

Connet Turkey – Gateway to construction in Europe

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ABSTRACT: For the construction industries to move into the knowledge society and knowledge economy they need to be able to build upon their existing information base. Drawing together the information resources within nations and connecting them with each other to form transnational resources enables a more effective, informed, and intelligent industry. ConNet is such a solution developed among participating countries which are Belgium, Finland, Germany, Iceland, Italy, the Netherlands, Slovenia, Spain, the United Kingdom and Turkey. Turkey has developed the Turkish gateway to gain throughput in efficiency for the construction industry and also designed and implemented necessary tools and software for providing relevant, timely, and up-to-date information, trade and e-business services through a web portal.

1 INTRODUCTION

1.1 Connet Europe

Connet Europe consists of a set of electronic information services offered through one or more web portals and accessed through the European Gateway. Connet Europe plays the role of the integration point where each country site is registered with its online services (Bloomfield et al. 2001a & 2001b).

Such integration point not only provides a visual portal environment, but also information exchange utility where local information databases are shared for multinational reach of knowledge.

It is also a vital role of this gateway to provide translation services to discard language differences as an issue in knowledge sharing. The Connet Europe gateway brings together the dispersed knowledge to better utilize information in a multinational business environment where industry players in each participating country already carry out projects across each other.

Each national service is not necessarily provided by one vendor; in fact may be a set of services from varying sources, again brought together through each national gateway.

It is not a strict must that each country provides the same set of services and information. As can be seen on the European Gateway; some countries provide certain types of services whereas some provide others, seamlessly integrated to work together efficiently.

1.2 Connet Turkey

Connet Turkey has started as a research and development project at Istanbul Technical University Project Management Center (ITU-PMC) and is currently being finalized by ITU-PMC and DNA Internet Solutions Inc. (DNA) towards a goal to commercialize the portal and services.

Connet Turkey covers the full range of information, consultancy, training, trade and e-business services. Construction industry in Turkey is merely introduced to portal services and there is a growing demand for a trusted party to develop and operate a large scale portal.

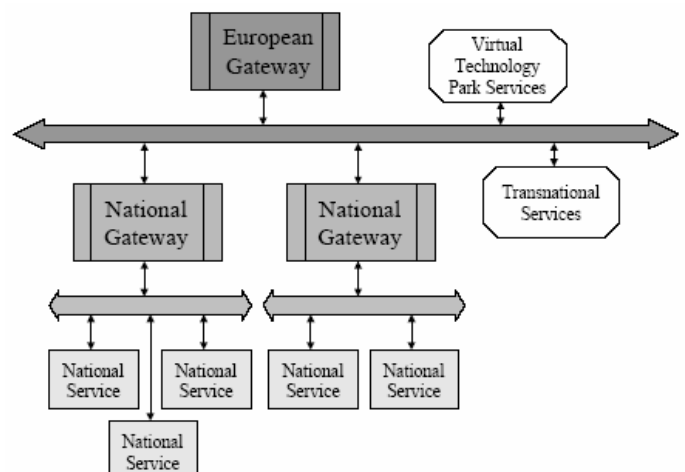


Figure 1. Schematics of information exchange.

ITU-PMC and DNA collaboratively provide the necessary resources, know-how and initial information to develop and launch Connet Turkey portal bearing a content management infrastructure with repository management, page layout management and site map management in the first phase. This first phase content management infrastructure provides necessary tools to manage information, consultancy and training services.

The second phase is to provide specialized services like building materials classification system, trade system, download center and banner advertisement management.

Final phase of the project is the implementation of subscription services management infrastructure, allowing rapid commercialization of the whole system, bringing together various information providers and information seekers, namely the players in Turkish construction industry.

Finally, Connet Turkey is also a very important tool and means for Turkey integrating with the European Union (EU). By literally integrating one of the largest industries in Turkey with EU, a working model for such deed will eventually have accomplished, practically implemented and tested.

2 PROJECT OVERVIEW

2.1 *Key problems and project goals*

The construction industry occupies the largest share among the overall economy. 11% of total gross national income among EU is generated by the construction industry. With an estimated number of 8.8 million employees – which is 7% among all – it is also an important market itself for many other industries.

On the contrary, the construction industry remains at the end of the list for information technology penetration with a large gap to its closest competitors. In order to gain the necessary competitive advantage and increase efficiency, both large players and SME's must define information technology demands. ITU-PMC with its well possessed know-how and experience, is equipped with the necessary information and skills to define the demands and provide the supply, namely Connet Turkey.

Connet Turkey web portal is targeting to fulfill many of the industry's expectations to meet:

- SME requirements,
- easily serve geographically disparate subscribers and
- well-organized information accompanied by best-practices and case studies.

The portal services target to solve common issues that are known as:

- Standardization,
- Improved communication,

- Time and location independent collaboration,
 - Improved knowledge exchange,
- and if solved, known to gain important increase in productivity and efficiency.

