Project annual public report

Project acronym: MORMED

Project title: Multilingual Organic Information Management in the Medical Domain

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Project website address: http://www.mormed.eu

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The rationale of MORMED

The broad adoption of Web 2.0 technologies led to the emergence of a new kind of applications, services and tools that focus on and promote information sharing and openness, active participation and collaboration, social networking and enhanced user experience on the Web. People demonstrate a trend of sharing experiences and data with a "crowd" of individuals, with the aim to harness the collective wisdom supported by intelligent technologies (content recommendation, shared bookmarks, social search, semantic structures) at the benefit of reaching knowledge.

Web 2.0 applications seem to have contributed towards bringing geographically dispersed groups of people with common interests together. Even in such circumstances though, the requisite for expressing in a common language seems to be restricting: people not conversant in that common language could find themselves

excluded. This issue may become a burden to the effective dissemination of valuable knowledge among dispersed medical communities interested in topics where information is scarce, such as rare diseases.

MORMED attempts to address this problem by developing a multilingual social networking and content management platform. MORMED (Multilingual Organic Information Management in the Medical Domain) aspires to address all the dimensions of Web 2.0. The developing platform is aimed at promoting online collaboration and diffusion of knowledge within online communities, while transcending geographical and language barriers. This is achieved by combining a semantically-enhanced social networking and content management platform with technologies enabling machine translation and post-editing by human experts to make content available in multiple languages. MORMED will be piloted in a community interested in Lupus or Antiphospholipid Syndrome (Hughes Syndrome), involving researchers, medical doctors, general practitioners, patients and patient support groups.
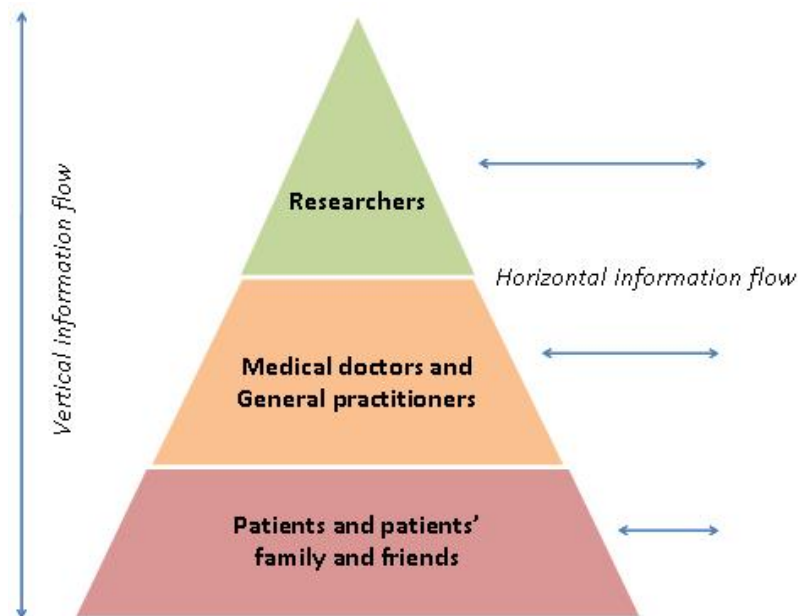

Figure 1: MORMED Target Users

Goals and Objectives

The main goal of the MORMED project is to establish and offer a multilingual thematic community platform for rare diseases as a service to groups of interested users.

The main objectives of MORMED are to:

- Integrate and deploy a multilingual thematic community platform for rare diseases which will promote information exchange and social networking.

- Make existing content accessible via this platform and stimulate new, user generated content.

- Use existing linguistic resources to improve the automated translation quality.

- Test and assess the platform by evaluating the experiences of users involved in the rare diseases domain, using various languages (e.g. English, Spanish, German and Hungarian).

The project integrates results from the OrganiK[1] project with backend translation tools provided by the SME partner Language Technology Centre (LTC). Technically, the project combine a semantic Web 2.0 knowledge management platform with advanced automatic translation tools in order to support information exchange and to bridge language barriers. System architecture and integration aim at providing an open platform, based on open standards that is extensible and scalable, and applicable to different market areas.

