“European Waste Sector Assistant - EUWAS” –
Implementation of a web-based Knowledge Management System for
the European Waste Sector

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Abstract

The use of online platforms for specialist knowledge management and networking purposes is still very rare especially in medium-sized companies and on local and regional level in public administration, in most cases even non existent. The project „European Waste Sector Assistant – EUWAS” is a European approach to introduce a web-based platform for the needs of specialists in the waste sector. It combines the collection of structured information and available data sources with the idea of an expert system. The platform, which aims at supporting respective employees directly within their work environments, thus reveals aspects of „Online Communities“ and „Virtual Communities of Knowledge“.

1. Introduction

EUWAS is one of the projects chosen for funding under the EU programme eContent and is conducted for 24 months until the end of 2006 with partners from Poland, Lithuania, Estonia, Latvia and Germany (for further administrative information see www.euwas.org). The objective of the project is to contribute to an efficient use of existing data for effective information and knowledge transfer in the waste management sector. EUWAS aims at supporting the necessary structuring, processing and presentation of data and information in the waste sector. By the end of the project a multilingual (English, German, Polish, Lithuanian, Latvian, Estonian) internet portal consisting of 5 functional tools with waste-related services and a “Training Kit” that will comprise supportive “step-by-step guides” and single “eLearning” units will be implemented (see chapter “Portal structure”). The future users will find structured data, information and training tools designed by standards of the European training market that will improve the experts’ basis for decisions as they obtain support in structuring, processing and presentation of data.

EUWAS thus contributes to Europe’s Information Society industry where services and products based on digital contents are playing an increasingly important role. The sheer size of the economic value of public sector information (PSI) in the European Union shows the potential of this area. The project EUWAS meets the challenge to make efficient cross-boarder use of this fundamental, but under-exploited knowledge.

2. Definitions and objectives

In many countries of the European Union including the new member countries in Central and Eastern Europe, numerous reliable and extensive data pools exist. Nevertheless the undocumented existence of these databases leads to their non-appropriate use in different administrative and executive planning and

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monitoring bodies thus missing out the chance of creating added value. The number of heterogeneous, complex and widely spread databases and the lack of transparent data structures as well as the non-existence of metadata complicate their efficient use. Furthermore the existing data in most cases is not ready to be used in functional work processes.

This unsatisfying status quo constituted the guideline to develop and structure the idea of the project EUWAS. The project is defined as a web-based Information-, Communication and Learning portal that mainly provides the future users (clients) with structured expert data and respective waste-relevant functionalities for training-on-the-job measures that fit well in the clients’ work environments and their textual work demands. Web-based Information-, Communication and Learning portals are determined by their functions to offer and transfer information and knowledge in an information-network and facilitate the personal exchange of expert knowledge and experience as well as of structured (e)Learning materials. The offered waste-relevant functionalities comprise logic operations that lead to a better understanding either of the data(streams) or the respective workflows and thus create added value for the clients. These functionalities focus on the demands of waste management services and the organisations concerned.

**EUWAS thus focuses on**

- provision of public and private actors in the European Union countries with well-structured, user-friendly prepared data and with up to date information on all relevant aspects of waste management.
- its contribution to further education in the waste management sector in two ways: as an Information, Communication and Learning platform for the practical needs of the employees within their work setting and secondly as an important source of information that can be used in traditional seminars and trainings.
- establishing partnerships between public sector bodies and private companies. The consortium\(^3\) of this project reflects very well this attempt. The integration of public entities ensures the quality and the supply of data which is inevitable for its appropriate re-use, the private organisations ensure the development of marketable products.

3. **Added value for the target groups**

EUWAS will provide the staff of environmental authorities and companies in the involved European countries with concrete assistance that reveals high relevance for their daily work. Furthermore the shared use of EUWAS by private and public stakeholders will bring public and private organisations closer to each other and produce win-win-relations.

One further significant advantage of EUWAS is the fact that it will offer independent information on different aspects of waste management which is reflected by its network function and the possibility to link and incorporate numerous independent sources of information.

The portal mainly addresses:

- Companies from the waste management sector: waste disposal companies, companies for logistic planning, specific consultants

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• Public entities: 
municipalities, municipal authorities, regional and national authorities related to waste management, federal agencies and institutions
• Further entities: 
universities, institutions for training and further education, chambers of commerce, regional and national associations dealing with waste management, business schools, private academies and other stakeholders

The added value resulting from the availability of data in a processed form and the accessibility of structured information can be summarised as the following:

• One stop solution – users can gain insight into a wide range of information covering various aspects of the waste sector by means of one portal
• Customer oriented structuring of publicly available information
• Up to date information on waste data and EU and national policies
• Detailed search mechanism especially tailored to waste management issues (European, national and regional level)
• Personalised search and communication functions
• User friendly preparation of information and help functions like step by step guide, Recommendations and Guidance

4 EUWAS Portal

The EUWAS portal is the gateway for users to exploit their specific fields of interest and gain information pertaining their practical needs or make use of specialised training offers.

