

Web Content Management System of MODULARTE

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ABSTRACT

Web Content management system applications that are commonly used for the studies over web provide many advantages for building up the content, searching, interrogating, controlling, issuing and integrating the information. Multi-aspect transnational projects should involve the management structure that contains the above requirements. In this paper, information about the developed Web Content Management system for MODULARTE will be given in some details. The parts, structure and operating principles of the management system operated behind the visible web-site has been designed in a very flexible way. The flexible structure has been established for providing the multi-language support on the contents and enabling the change of the content by a network connected computer upon request. A part from this, the persons making such alterations in the content were assumed not to have detailed technical capability on web operations. In MODULARTE project, a management system has been achieved by separating the information submitted on the web-site and presentation of this information form each other.

1. INTRODUCTION

1.1. Web Content Management System (WCMS)

A content management system (CMS) makes it possible to create, archive, search, control and publish information from within a flexible and integrated environment (Burzagli, Billi, Gabbanini, Graziani & Palchetti, 2004). Content Management Systems (abbr. CMS) have evolved from existing systems. The content in CMS is parted into the physically displayable raw content and its – separately stored – layout. The layout itself consists of two parts. On the one hand there is general information like the requested document type. This information is called structure. On the other hand more detailed information like fonts, colors, borders etc. is needed. This is called the display format and is usually stored in templates or style sheets.

Especially WCMS (W stands for Web), usually they are implemented using scripting languages like PHP. This makes them really flexible regarding extensibility (Bergstedt *et al.* 2003). Vidgen, Goodwin and Barnes (2001) mentioned the following antecedents and enablers of web content management: document management, workflow integration, customer relationship management, e-commerce, software configuration management and data management. All these disciplines are covered in web content management.

WCM is primarily a process, not a product, and we define it as ‘an organizational process, aided by software tool, for the management of heterogeneous content on the web, encompassing a life cycle that runs from creation to destruction’ (Goodwin and Vidgen 2002).

McKeever (2003) defines web content management systems as follows: “A WCM system consists of the software tool(s) used to provide the automated support of WCM activities”, where web content management “incorporates the activities involved in the creation and deployment of digital content to Web based audiences, where these audiences may consist of customers, suppliers, partners and staff accessing the web content via extranet, internet, or intranet”. This definition is adopted, but adjusted slightly. The part “accessing the web content via extranet, internet or intranet” is omitted. The reason for this is that not all web content management systems are web-based. Examples are Vignette and Microsoft CMS server, for which a software program needs to be installed. In this work a web content management systems is defined as “a system for the automated support of activities involved in the creation and deployment of digital content to web-based audiences, where these audiences may consist of customers, suppliers, partners or staff”.

1.2. Project Management Structure

By an active information system, all processes of the production can be controlled and the quality control of the completed product can be performed entirely by the management of the persons, equipments and materials. Currently, the great proportion of the companies has the structure that allows sharing of information and access to information in different functions basing on their distributed organizational structure and network technologies. The virtual companies that are cooperated along geographically distributed areas are still in need of a multi-media information management that provides access to many data resources by means of Intranet, Extranet and even Internet. (Yitmen ve Dikbaş, 2002).

1.3. European Pilot Projects and MODULARTE

Pilot projects within the framework of European Education and Training Program can be involved in the long term and multi-national projects. In these regards, a significant labor is required for the evaluation, monitoring and recording of all academic, administrative, financial activities in the process. Even an interrogation among these data can take a lot of time and lead to a large study. In this context, if CMS is used for conducting such projects, it can provide a certain contribution to the success of the project particularly at the stage of dissemination and valorization.

This specific CMS has been developed for the management of the Leonardo da Vinci Pilot Project entitled “**New Approach in Technology Training Development and Integration of European Modules in TE**”. There were 7 partners in the project. The project contractor was the Gazi University (Turkey) and the other partners were from Germany, Bulgaria, Italy, Spain, Greece and Czech Republic. The platform structure is aimed be used as the common study area of the whole partnership (MODULARTE, 2007). This developed structure has been ensured to have the language support of the all involved countries in the partnership. Within this means, all necessary information has been structured and correlated in a database to provide the exposition both in English and the native language of the partner country. The main page and the login page of the web-site is shown in Fig. 1.