Therefore, the system which is at a mature stage of developed consists of the following main components:

1. The OrganiK platform

2. The multilingual production system operating in the background: LTC Communicator

The OrganiK platform is a next generation knowledge management system that manages and promotes social structures. OrganiK combines social software applications and semantic technology. This includes social software applications (i.e. Wiki, Blog and Microblogging work spaces, collaborative bookmarking application, search component), enhanced with semantic technologies (i.e. semantic search capability, recommender system, content and user behaviour analyser, collaborative filtering engine, etc). The translation tools are based on LTC Communicator, a workflow system incorporating translation tools and machine translation.

In order for the system integration to be successful, the technical partners of the project brought together discrete systems utilising a variety of techniques such as computer networking, enterprise application integration, business process management and / or manual programming. The MORMED platform, which integrates various systems, is organised within three architectural elements as described below:

- The business or functional architecture layer, which defines the rules and processes of the platform. In other words, this layer is a conceptual description of the platform use from the users' point of view (see Figure 2) as described in the requirements analysis deliverable.

- The application architecture layer, in which the technical implementation of the above rules takes place. This layer consists of the glue that binds together the functional logic of the system and the application components of the

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[1] Seventh Framework Programme, Research for the Benefit of SMEs, Grant agreement no.: 2222225

system. This layer describes the connection between the systems used for the realisation of the MORMED platform: OrganiK, LTC Communicator and Machine Translation Tools.

- The technology architecture layer, in which the information and communication infrastructure is defined, together with the infrastructure technologies used. The conceptual architecture of MORMED, which will result from the integration of the OrganiK platform and LTC Communicator, is illustrated in the figure below.
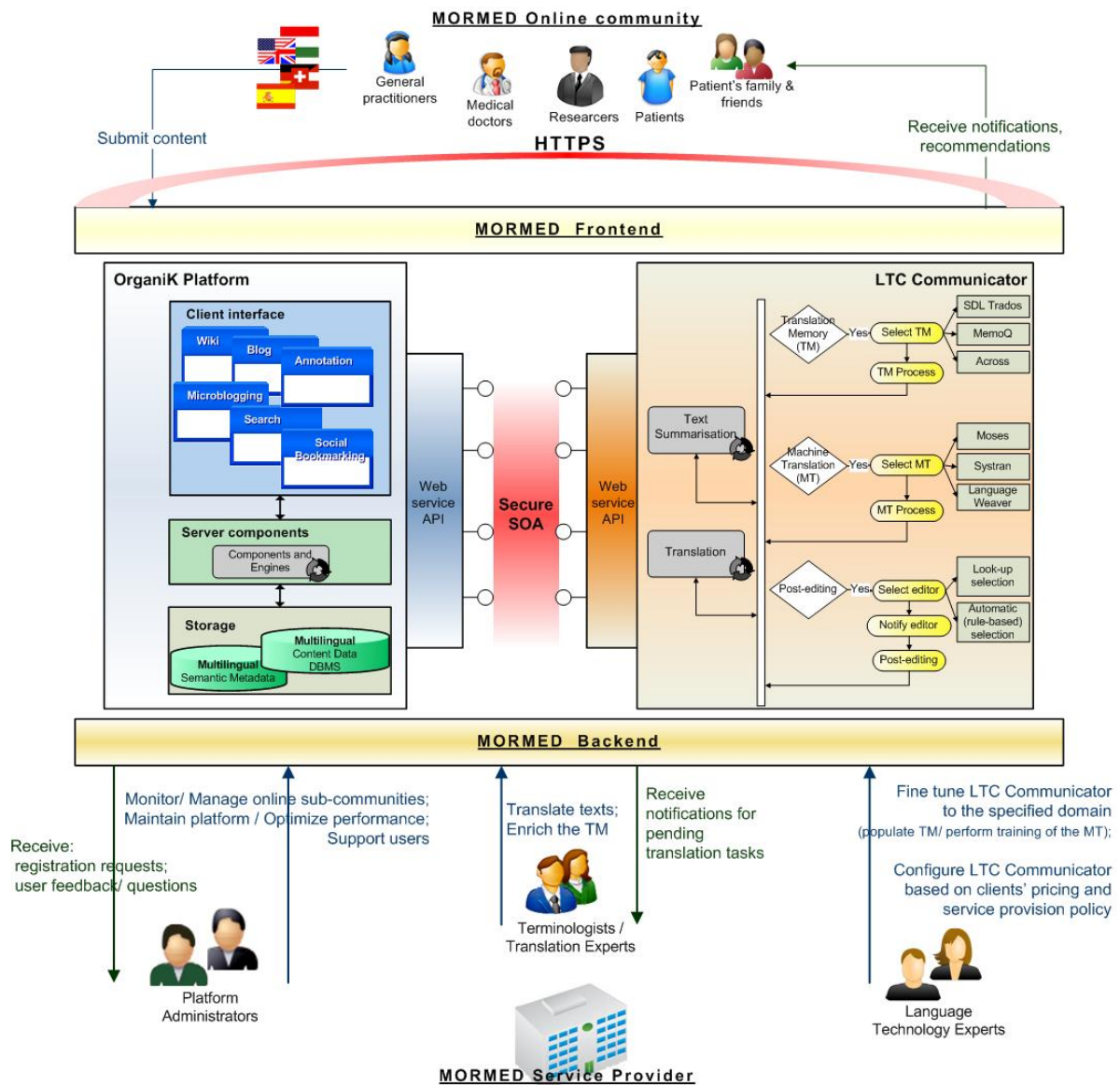

