documents relating to the Management and Technical progress of the project will be written and transmitted according to a fixed standard in electronic form. All the relevant documents (Deliverables; Internal Review documents; Pictures) will be inserted in an FTP or HTTP server accessible to the authorised personnel of internetworked partners.

All payments from the EU will be made to an EURO account managed by the Project Co-ordinator. The Project Co-ordinator will send this money to the different partners as soon as it arrives. The Project Co-ordinator will, however, keep 10 % of the initial start-up payment for up to one year, and not send this to the respective partner until that partner has shown its ability and willingness to perform their tasks as specified in the contract. The project Management Committee can request the Project Co-ordinator to withhold payment or request full or partial repayment of funds if a partner does not fulfil its project obligations. The MC can then request the project co-ordinator to re-allocate returned or unallocated funds to other project partners for completing the work.

Project Reviews

External Reviews

The partners have structured the project to ensure regular completion of deliverables on a cycle in line with the External Reviews requested by the CEC. The reviews will be used as a measure of current progress and as an opportunity to verify the on-going business and technical validity of the project approach and to establish agreement on work plan revisions as necessary.

The project will also seek contact with professional and patient organisations in different European countries for information exchanges, user requirements, and input and testing of our services.

Quality Control

See page 15.

Consortium Agreement

The project management structure and processes will be further detailed in a consortium agreement to be signed by the partners before the project commences. This agreement will be based on standard CEC consortium agreements adapted to the specific needs of the KOM2002 consortium.

5 Participant List

No.	Short name	Company Name	Loc.	Profile	Role
1	KTH	KTH Technical University	SE	Technical Partner	Technology provider: Natural language processing.
S1.1	ABIT	Fabio Piccini, Italy, subcontractor to KTH	IT	Medical Partner	Information about and psychotherapeutic competence on eating disorders.
2	OG	Omega Generation SRL	IT	Technical Partner	Technology provider: integration, natural language question answering, ontology building.
3	Ioannina	Department of Psychiatry, University of Ioannina Medical School, Greece	GR	Medical Partner	Family guidance, child guidance, social psychiatry, disability assessment, epidemiology
4	Emergis	Emergis Center for Mental Healthcare, Goes, Netherlands	NE	Medical Partner	Psychotherapy (behavioural, borderline, eating disorders, PTSS, work problems, sexual problems, depression)
5	Systran	Systran S.A.	FR	Technical Partner	Machine translation technology, dictionaries to improve machine translation on mental health topics.
6	FP	Framtidspsyko-logi Stockholm handelsbolag	SE	Medical Partner	Psychotherapeutic competence in obesity and eating disorders
7	FH NON	Fachhochschule Nordostnieder-sachen	DE	Medical Partner	Psychotherapeutic competence on eating disorders, personality disorders, borderline personality disorders and ADHD.
8	Netdoktor	Netdoktor	AT, GB, DE, ES, FR IT, NO, SE	Commercial partner, ePublisher	Exploitation, providing experience in managing health information on the Internet, dissemination of KOM2002 information on the Netdoktor health information web sites in Austria, France, Germany, Italy, Spain, Sweden and the U.K.

6   List of Events

Approximate Date	Event
Month 1	Kick-off meeting, Luxembourg
Month 4	Consortium meeting
Month 7	Consortium meeting, progress meeting
Month 10	Consortium meeting
Month 13-14	Consortium meeting + progress meeting, Luxembourg
Month 13	Start of public web service
Month 14	Peer review meeting, conceration meeting and progress meeting, Luxembourg
Month 17	Project meeting
Month 22	Project meeting
Month 26	Final peer review meeting, Luxembourg

7   Contribution to Programme Objectives

Combining Public and Private Information

The object of this project is to test the KOM2002 software for use in making health information in public and private hospitals and university clinics available to the general public. KOM2002 has as partners both government medical organisations and private medical organisations with experience in providing medical information on the Internet. These organisations are committed to work together in public-private partnerships in order to produce reliable user-friendly information.

Many medical people are unable or unwilling to specify information in a format which is understandable to non-experts, but we have carefully selected partners who are willing and able to do this, and who accept the use of a language understandable to laymen, even if this language is not so scientifically precise. Most of the medical partners in KOM2002 already have successful medical information web sites.