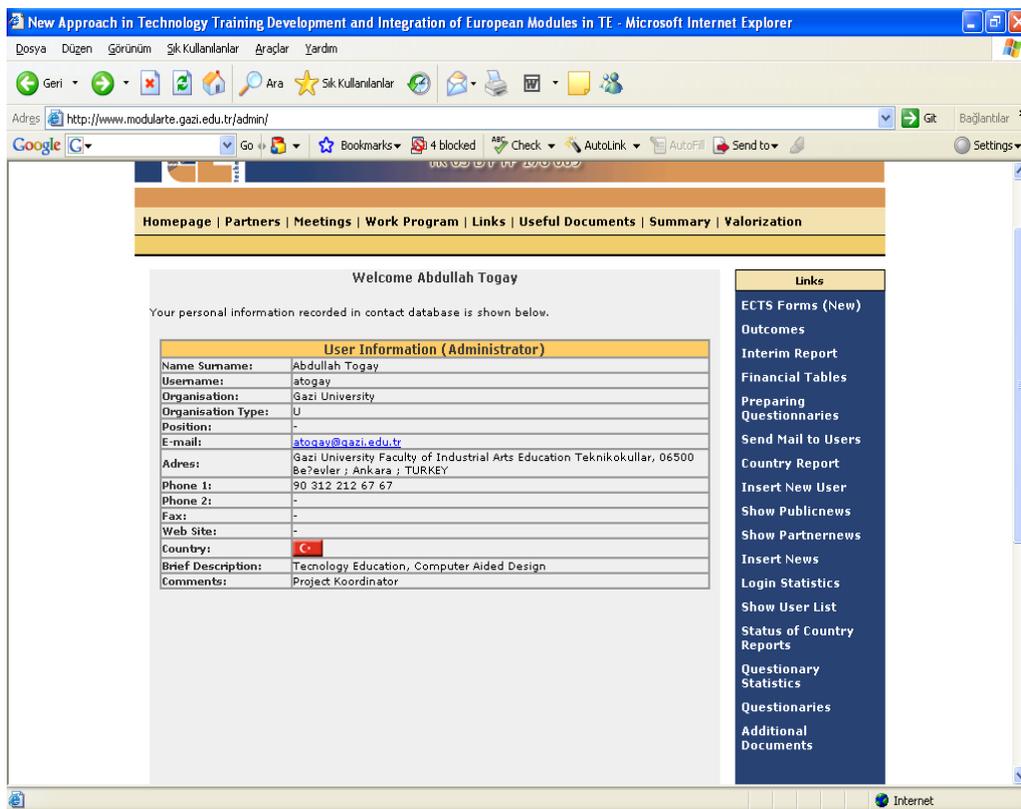


Figure 1. Homepage of the project web-site and login page

To re-structure the site design for each involved partner and create sub-pages corresponds to an excessive workload. In this case, another difficulty arises for the realization of the each design by the partner itself. For this reason, the all information in the web-site was stored in an appropriate database providing a multi-language support. The presentation of this information has been designed in a standard manner for each involved country by using template files. By clicking on the flag of the partner country on the main page, the related information from the database is brought and presented to the users by locating the information into template files. This is the main frame of the developed web content management system.

2. ARCHITECTURE OF THE DEVELOPED SYSTEM

Particularly, to make an alteration in the web-sites having frequent updates or wide contents by CMS, it sufficient to change the related information in the related database for changing the content of the page. Within this context, the web-site can be updated and developed rapidly and easily. Similarly, if an alteration will be made in the general view of the site, this is done only once in the structure of the page. Thus, once you make an alteration, this affects the unlimited number of pages and makes the necessary changes also in these pages. The structure of the system is explained below.

2.1. General Structure of the System

The system is operated in the web-server of Gazi University (Modularte-1, 2006). Linux operating system and Apache software were installed on the web-server. All programming infrastructure of the system was developed by using PHP script programming language. MySQL server was used as database. In general, the system stores the whole project information in the database as seen in Fig. 2 and presents it to the users by the developed programs and templates.

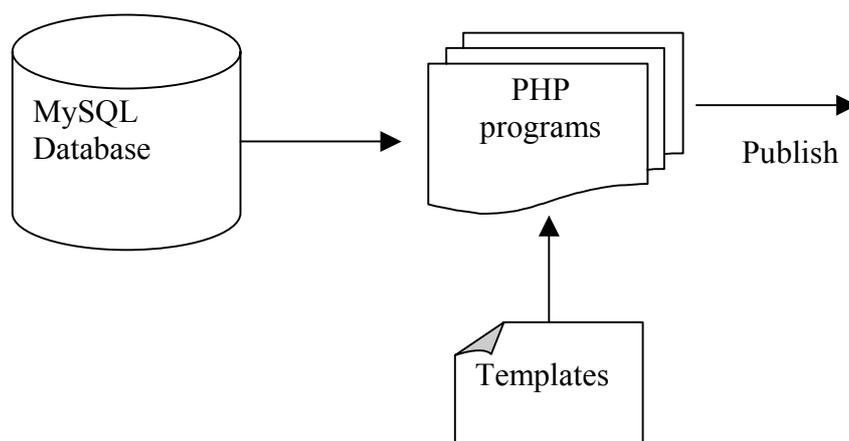


Figure 2: General Structure of the system

2.2. Information flow to the system

The users determined by the promoter and the partners of the project record the information to the developed system as shown in Fig. 3. All information input on the system are monitored and controlled by the administrators. The information is transferred into the web-site after the approval of the administrators.

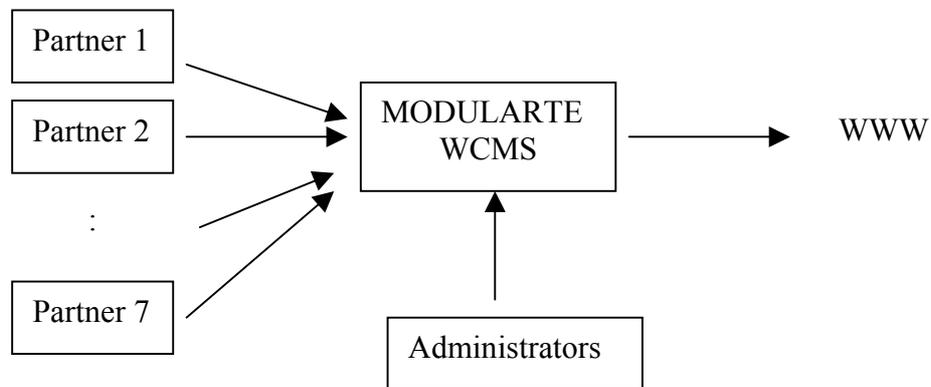


Figure 3: Information flow to the system

2.3. Users of the system

Six different types of users were defined (Fig. 3) inside system. The authorities of these user types are different from each other. Hierarchically, super administrators have the highest authority level and recorded users for the feedbacks and questionnaires have the lowest authority level.