Figure 2: MORMED Architecture

MORMED Innovation Points

The innovation points introduced by MORMED concern mostly the enhancement of the user experience for people participating in multilingual thematic communities who

collaborate, create, consume and share information, as well as the opportunities for new business directions that may possibly emerge for LTC, the service provider.

On one hand and as far as the added value on the user experience is concerned, MORMED provides the opportunity to individuals who belong to specific thematic communities to benefit from translated informal information and ad-hoc knowledge exchange. Instead of focusing on translating formal documents and texts, the MORMED platform acts as a central translation hub for informal content, mostly written in simple everyday language, created by various individuals sharing a common interest (in our pilot case, the community interested in Lupus disease and Hughes Syndrome). On the end-user level, this leads to features that are in their integrality not found in today's social networking platforms. Such features are based on the accommodation and combination of several, and possibly uncommon, languages, and refer to the quality and ability to seamlessly present any information in the user's own native language, as well as support information search and pull across all multilingual content available in the platform.

Further on the advancement of the user experience, MORMED offers the possibility for contributing user feedback and input in several ways, via blogs, wikis, forums, or bookmarks, and handles efficiently the aggregation and presentation of any information. The option of automatically translating any piece of information to the desired language further leads to enriching the knowledge base with new content and further enhancing the performance and accuracy of the translation tools.

Although MORMED is a fully automated system with minimised reliance on human translators, human translators can support the process. For users who require a translation of publishable quality, rather than just an intelligible result, a revision of the translation by translation professionals employed by the service provider can be included.

Finally, MORMED reveals further business opportunities for the service provider. LTC can leverage MORMED to build experience, extend its know-how and enhance the performance of the machine translation tools. LTC is expected to gain insight and specialise in supporting efficiently the translation of informal texts, such as those produced by people in social networking sites, or even of very short and semantically condensed texts, such as microblogging posts (e.g. status updates). This know-how could then be materialised and be offered as a complementary service to social networking platforms wishing to support the seamless communication and information sharing between people not conversant in the same language.

Work done and achievements

Works have been focusing on the realisation of the MORMED platform, starting with the definition of the MORMED architecture (specification of components, APIs, etc), the customisation and localisation of the user interfaces, the adaptation and integration of components, and the final testing/bug-fixing and deployment of the MORMED platform. The system is being tested by the technical partners and the roll-out procedure is at a mature stage.

Furthermore, work has been active on updating and fine-tuning of linguistic resources and translation technologies. The consortium continues to actively collecting, validating, and where necessary manually enriching the multilingual content that is essential for the training and contextualisation of the underlying machine translation technology to the domain of the MORMED platform.

Moreover, the definition of service use evaluation criteria took place during the third six-month period of the MORMED project. The partners involved defined the criteria to be used for the assessment of the service covering technical, business and user experience issues. End-users provided feedback to technical partners.

Concerning Project Management activities, the project coordinator (SEERC) continues to enact its role by focusing more on the administrative and financial management of the project, while the technical coordinator LTC is guiding the technological development activities.