Use of Language Technologies, Multi-Lingual and Multi-Cultural Strategies, Tools and Glossaries, Translation Memories and Terminology Collections

Several of the partners have competence in language technologies. OG and KTH have experience with natural-language processing and question-answering. SYSTRAN has experience with machine translation. All these capabilities are essential to this project.

Not only will the information developed by this project be available in multiple languages, but user interactions in forums and chats, user-expert interactions in ask-the-expert areas and expert-expert interactions within the project will be supported by language technologies including machine and manual translation of messages between major European languages.

Part of this work will result in multi-lingual glossaries, terminology collections and translation memories as extensions to the Systran machine translation system for the mental health area. The groupware to be used in KOM2002 also has facilities for organising discussions centred on terminology collections and data bases, and we will experiment with this as a novel way of combining groupware and terminology data bases.

Support for Different Platforms

The information in our data base is stored in a format based on XML, RDF and Dublin Core, and can easily be transformed to different delivery formats, such as mobile platforms and formats for access by people with disabilities. This will be used to get the widest possible accessibility to our information.

eEurope Support

Providing medical and psychological information via the Internet has, as a main advantage, that the information will be easy to find when the user needs it, and that expert information which may not be available at ordinary local health services, will be available to anyone. Thus, this project will demonstrate how eEurope support can, in many cases, have advantages over other health informational channels.

Cooperation at a European Level

KOM2002 will try out new tools designed to enhance cooperation between people when they do not meet face-to-face. Such tools are important for efficient cooperation at a European level. Examples of such tools are:

New cooperation tools, developed by one of the partners in a previous EU-funded project. These tools are based on the traditional forum software model, where information exchange is split into a number of forums, one for each topic. Each forum will keep messages belonging to that forum together, and will make it easy for users to get an overview of the discussion in that forum. News control facilities will tell each user which forums have unseen messages for that user, and what is unseen for that user in each forum. This traditional forum model will, in KOM2002, be implemented in a novel fashion. Each information text will be handled as a separate forum. Thus, medical experts can discuss each informational text in a well-organised fashion.

Multi-language support: Messages in forums will be automatically translated using Systran into all European languages offered by it (German, English, French, Portuguese, Spanish) and users will be able to choose to read messages

in any of the languages or in their preferred language. Users can always choose to read a message in its original language or in another language. For example, a user who is fluent in two languages, may prefer to get the original, untranslated version, or may prefer translations of messages originally written in other than those two languages.

Decision support: The groupware also has efficient tools for aiding decisions by giving a nuanced overview of the opinions among the experts on the issues discussed. An expert can at any time change his or her opinion, the groupware will always show the latest views. These are not meant to be used as voting tools, but to give an overview of the opinions as a basis for human decision-making.

Virtual Hospitals

Psychological guidance and counselling through the Internet is an example of the EU policy of virtual hospitals (IST programme).

Overcoming Barriers

One important barrier to providing mental health information on the Internet is the unwillingness of many medical professionals to provide information to the public. This unwillingness is caused of being afraid of liability problems and the impreciseness of non-specialist language, etc. However, in KOM2002 we have carefully selected medical partners who have, in most cases, produced mental health web pages, and have thus already successfully overcome these concerns.

Novel Methods and Structural Outcome

As described above, KOM2002 uses new methods of structuring information to give high quality and relevance to the answers produced. These methods can of course be used in many other areas than mental health, so KOM2002 will be a starting-point for a potentially huge market for provision of other public and private sector information on the Internet.

Delivery Platforms

KOM2002 uses a technology for producing information, which makes it easy to provide the same information on different platforms, such as mobile devices or devices for people with specific disabilities.

European Digital Collections

Since KOM2002 includes many partners from different countries, the combined data base for health information, which we will produce, will be the start for a combined European collection of the best health information in digital format. It can be a pilot project for similar collections in other health areas than those targeted by KOM2002.

Widely Agreed Meta-Data Formats, Localisation Support, Standardisation and Consensus Building

KOM2002 will use an XML, RDF and Dublin-Core-based data format, which we hope will be a widely agreed format for exchanging medical data. An early draft of this format was developed by one of the KOM2002 partners in the on-going SALUT IST program project.

This format, and its use together with language technologies, will support easy localisation of eContent information.