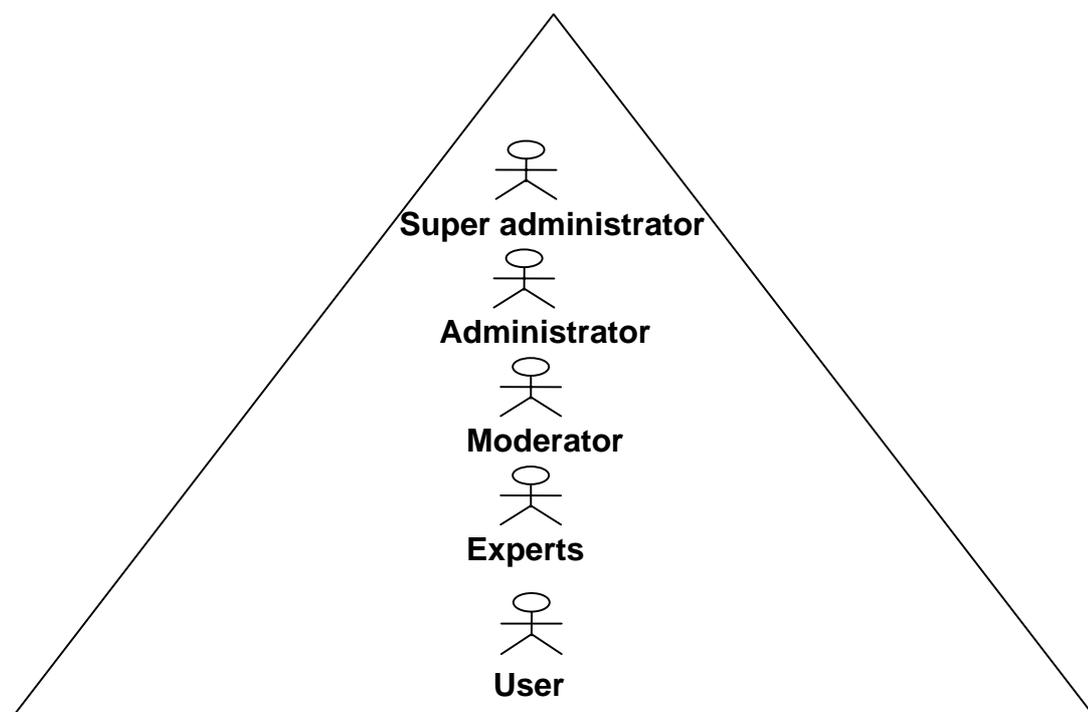


Figure 3: User types and pyramid of authorization

2.4. Protected Modules of the System

The protected sites can be accessed by clicking on the “login” button on the right side of the specific Project web-site (Fig. 1). After logging into the protected site, a menu will be appeared on the right-hand side (under the links heading) including the protected items and the products. These items are as follows:

- a) ECTS Forms
- b) Outcomes
- c) Interim Report
- d) Financial Tables
- e) Preparing Questionnaires
- f) Send mail to users
- g) Country report
- h) Insert new user
- i) Show public news
- j) Show partner news
- k) Insert news
- l) Login statistics
- m) Show user list
- n) Status of Country Reports
- o) Questionnaire Statistics
- p) Questionnaires

The capabilities of the users concerning the above items are indicated in Table 1.

Table 1: User Capabilities

User Types	Capabilities
Super Administrator	They have the all rights in the system. They have the authorities to monitor, edit and delete the whole information of the partnership in a, b, c, d, e, f, g, h, I, j, k, l, m, n, o, p modules. This user type is defined only for project coordinator and technical system administrators.
Administrator	The highest level of users in the partners. They can be able to monitor, edit and delete the information belonging to their countries in a, b, c, d, e, f, g, h modules.
Moderator	This type of users was defined to assist the administrators. They can be able to operate in the authority zone of the administrators except deleting.
Experts	This type of users was defined only to monitor the system. They can only monitor the area defined for super administrator without making any operation on the information.
User	These are recorded into the system by the administrators and moderators. They can only fill out the questionnaires defined on the system and have no access to the protected information.

The brief explanation of the above mentioned items are given below respectively.

a) ECTS Forms

ECTS forms menu includes the details of the modules and the detailed descriptions of the courses in these modules. All the course definitions are both in English and in the native languages of the partner countries. To see the whole list of the courses “course description” icon should be clicked on (Fig. 4). On the screen, the whole list of the modules and the names

of the courses inside the modules can be seen. Two magnifying glass symbols beside each course are presented. Clicking on the first magnifying glass gives the ECTS course description in native language and the second magnifying glass gives the same course definition in English language. By clicking on the flags of the partner countries on the top of the page, access to the native versions of the all courses again in the same style can be provided. This is one of the main products of the project as declared in the project proposal.



Figure 4: A partial view from ECTS Pages

b) Outcomes

The Outcomes link allows includes the two training tools obtained by the partnership as well as the DEMO versions of the training materials and the modular structure. This page provides a direct link to the training tools developed by the Czech and Bulgarian partners. A part from this DEMO version of the CDs for the training materials regarding Energy Transformation and Information and Communication have been also located under this link.

c) Interim Report

This link includes the whole version of the project interim report that was submitted to the National Agency in November, 2006.

d) Financial Tables

The financial reporting of the Project has been fulfilled online as of June 2006. Thus, the partners have inserted their costs to this part in every three months period. Then these costs were checked by the promoter and the necessary corrections were made together with the related partner institute. After the checking process, the copies of the evidence documents were sent to the promoter. The system monitors all the expenditures of the partners individually as well as the total expenditure of the whole Project together with the official amendments.

When the “Financial Tables” icon is clicked on a new page will be appeared on the screen and you the cost items (staff, travel and subsistence, subcontracting etc.) are seen on the right menu. The overview of the whole budgets and bank transfers can also be seen under different headings. If you click on the “list” button in one of the cost items you can be able to list the relevant partner’s expenditures regarding these items (Fig. 5). Expenditures of the any partner can be observed by clicking on the flags of the partner countries above the table. The whole expenditure of the project divided into different items can be seen by clicking on the MODULARTE logo at the end of the flags of the partner countries above the table.