4.1 Portal Structure

The portal comprises different accesses to information embedded in practical work processes which are offered in Tools for different waste related fields, custom tailored with user friendly navigation. Additionally the portal offers further elements as for example the open the access to all necessary legislative information. Each offered element is connected textually with other parts of the portal in order to create a structured non-redundant network of information. Besides the mentioned structures the portal supplies the user with a “Training Kit” which comprises selected “step-by-step guides” and selected “eLearning modules”. The portal offers on each level custom tailored information in English and in further languages based on the nationalities of the current project group. Besides the Tools and the “Training Kit”, typical portal elements such as glossary, fora, condition of use, help desk, etc. exist on the portal.

The users can choose between different navigation layers. All interesting parties have direct access to the first levels of the EUWAS portal. Access to specific level navigation, depends on the users personal access controlled by a “role concept”. The “role concept” in the “MyEUWAS log-in” allows the portal administrator to make certain information and Tools only available for specific user groups. For example, the “role concept” allows one SME to register only for special elements and to get access to all stored and linked relevant information and self-services of e.g. Tool C, whereas another user can have access to Tool C and additionally book a training unit of the “Training Kit”. Depending on the individual personalisation users can make use of a separate overview page where it is possible to access the elements that they have subscribed to. For faster access, their favourite elements will be displayed in a navigation box.
4 Structure of Elements

The elements being offered present selected requested information and guidance assigned to special practical and thematic tasks as well as typical and necessary information for portal use and navigation. Elements are structured into *Tools* which provide the user with partly interactive features based on structured data of publicly available data, three further elements provide the necessary background know how for the *Tool*, the “*Training Kit*” supports interactive learning and know how transfer and further standard elements for navigation and using the portal (*Conditions for use, Helpdesk, MyEUWAS log in,…*)

**Tools**

The *Tools* being offered focus on supporting and improving technical and organisational standards of waste management services through the simplified access and the user-friendly processing of data. Each of the *Tools* intends to provide the user with specialised services and methods for practical use in waste management based on an elaborated market analysis. The set of *Tools* comprises the following:

- **Tool A**: „*Virtual supplier and partner forum*“ acts as an information- and service platform for various users involved in waste disposal and treatment matters. It enables the user to present and to search for company products and portfolios and provides the opportunity to find partners for joint projects.
- **Tool B**: „*Tender Information*“ comprises the provision of public tender information across borders to assist public and private stakeholders in preparing applications/tenders or calls for tenders and supplies structured guidelines to facilitate the procedure of applications and preparations for calls for tenders.
• Tool C: „Best Practice / Best-Available Technology (BAT) Information“ provides a user friendly structured selection and preparation of publicly available technologies based on European standard and best practices which can help the user in decision making for planning of regional or local waste management processes and for evaluating technologies compared to BAT.

• Tool D: „Waste Management Services“ provides a structured selection of relevant publicly available national and European data and databases taking into account the European Waste Catalogue (EWC) and a user friendly structured preparation of waste management procedures to assist enterprises and public authorities on local and regional level in their daily work (e.g. approval procedures, waste management plans)

• Tool E: „Logistics“ focuses on two main aspects, a functioning web-based system for logistic planning and logistic survey in the waste management sector, and the presentation of general information, existing web-based examples and learning material.

Further elements
Complementary to the basic structure the platform EUWAS offers three further elements which provide all Tools with basic information like a reference book in the field of waste management. These elements are content specific: 1. Legislation, Waste Policies and Strategies, 2. Financing and Funding Support and 3. Projects (closed projects and ongoing projects).

Training Kit
Using the “Training Kit“ the users have the possibility to acquire know-how and to learn more about organisation of processes. Within the e-learning module, a selected thematic module will be prepared interactively based on the demand of an evaluated market analysis. Step-by-step guides describe every step within a selected workflow (e.g. creating waste management plans, applying for a tender) with explanatory information prepared user friendly.

All elements are interconnected to guarantee a direct and fast access to necessary information and to offer a one stop solution on one portal.

4.3 Web Services
The requirements for the planned application are to connect different high-grade databases. Web services act as a tool for communication between different applications. They use standard-internet-protocols (http, smtp and ftp) to interact with one another. To avoid an interruption of communication by means of e.g. firewall. Web services are based on XML formats as a standard for information exchange. The portal EUWAS will be based on an open standard integration interface to connect different databases of the environmental sector. The technical core of the project consists of the implementation of a processing engine that will be equipped with the ability to search for the required information within the tools according to the inquiry of the future user. The required data will be processed within the tools to present them in logic contexts. The application framework holds the ability to process and deliver data.