In one particular area, dealing in e-mail of translations to multiple languages, the project will also contribute to standards work and submit proposals to a suitable standards organisation, probably IETF. (For this work, travel outside Europe may be needed.)

Software Tools Supporting E-Content Internationalisation and Localisation

The groupware supplied to KOM2002 by KTH (developed in a previous EU-funded project) has special facilities for multi-lingual messages with machine and human translation, which will support e-content internationalisation and localisation, and can be used in many other subject areas than the mental health area, in which the KOM2002 will demonstrate these tools.

Dynamic and Iterative Web Sites

KOM2002 will provide dynamic web sites with ask-the-expert areas and forums and chats, natural-language question-answering, and will provide iterative web sites through the stepwise refinement process which is central to KOM2002.

8   Community Added Value and Contribution to EU Policies

European Level Advantages

KOM2002 will provide the following European level advantages:

a.   Combining knowledge in different countries to produce a synergy of higher quality. The exchange of knowledge between partners will also provide better knowledge of which psychotherapeutic approaches are best for the disorders targeted by KOM2002.

b.   Using and testing tools to support the joint development of informational pages by many experts in different countries and in different languages. These tools will include facilities to discuss each informational page in a separate area, and provide both machine translations and human translations.

c.   European health sites on the WWW are often multi-language, providing similar information to different language regions, but also adjusting the information to the different cultures and administrations in different countries.

d.   In one particular area, dealing in e-mail of translations to multiple languages, the project will also contribute to standards work and submit proposals to a suitable standards organisation, probably IETF. (For this work, travel outside Europe may be needed.)

Counselling through the Internet will allow psychotherapists/psychiatrists to provide help to patients, who speak the same language, in any location, including other countries. This will increase the possibillity for the patient to get professional help from somebody with special knowledge of the problems of the patient (such as eating disorders, etc.). It should also increase competition between professional people with consequent benefits in service quality and costs.See also the section Cooperation at a European Level on page 44.

Independent Living and Rural Areas

The availability of psychiatrists and psycho-therapists with high competence in special kinds of mental health problems, like eating disorders, is not good everywhere. The specialists can be found in isolated islands. Even among specialists in, for example, eating disorders, some are mainly specialists in the treatment of severe cases of hospitalised patients, and may not be specialists in helping less severe cases, which need different kinds of help. (It is, of course, easier to treat a patient who is hospitalised than a patient who only visits a therapist once a week.)

This means that in many areas of Europe, there is no good specialist available for the needs of a particular patient. KOM2002, however, will give equally good help to anyone with Internet access, regardless of residential area.

The advice provided by KOM2002 will also be useful for a patient who is treated by a regular therapist. If the therapist is not a specialist, the advice provided by KOM2002 can help both the patient and the therapist to solve their problems in a better way.

Medical Costs in Europe

The Treaty of the EU states that *"the Community shall contribute towards ensuring a high level of human health protection"* (article 129). The healthcare sector in EU accounts for total expenditures exceeding 520 000 000 000 Euros (more than 8 % of the GDP). To this should be added the loss of productivity and costs of sick benefits and early retirement. The proportion of GDP devoted to healthcare spending has doubled over the last three decades and is rising steadily. Public finance constraints versus the increased demand for better healthcare, new health technology, new expensive drugs, etc. is creating a large problem for all European governments.

KOM2002 will reduce this cost by dealing with problems at an earlier stage, and giving advice which can help people manage without professional health. There will also be cases where KOM2002 will increase medical costs by telling people who suffer in silence, that they should contact a psychiatrist or psychotherapist. But in that case, the health value if worth the cost.

Note also that KOM2002 will help people to live in healthier way (food, exercise, substance abuse, etc.) and this will indirectly have a large effect on health costs, since health care costs for people with harmful living habits (obesity, no exercise, excessive alcohol use, smoking and drug abuse) are nearly twice those of people living in a healthier way.

Patient Protection

Directives 95/36/EC, COM(95/0347) and COM(95/0449) are concerned with technologies for privacy of medical information and non-repudiation of what the doctor has said.

KOM2002 will use SSH encryption, anonymous participation with strict privacy rules for when the anonymity may be broken and since all web-based communication, it will ensure non-repudiation.