The partners can be able to add new expenditures by clicking on the add button just beside the related cost item. This tool provided time and labour saving for the whole partnership. The format is thoroughly consistent for the interim and final reporting of the European Commission.

The screenshot displays a web-based financial reporting tool. At the top, there are flags for Turkey, Czech Republic, Germany, Hungary, Spain, France, and the European Union. The main content area is divided into three sections: 'Table G.1: Budget Overview', 'Amendments', and 'Amended Budget Overview'. To the right, there is a vertical navigation menu with buttons for 'Back', 'Go Back', 'Finance Tables', 'Overview', and 'Amendments'.

Table G.1: Budget Overview

	Contractual Budget (Euro)	Leonardo da Vinci Grant (Euro)	Expenditure Realised (Euro)
A. Staff Costs	31.592,00	20.912,00	30.716,23
B. Operating Costs			
1. Travel	5.308,00	5.308,00	3.143,96
2. ICT	2.386,00	2.386,00	2.366,11
3. Production	1.250,00	1.250,00	1.446,49
4. Overheads	2.870,00	0,00	2.870,00
5. Other	2.870,00	2.870,00	2.870,00
Sub-Total B	14.684,00	11.814,00	12.696,56
C. Subcontracting Costs			
Subcontracting Costs	2.174,00	2.174,00	1.450,00
TOTAL	48.450,00	34.900,00	44.862,79

Amendments

Reason	Date	From--->To	Amount
To cover the increased amounts for the production of informative brochures and other dissemination documents.	2007-09-16	Travel--->Production	200,00
TOTAL			200,00

Amended Budget Overview

	Contractual Budget (Euro)	Leonardo da Vinci Grant (Euro)	Expenditure Realised (Euro)
A. Staff Costs	31.592,00	20.912,00	30.716,23
B. Operating Costs			
1. Travel	5.308,00	5.108,00	3.143,96
2. ICT	2.386,00	2.386,00	2.366,11
3. Production	1.250,00	1.450,00	1.446,49

Navigation Menu:

- Back
 - Go Back
- Finance Tables
 - Staff Cost [Add-List]
 - Travel Cost [Add-List]
 - ICT(a) Cost [Add-List]
 - ICT(b) Cost [Add-List]
 - ICT(c) Cost [Add-List]
 - Prod. Cost [Add-List]
 - Other Cost [Add-List]
 - Sub. Cost [Add-List]
 - Overh. Cost [Add-List]
- Overview
 - Budget
 - Add Bank Transfers
 - Usage Budget
- Amendments
 - New Amendments
 - List Amendments

Figure 5: A partial view from online financial pages

e) Preparing Questionnaires

This tool has been used online while preparing the Questionnaires in the WP3. The English version of the questionnaires under 7 headings (total of 94 questions) has been prepared by the promoting institute and located to this part so as to provide partners to make the online translations of the questions into their native languages (Fig. 6). Clicking on the flags avails to see the translations in partner country languages. The first step involves the translation of the questionnaire headings and the second step involves the translation of the 94 questions into native languages. When, the translation process has been finished, an e-mail has been sent to the contact database of each county simultaneously via. online mailing system of the web-server. In this mail, they were required to fill the questionnaires on the web-site by logging into the web-site as a user. In the same mail their usernames and password were also sent automatically.

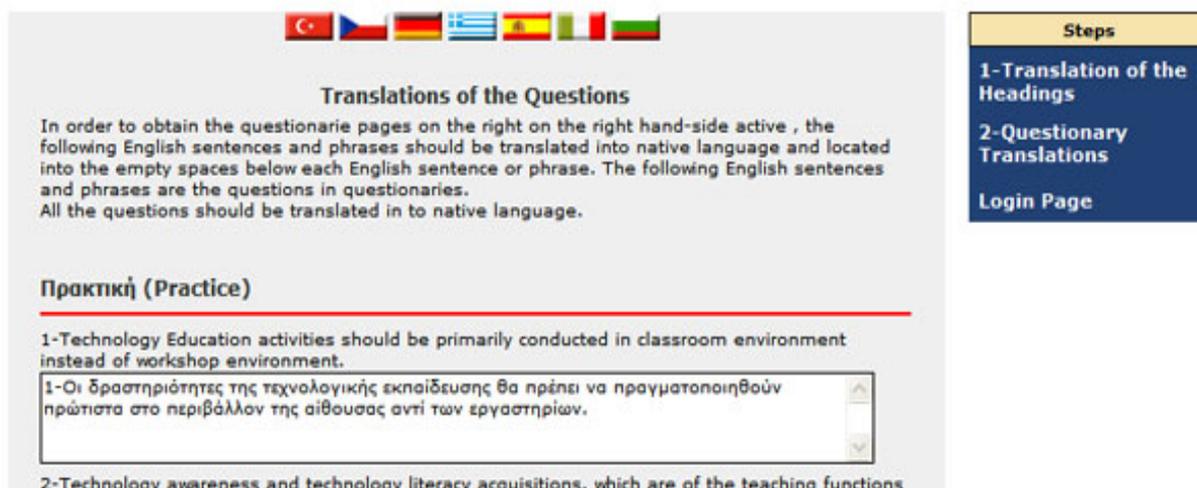


Figure 6: A partial View from online translation of questionnaires

f) Send mail to users

This tool has been established for sending mails to the members of the contact database of each partner country. The administrators were authorised to use this tool for contacting with their contact databases. The super administrator can send mails to all users of the partners whereas the administrators can send mails only to their own contact databases. When “send mail to users” is clicked on a message board is be appeared. This tool has been primarily established for contacting the contact database members in order to inform them about the availability of the questionnaires on the protected part of the web-site and invite them to fill the questionnaires by logging into the site. The system also distinguishes the contact database users who have not filled the questionnaires thus for the second time the administrators can send message to these persons by selecting “the persons who have not filled the questionnaires” item in the “To” section. The country selection part is only available for the super administrator. The promoter can send messages to the administrators, moderators or users of the all partner countries. As mentioned before, the partner administrators can send messages only to their own contact database thus country selection is not available on their message boards.