Finally, the project partners have been active on commencing exploitation and dissemination activities within work package 6 (Exploitation and Dissemination). In particular, certain dissemination activities took place (i.e. conference attendances, workshops, flyers, etc) and first thoughts on how to best exploit the outcomes of the project were underpinned. Furthermore, the website of MORMED project was redesigned. Finally, LTC has promoted collaboration with the thematic network on the topic of multilingual content and services, to explore synergies and pursue common goals to the greatest extent possible.

To date, a number of patient associations have been contacted and made familiar with the MORMED project; the table below lists some of the associations that have been contacted: more than 30

The website and other exploitation material encourage the reader to enter their contact details at the website to be included in an external mailing list which keeps them informed about the latest results and news about the MORMED project.

All of the project's partners have been active on exploitation and dissemination activities. Towards this end project partners have created the project's public web site (http://www.mormed.eu/) which contains information about the objectives of the project, partners profiles, generic approach, technologies used, contact details, news items, etc. An indicative and non-exhaustive list of dissemination activities is the following:

- XXXI Congreso Nacional de la Sociedad Española de Medicina Interna (SEMI); II Congreso Ibérico de Medicina Interna; VII Congreso de la Sociedad Asturiana de Medicina Interna, 17-20 November 2010, Oviedo (Spain).
- II Jornadas de Enfermedades Autoinmunes Sistémicas La Paz, 10-11 December 2010, Madrid (Spain).
- GTH[2], 16-19 February 2011, Wiesbaden (Germany).
- 8th Annual World Health Care Congress 2011, 4-6 April 2011, Washington DC.
- European Lupus Meeting, 6-9 April 2011, Porto (Portugal), attended by KCL.

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[2] GTH – Gesellschaft für Thrombose-und Haemostaseforschung

- 8th Annual World Health Care Congress Europe 2011, 13-14 April 2011, Brussels.
- Annual Congress of the Hungarian Society of Allergology and Clinical Immunology, 12-14 May 2011, Balatonalmádi (Hungary).
- EAMT 2011 conference, 30 – 31 May 2011, Leuven (Belgium), attended by LTC. Following acceptance for a call for EU projects, a presentation about MORMED was given and a poster was displayed.
- X National Lupus Conference 2011, 7-8 May 2011, Granada, Spain.
- WIrE, 7-9 June 2011, Debrecen Hungary.
- Localisation World Conference, 14-16 June 2011, Barcelona,.
- META-NET FORUM 2011 – Solutions for Multilingual Europe, 27 – 28 June 2011, Budapest, Hungary. The MORMED poster was displayed at the EU projects exhibition.
- Invited keynote speech, in Technology Enhanced learning in Medical Education, that was organised within CBMS 2011 in Bristol UK June 27-30 2011.

Conferences to be attended:
- Annual Meeting of the Hungarian Society of Nephrology November 2011, Hungary
- Translating and the Computer, November 2011, London
- Annual Congress of the Hungarian Society of Internal Medicine, December 2011

Following the initial kick-off meeting which was held at SEERC's premises in Thessaloniki in March 2010 the following meetings took place:
- August 2010: Medical partners telephone conference
- December 2010: Consortium meeting at LTC's premises in Kingston
- February 2011: Medical partners telephone conference
- April 2011: Project review meeting in Luxembourg
- September 2011: Consortium meeting at MHSC's premises in Debrecen

MORMED Flyer

MorMed
multi-lingual & organic information management
in the medical domain

MORMED is a partly EU-funded project aimed at the development of a multilingual community platform combining **Web 2.0** social software applications with semantic interpretation of content relevant to the medical domain. To encourage information exchange between users in different countries and languages, the platform will be enhanced with an **automated translation** backend.

The **MORMED** platform will be piloted in the community interested in **Lupus** or the **Antiphospholipid Syndrome** (Hughes Syndrome), involving researchers, general practitioners, specialists, patients and patient support groups. The platform will be made available in due course to interested parties in other medical domains.

*Please visit **www.mormed.eu** for more information and register to receive updates on the progress of the project.*

PARTNERS INVOLVED

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SOUTH-EAST EUROPEAN RESEARCH CENTRE — SEERC

KING'S College LONDON

LTC

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MORMED Poster