Directives COM(96)0581 and Final Act 97D1400 stress the importance of health monitoring and quality assurance programmes. KOM2002 will log and easily provide all information about the usage, value and quality (as rated by the users) of our services. Medical quality will also be safeguarded by peer reviewing the medical informational answers in the natural-language question-answering system.

European Competitiveness

Several studies (Forbes, IDC, CONDRINET) show that Europe, with the exception of the Scandinavian countries, is lagging behind the USA and Canada in approaching the information society. One cause of this is the language diversity in Europe. KOM2002 will demonstrate new methods of co-operation between experts speaking different languages (see page 21ff).

NetDoktor (which is a partner of KOM2002) has shown that cooperation between localized health information sites in different regions of Europe can increase the quality and make European health information providers more competitive compared with North American providers.

9   Contribution to Economic Development and Social Objectives

Note: Viability after project end is also discussed in section Viability Beyond the Project Phase on page 12.

The Product

The product of KOM2002 can be seen in two ways, each of which has its own market possibilities:

e.   an integrated set of working web-based facilities to help people get advice and help on psychological problems, adjusted to their particular needs on time.

f.   A high-quality information tool on mental health available to European citizens.

The Market for Methods and Tools

Our main goal is not to make a lot of money for ourselves, but to provide a good service to European citizens.

However, KOM2002 will open up markets in the following areas:

a.   By demonstrating the usefulness and quality of the combination of natural-language question-answering and user interaction tools, KOM2002 will demonstrate the usefulness of this technology, and will open a large market for use of the same technology for information in other areas than mental health. Note that our technology is much simpler, but not less efficient, than advanced, expensive and complex AI-based natural-language answering tools. This is because in KOM2002 the intelligence is provided by humans writing and classifying the documents, and by their interaction with users in the stepwise refinement process.

b.   By demonstrating how experts in different European countries can co-operate in developing high-quality multi-lingual content, KOM2002 will open a market for similar cooperation in other areas.

c.   KOM2002 itself will survive economically after the EU-funded phase, by continuing to provide free answers from our data base, but charging for human help and consultations.

The Health Information Market

A general problem with commercial exploitation of information on the Internet is that so much reliable information is available free of cost, that people are not willing to pay. For information sourced by the government, the intent is often to give reliable information freely to citizens, rather than selling the information.

A common, but not always successful way of selling web information is to combine it with advertisements. This method may however not be so suitable in the case of health information, because people may suspect that the aim of the information is tainted by the need to sell advertisements. An article which advises against using certain drugs, may for example make it difficult to sell advertisement space to drug companies.

In spite of all this, there are companies which have successful commercial funding of health information. One example is NetDoktor, which is a partner of KOM2002. Another example is HelpHorizons in the U.S.A. NetDoktor's commercial strategy for content combines focussed sponsorship, content syndication and provision of value-added services requiring consumer payment. HelpHorizons finances its cost by a directory of psychotherapists and by providing on-line psychotherapy through e-mail and chat from psychotherapists.

Internet Dissemination Methods

Internet dissemination methods to be used by KOM2002 are described in the section "Internet Quality and Reaching Out Plan" on page 16.

Scientific Dissemination

KOM2002 has two kinds of scientific partners: Computer science partners and medical science partners. Each will disseminate its result in its area of science. The hospital partners have good contact with universities and will be able to disseminate medical science results through them.

Scientific results of KOM2002 will be:

d.   The synergy of medical information gained by the medical partners in KOM2002.

e. Evaluation results on the usefulness of this method of providing health information on the Internet.

f. Experience with the tools of joint health information provision to be used in KOM2002.

g. Experience with the natural-language question-answering tools to be used in KOM2002.

h. Experience with the multi-lingual forum systems with automatic translation to be used in KOM2002.

Exploitation by Partners

NetDoktor is one of the largest European health information providers on the Internet with localized presence in nine leading Internet markets: United Kingdom, Germany, Austria, Denmark, Norway, Sweden, France, Italy and Spain. They are thus the ideal partner for a successful exploitation of the health information developed by KOM2002.

Omega Generation is a successful software provider with particular experience in Internet-based solutions for local governments. Since the tools produced by KOM2002 are ideal for high-quality information from government to citizens, Omega Generation can disseminate these tools not only in the mental health area, but also in many other areas of use.

Systran is the leading European provider of machine translation software. They can exploit the results of KOM2002 in the area of multi-lingual e-mail and multi-lingual forums and chats.