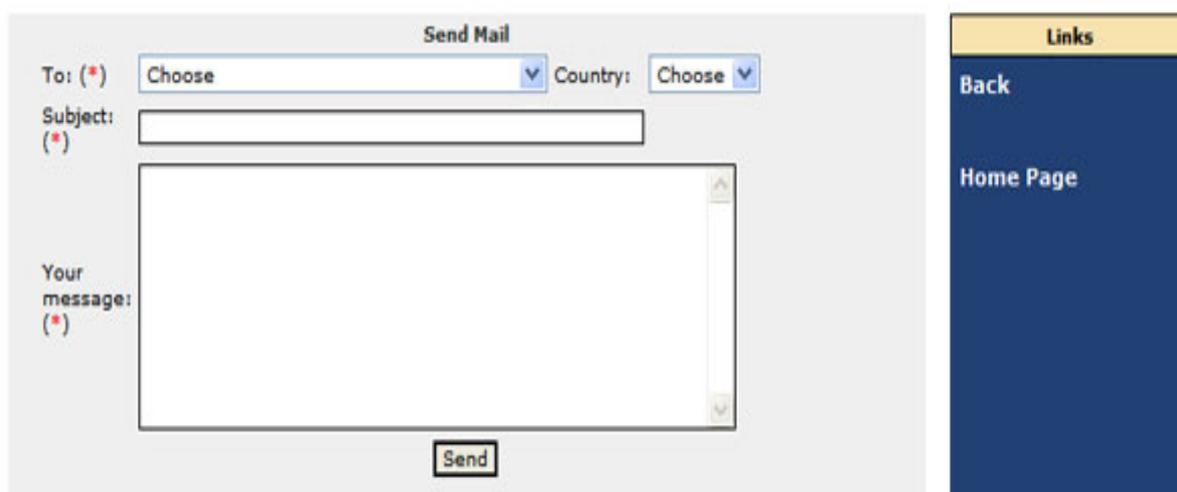


Figure 7: A view of send mail page

g) Country Report

This tool has been created for the preparation of the detailed country reports of the partner countries which are one of the interim results of the Project at the end of WP3 (Modularte-2, 2006). The details of the tool can be seen by clicking on this icon. However, the country reports of the all partner countries can be seen by clicking on the “**Status of Country Reports**” icon on the right menu (this is available only for the super administrators)

The country reports have been prepared both in English and in the native language of the partner country. The tool is also prepared by considering this point (Fig. 8). It consists of three main parts as Schools, Teacher Training and Chart-legislations. The brief information about the Country Report Tool is given below according to the main headings and sub-headings.

Schools

- **Add school type:** In this section, the school types belonging to the national formal education system (i.e. primary school, secondary school, post-secondary school, vocational school etc.) that has technology education /design and technology / technology /techniques or equivalent courses in their curriculum can be added by filling the required items. These courses reflect the technological and technical processes and can be located under different names in the curricula of the school.
- **School types:** Lists the school types that have been added up to that time. If a change is required, edit or delete buttons can be used.
- **Add Course:** In this section, the names, aims and the learning fields of the relevant technology education / technology design and technology / techniques etc... or equivalent courses that are in the curricula of different school types (in the national formal education system) that have been specified previously are defined. The menu extends for the details of the course including the details of the units and the applications in the units.
- **Courses:** Lists the courses that have been added up to that time. If a change is required edit or delete buttons can be used.
- **Background:** In this section, details about the evolution of the technology education/ technology/ design and technology/ techniques or equivalent courses in the school types that has been previously defined are given. From the choose section, the all school types that have been previously defined can be seen. The background information of the technology/technology education/design and technology/ techniques or equivalent courses respectively for each previously defined school type should be given here individually. You can choose the school type and write the background information on the page that will be automatically created after you choose the school type. After you write the background information and click the save button, the information you have given will be saved on the system. If you want to edit the information you have previously given, you have to choose the same school type again and the page including the previous information will be appeared on the screen again.

Teacher Training

- **Current Status:** The question “Are there any specific Departments and/or Programs for graduating technology education /design and technology /technology /techniques or equivalent teacher in your country” should be replied as yes or no. Basing on the answer of this question the system orients two different paths.
- **Add Program:** If the current status question is replied as yes, in this section, it is requested to give the details of the specific technology education /technology /design and technology /techniques or equivalent teacher education programs in the partner country. If there are several different programs to be used around the country, the most common or appropriate 3 programs should be selected by making separate entries from the "Add Program" button on the right menu. The requested questions about the details of the program should be replied here.
- **Programs:** Lists the teacher training programs that you have been added up to that time. If a change is required edit or delete buttons can be used.
- **Add Course:** In this section, the details of the curricula of the specific Technology Education /Technology /Design and Technology /Techniques or Equivalent Programs that has been previously specified should be given. The fields shown on that page are for the details of a individual course in the curriculum. While adding a course, you have to choose the program you are adding the related course. Once, the details of an individual course is finished and saved, the system will automatically orientates to the list of courses that have been inserted up to that time. You can edit the information of a previously inserted course by using the edit button under the operation column.
- **Courses:** Lists the courses in each previously teacher training programs that you have been added up to that time. If a change is required edit or delete buttons can be used.
- **Background:** In this section, details about the background of the Technology Teacher Training or Equivalent Programs in the partner country should be given. Basing on the teacher training programs specified previously, the initialisation and the key modifications made to the program until now should be explained.