KTH will continue to run the KOM2002 services after the end of the EU-funded period unless/until they are taken over by a commercial partner.

All the medical partners are able to continue maintenance of the information after project end. Note that most of the medical partners were already developers and maintainers of mental health information on the Internet even before the start of KOM2002, thus they have already found ways of funding such work. For example, their employer, if a public health organisation, may allow them to continue to provide information on the WWW because this is part of the tasks of their employer. Alternatively, these people may be willing to contribute free time, either for charity or because it creates goodwill for themselves.

KOM2002 will give such partners new opportunities for providing more and better health information in cooperation with partners in other countries. They are thus committed to continue, after the end of the EU-funded period, even if the amount of time they can spend will of course depend on whether funding can be found.

Some of the medical partners of KOM2002 will participate in on-line counselling, and such a service can be financed by patient fees (paid by the patients themselves or by their insurance companies).

Exploitation Summary

To achieve these market objectives, the commercial partners of KOM2002 will prepare an exploitation plan combining:

a. Exploitation in existing services provided by the commercial partners.

b. Exploitation by expansion to other health areas than those covered by the present project.

c. Exploitation by selling the technology to other organisations, both public and private, which need to provide intelligent answers to questions from their customers.

The chances of success for this exploitation plan are increased by the fact that KOM2002 has several commercial partners who are already successful in this area.

Business Plan

The project aims at producing a complete business plan, addressing:

a. IPR and consortium agreement.

b. Product definition.

c. Customer identification.

d. Analysis of competition and market position.

e. Marketing and sales strategy and organisation.

f. Quantifiable business goals.

Social Perspectives, Quality of Life and Effects on Productivity and Competitiveness of Europe, Effect on Employment

This project will have a major impact on the quality of life of European citizens by helping many more people to get psychotherapeutic/-psychiatric advice ion time and at low cost.

The project will also have a considerable impact on productivity, since psychological problems are a major cause of unfitness, unemployment and difficulties in coping with life's problems. Considering that the cost of loss of production because of mental problems within EU countries is 70 000 000 000 Euros/year and the cost of loss of production because of obesity and unhealthy life styles is more than 30 000 000 000 Euros/year, even a small impact on these losses will provide a gain in productivity of many millions of Euros/year.

To this should be added the reduced costs for both medical treatment and pharmaceuticals. Finally, the increase in happiness and quality of life, something which cannot be estimated in Euros but is still a very important value of our web site.

Using our web site, citizens will easily and immediately get qualified medical advice on many of the most common psychological problems. These will be provided by a large data base of stored answers, a question-answering system which will find the right answer to each question in more than 90 % of the cases, and access to answers by human psychotherapists/psychiatrists when the stored answer did not suffice. The stepwise refinement process will cause a continuous increase in the frequency of the stored answers providing an answer which the user finds highly relevant, intelligent and useful. Even though our software does not do any advanced artificial intelligence processing, the stepwise refinement will give users the impression that the computer does intelligently understand them.

Medical professionals will get more time to help those patients who require professional help, if they are relieved from having to spend time giving routine advice which our web site can give through the Internet.

Software Impact on Productivity and Competitiveness

The experience with using the software to be used in KOM2002 will open up markets for developing quality information by experts in different European countries in other areas than those mental health areas, which are targeted by KOM2002. This will permit better co-working by European experts in many other areas, and will increase the competitiveness of European organisations.

Digital Content Market

The technology demonstrated by KOM2002 can be used to develop high quality information in any subject area, and thus contribute to opening many different digital content markets.

Export Potential

At present, much more information on the Internet is imported into Europe (mainly from North America) than exported. KOM2002 can redress this balance by providing tools for European professionals to produce higher quality multi-lingual information.

Ethics

KOM2002 will develop strict ethical guidelines for development of information which has high quality. None of the KOM2002 partners will provide information tainted by their affiliation to a drug company or health food provider.

Note that high quality does not only mean providing correct information, but also providing useful information, which will help people to achieve a better life. In general, we do not think there is a conflict between these two quality measures, but a balance must be found between requirements for 100 % scientifically proven information and information based on the experience collected by psychotherapists in their work with patients.

More information about medical quality standards to be used in KOM2002 can be found in the section Medical Quality on page 15.