Chart and Legislations

- In the first part of this section, the standard chart indicating the whole formal national education system of the partner country should be loaded. The chart should be both in English and in native language and should be loaded as a jpeg file. Y axis of the chart should be the increasing ages.
- In the second part of this section the teacher training system in the partner country as a whole should be explained. Also significant and characteristic legislations and regulations of the teacher training system in the partner country should be cited together with the specific differences and similarities of the teacher training system with other European Countries.

Translations of the Headings and Sub-Headings

In order to make the country report menu on the right hand-side active and start to record the requested items for the country report, the following English sentences and phrases should be translated into native language and located into the empty spaces below each English sentence or phrase. The following English sentences and phrases are the headings and sub-headings of the individual items in the whole country report format.

The country report database is created to write the required information both in English and in native language. Thus, the headings you have translated will be automatically located as the headings or sub-headings of the related parts that will be written in native language.

Please read the English sentence or phrase carefully and write the exact translation of them on the corresponding spaces just under the each individual sentence or phrase. When you have translated all items and phrases click on the save button at the end of the page. The system will not permit you to save even if you have not translated only one sentence or phrase. After you have finished the process and save it, you will see that the right menu is active.

1

THE SCHOOL TYPES THAT TECHNOLOGY / DESIGN and TECHNOLOGY / TECHNOLOGY EDUCATION / TECHNICS or EQUIVALENT COURSES are TAUGHT

Teknoloji/Tasarım ve Teknoloji/Teknoloji Eğitimi/Teknik veya Eşdeğer Derslerin Ulusal Resmi Eğitim Sisteminde Okutulduğu Okul Tipleri

Age Group :
Yaş grubu :

General Name:
Genel Adı:

Aims and Role:
Amaçları ve Eğitim Sistemindeki Rolü:

Certificate Entitlement:
Diplomanın sağladığı geçişler:

2

CURRENT TECHNOLOGY EDUCATION / DESIGN and TECHNOLOGY / TECHNOLOGY / TECHNICS or

Back

Go Back

Headings

Translations of the Headings and Sub-headings

Schools

Add School Type

School Types

Add Course

Courses

Background

Teacher Training

Current Status

Add Program

Programs

Add Course

Courses

Background

Chart-Legislations

Chart & Legislations

Figure 8: A partial view of Country Report Preparation Pages

h) Insert new user

All partner country administrators can add new persons to their contact databases by clicking on this icon. When they click on this icon, a page will appear and when the required information is written and the “save” button on the bottom is clicked, the new user is added to the relevant country’s contact database (Fig. 9).

i) Show public news

This icon is used to search the public news that is located to the web site up to this time.

j) Show partner news

This icon is used to search the partner news (the content of this news are protected and can be seen only by the partner administrators) that is located to the web site up to this time.

k) Insert news

This icon is used when the promoter wants to add public or partner news to the web-site. The type of the news can be selected in the message board (Fig. 10). When the promoter adds a partner or public news to the web-site, an automatic mail is sent to the administrators of the partners indicating that “a new news has been added to the web-site” so that the partners can pay necessary attention to the news.

The screenshot shows a web form titled "User Information" with the following fields: Name, Surname (*), User Name (*), User Type (dropdown menu with "User" selected), Password (*), Password (Again)(*), Organisation (*), Organisation Type (dropdown menu with "PME" selected), Position, E-Mail (*), Phone 1 (*), Phone 2, Fax, Web Site, Adress (*), Brief Description, and Comments. An "Insert" button is located at the bottom of the form. A sidebar on the right titled "Links" contains buttons for "Back" and "Home Page". A note at the bottom left states "(*)Field has to filled".

Figure 9: The view of insert new user page

The screenshot shows a web form titled "News Information" with radio buttons for "Public News" (selected) and "Partner News". The form includes fields for Title, Short Content, Full Content, and Date (pre-filled with "2007-12-26"). An "Insert" button is at the bottom. A sidebar on the right titled "Links" contains buttons for "Back(Public News)", "Back(Partner News)", and "Home Page".

Figure 10: A View of Insert News Page

1) Login statistics

This tool is used as an internal monitoring tool of the promoter. By this tool, we can be able to see the total login statistics of the admins and users in the partner countries as well as the latest logins of the partners. There is also a possibility to see the today's logins (Fig. 11).

User List (Total=60)		
Name	Org.	E-Mail
E H. GÜDÜ YAVUZCAN	Gazi University	gyavuzcan@gazi.edu.tr
E Katerina Nevrlova	EUROFACE Limited Company	management@euro-face.cz
E Muhammet Yorulmaz	Baskent University	muhammed@baskent.edu.tr

Links

Most login users

Last date of users

Today's logins

Login Page

Figure 11: A partial view of login statistics' pages

m) Show user list

When this icon is clicked on, the contact database users of the partner countries can be seen individually. By clicking on the flags of the countries on the top of the page the recorded contact database users of the partner countries can be visible. Total number of the contact database is mentioned on the top of the each country page. The system also automatically identifies the persons that has filled out the Questionnaires and indicates it in the right column of the database list (Fig. 12). One can identify, green as the person who have filled the all questionnaires (number 7 inside the green colour means the total number of filled questionnaires), red as the person who have not filled out any of the questionnaires (number is 0) and the yellow as the person that has partially filled out the questionnaire (the number of questionnaires filled is indicated inside the yellow colour).



User List (Total=EL,45)					
Name	Org.	E-Mail	Telephone	Count of filled quest.	Operation
Maria Dalaka	Technological Center of Research and VET	dalaka@geo.edu.gr	+30 2410 553 203	7	(Can't modify)
Olga Tzemou	23o Primary School of Nikaia - Piraeus	giangnag@yahoo.gr	210 4921520	0	✕
Achilleas Mitilis	18o Primary school of Piraeus	mitil200@yahoo.gr	210 4921520	0	✕
Georgios Statoris	Primary school of Nikaia	s35tatir@yahoo.gr	2410 921002	0	✕
	Technological Education		+30 2410	7	✕

Figure 12: A partial view of user list page

n) Status of Country Reports

This the tool to observe the progress of the country reports of all partner countries. All given information from the countries are collected here as a tool. This is one of the interim products of the Project. When “Status of Country Reports” icon is clicked on, the flags of the partner countries are seen on separate page in the screen. Clicking on the flags individually, one can be able to monitor the country report items as forms, schools, courses, school background, chart and legislations, status, teacher programs, teacher courses, formation, formation courses. By clicking on the each item and sub-items that appears on the screen (operation, units etc.), the details of the country reports can be observed.

o) Questionnaire Statistics

By clicking on this icon, one can be able to observe the rate of replies to the individual questions of the questionnaires separated into seven main categories (Fig. 13). It is designed basing on the observation of the results of the seven partner countries individually. The total analysis can be seen by clicking on the MODULARTE logo at the end of the partner country flags. The Questionnaire Statistics is one of the products of the Project as mentioned in the Project Proposal.

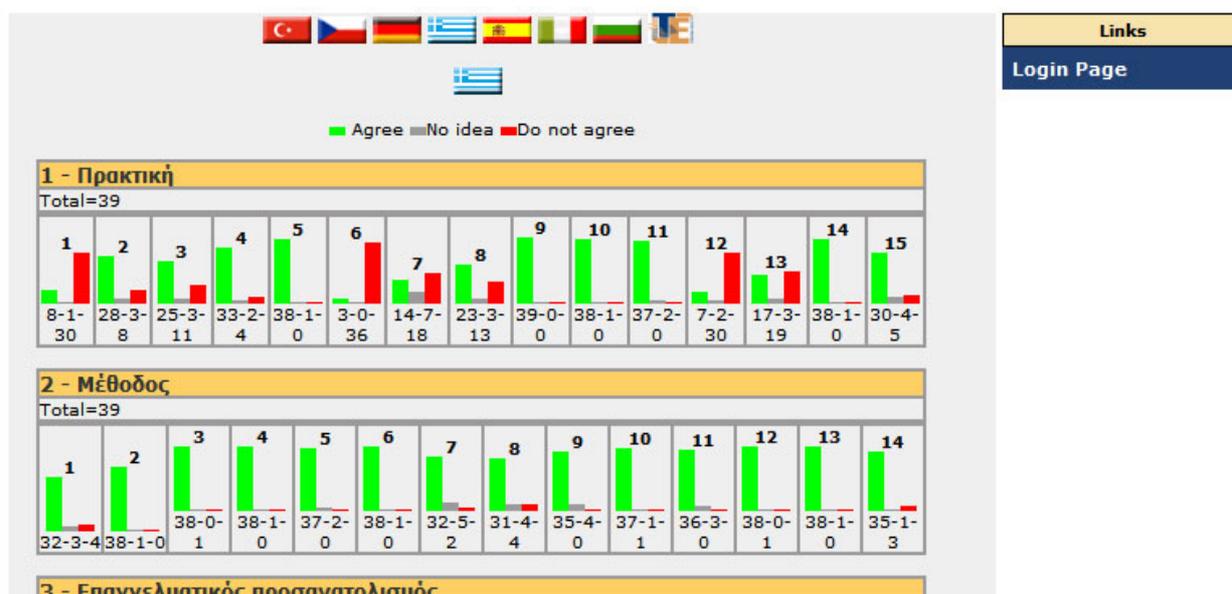


Figure 13: A partial view of Greek questionnaire results page

p) Questionnaires:

The completed full versions of the questionnaires can be seen by clicking on this icon. It is the fixed form of the questionnaires ready to be applied to the contact database. By clicking on the “Questionnaires” icon, seven questionnaires will be appeared on the top of the page by symbols. The users of the contact database also see this part in order to fill out the questionnaires (Fig. 14). Starting from the first to the last, they can open the questionnaires

and reply them online. When they finish each questionnaire and press the “save” button at the end of the page, the results are automatically transferred into the system to make the statistical evaluation. The questions in the questionnaires are presented both in the native language and in English (in brackets). In this part, you can only see the Turkish-English version of the questionnaires.

Program (Program)				
No:	Görüş (Opinion)	Kabliyorum (Agree)	Fikrim yok (No idea)	Kabliyorum (Do not agree)
1	Teknoloji Eğitimi öğretmen yetiştirme programı "Elektrik-Elektronik " öğrenme alanlarını içermelidir. (A Technology Education teacher raising program should contain fields of learning "Electric-Electronic".)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	Teknoloji Eğitimi öğretmen yetiştirme programı "Bilgisayar " öğrenme alanlarını içermelidir. (A Technology Education teacher raising program should contain fields of learning "Computer ".)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3	Teknoloji Eğitimi öğretmen yetiştirme programı "Kumanda " öğrenme alanlarını içermelidir. (A Technology Education teacher raising program should contain fields of learning "Control".)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 14: A partial view of the Questionnaire applied to Turkish contact database

In addition to those mentioned above, the system provides the cross-comparison and documentation of the country reports. The link that provides this facility is mentioned below: <http://www.modularte.gazi.edu.tr/admin/report1.php>

When this reporting link is activated, a page containing the all items of the country reports will be appeared on the screen (Fig. 15). One can report the data in anyway he wishes by this facility. He can report the information under the requested subjects and countries or provide a comparison of several countries for the selected items. The system avails to take a report of one country or report of the comparison of the countries in several aspects. For this issue, you have to select the country/countries of which you want to get the report on the top of the screen. You can also select the language as the native language or English. Both languages are available on the system. After making the necessary selections on the reporting items and clicking on the “send” button at the end of the page, the reporting and/or the cross comparison will be appeared on the screen in a printing format (Fig. 16). The country reports of the all countries consists hundreds of pages.

This is a very valuable reporting system to obtain the required data of the individual partner country or make the cross comparison of the countries with respect to different subjects.

Select country: TR BG EL DE IT ES CZ

Select language: English

THE SCHOOL TYPES THAT TECHNOLOGY / DESIGN and TECHNOLOGY / TECHNOLOGY EDUCATION / TECHNICS or EQUIVALENT COURSES are TAUGHT

Age Group :

General Name:

Aims and Role:

Certificate Entitlement:

CURRENT TECHNOLOGY EDUCATION / DESIGN and TECHNOLOGY/ TECHNOLOGY / TECHNICS or EQUIVALENT COURSES in DIFFERENT SCHOOL TYPES

School:

Age:

Number of units:

Hours/Week:

Compulsory or optional:

State:

Full name of the course:

Basic and specific aims of the course:

Learning Fields:

UNITS of the CURRENT COURSES

Unit no:

Number of applications /focus studies:

Links
[Login Page](#)

Fig. 15. Sample selection of countries and items for comparison reporting

 THE SCHOOL TYPES THAT TECHNOLOGY / DESIGN and TECHNOLOGY / TECHNOLOGY EDUCATION / TECHNICS or EQUIVALENT COURSES are TAUGHT Age Group :11-14 General Name: Low secondary Schools Technology Education Aims and Role: Low secondary school: Technology education From ministerial programme (D.M. 9 feb. 1979): "A complete form of culture has to comprehend the possession of productive abilities which give the possibility to participate to work , to think over the productive problems and to solve it in order to choose among different solutions the best thing to do from a political, economic and productive point of view. Lower secondary education is fully comprehensive, that is, there are no separate schools for students with different levels of ability; neither are there different types of schools for different groups of students (differentiated by sex, religion, curriculum etc.), although private institutions may be denominational. The scuola media provides three years' full-time general education and some pre-vocational guidance through a common curriculum and in a single cycle Since the 1999/2000 school year, compulsory education in Italy has lasted for nine years, from age 6 to age 15 (previously compulsory education ended at age 14). This means that students completing the scuola media (at age 14) have to stay on in school for the first year of the upper secondary scuola superiore According to the Moratti reform , now suspended, the study path still lasts 16 years and is completed when students are 19 years old. The reform split the schools in two, introducing the concept of dual channel, one propaedeutic to university and the other one terminal: technical, classical and scientific lycuums for 5 years with access to university; professional schools duration of 4 years with no access to university, formally defined as "terminal school". In addition to that the professional schools will have a different time system: 75% of hours in classes, 25% apprenticeship at private companies Some aspects of national indications about I.e. II year and III year low of secondary	 THE SCHOOL TYPES THAT TECHNOLOGY / DESIGN and TECHNOLOGY / TECHNOLOGY EDUCATION / TECHNICS or EQUIVALENT COURSES are TAUGHT Age Group :6-12 General Name: Primary School Aims and Role: The Primary school belongs to the Compulsory Education. Attendance is compulsory and lasts six years, from the age of 6 to 12. The basic aim of the Primary school is to ensure the children's all-round, harmonious and balanced mental and physical growth. Such that, regardless of sex or origin, they have an opportunity to develop their personalities and live a creative life. Certificate Entitlement: Pupils in Primary school are promoted from one class to the next without examinations, provided they have attended at least half of the classes. At the end of each year the pupils are given a progress certificate.
	Age Group :12-15 General Name: Gymnasium - Secondary school Aims and Role: The Gymnasium covers the three final years of compulsory education and constitutes the lower level of secondary education. The Gymnasium is for pupils aged 12 to 15 years. Its role is designed to promote the pupils' all-round development with reference to the abilities which they have at that age and the demands which life puts on them. Specifically, it helps pupils to widen the scope of their values, to supplement and combine the acquisition of knowledge with the corresponding social problems, to cultivate their powers of verbal expression, to achieve normal physical development, to familiarise themselves with the various forms of art, to develop aesthetic judgment, and to become aware of their abilities and skills

Fig. 16. Reported results basing on the compared items and countries

4. CONCLUSIONS

Web-based applications involve database Intranet/Internet process that are easily visible and provide secure access. Content Management systems has been an asset management technique that is obligatory for many organizations in international platform rather than software being understood as web-site preparation and screening the required information. Currently, content management systems have been a software industry divided within itself. In the process of MODULARTE, the significant advantages gained by using content management system can be summarized as follows:

- Reflecting the progress rapidly to the web-site
- Independent working from the web designer
- Decrease in the update and development/progress costs
- Frequent and rapid updating

When we evaluate in the context of the study, the operated system has been attained by creating supplementary project data management tools and web-based project environment. The achieved information sharing platform provided supportive applications for the national team members working on virtual team environment. These decision-support aimed tools were utilized for submitting the data on the single user screen through concretion of the heterogeneous data in differently distributed environments. By ensuring collaborative project management conditions, a technological environment complying with the rapid access aims for updating the information in the inter-support process has been designed. This environment collects the information produced by discrete tools in a intelligent way and provides the access by the common interface called “web-scanner”.

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