To address all issues, ITU-PMC and DNA collated a list of services to be launched on Connet Turkey web portal:

- Management and information system for construction projects,
- Technical information repository,
- Software and hardware inventory,
- News central,
- Center for consultancy services,
- Classification systems center,
- Web hosting services,
- Online B2B building materials market,
- Banner and ad server,
- Waste material and idle equipment utilization market,
- Center of continuous education,
- Construction management service.

Outputs of a research project carried out in Faculty of Architecture at Istanbul Technical University (ITU) will be used in classification system and online B2B building materials services of the Connet Turkey project. Main objectives of the "Building Materials Information System" (BMIS) project were to examine Turkish market and to develop an web-based information system in the context of building materials and components (Tas et al. 2002).

Outputs and data structures of the BMIS project are being revised for Connet Turkey project compatibility.

2.2 *Management and information system for construction projects*

This web based tool is developed for managers and project responsible. It allows multiple construction projects to be managed – budget-wise and time-wise – through cost analysis, project schedule, building material and work standardization. This tool is especially helpful for universities, municipalities and other government organizations who seek to manage their construction projects.

2.3 *Technical information repository*

This repository and portal gateway is planned to be the one stop access point to all written and published work available to the construction industry and covers all disciplines. The service allows content providers to integrate their content into the Connet Turkey web portal.

2.4 Software and hardware inventory

This inventory module provides means of categorization and access to all available hardware and software information technology tools and products for the benefit of the construction industry. Designers at the site or office can gain instant access to this module to find required hardware and software.

2.5 News central

The news central is going to be a spot where all information will be gathered from news service providers and centrally published to subscribers. News headlines and content is grouped, for convenience, into categories such as government projects, upcoming bids, projects news, and technology news and such.

2.6 Center for consultancy services

This service will cover all consultancy needs, especially contract management, project analysis, contract analysis, arbitration and general consultancy as well as research and development support.

2.7 Classification systems center

Turkish building materials industry bears a large number of suppliers, yet lack a consistent standardization and classification. This very module is especially important for the integration process with the EU and supply all necessary materials cataloging requirements. Suppliers and their products will also be displayed under categories.

2.8 Web hosting services

SME's in Turkey merely have the necessary abilities and budget to start corporate web sites, let alone e-business sites. A web manageable hosting services is going to be provided through a centralized data center infrastructure.

2.9 Online B2B materials market

In order to enlarge the reach of building material suppliers in global markets, as well as the national market, an on-line trade platform is planned to be developed and operated.

2.10 Banner and ad server

The portal is going to utilize banner ads both accompanying its own income model, and assisting subscribers and banner ad clients for better market penetration and brand communication.

2.11 Waste material and idle equipment utilization market

Reusable second hand machinery and waste materials/equipment is a very important asset if utilized. Through this module, such assets will re-enter the market, thus maximizing efficiency and decreasing certain project costs for portal subscribers.

2.12 Center of continuous education

ITU-PMC is already a well established continuous education provider in Turkey. This module is going to allow a wide spread reach of such educative content through e-learning.

2.13 Construction management service

General information, links and services will be offered through this section of the portal.

3 –TECHNICAL INFRASTRUCTURE

3.1 Connet integration infrastructure

The whole system is based on standardized platform independent and scalable technologies such as Java and XML.

After each country develops its own portal interface and integration with local content and news service providers, all local database content is to be reachable through other countries.

To provide such means, XML integration technology and common techniques are to be used. Integration gateway programs are to provide inter-portal communications and information exchange while Connet Europe Gateway is to utilize add-on services such as the translation engine.

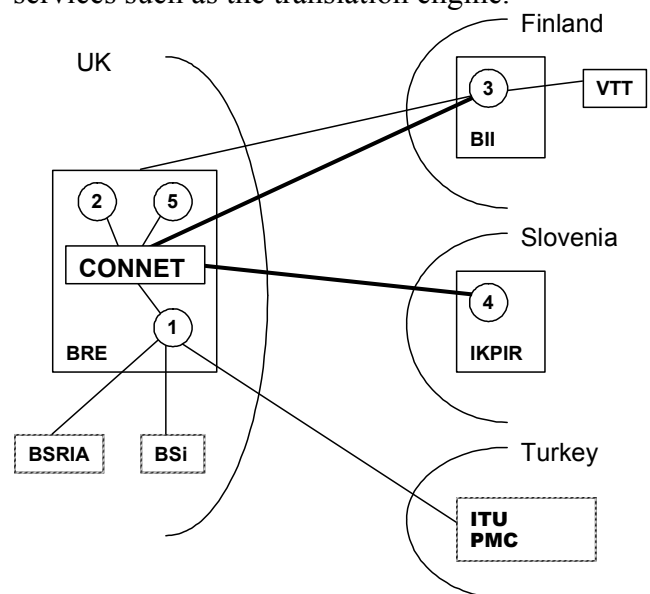


Figure 2. Connet integration map

3.2 Connet Turkey infrastructure

Parallel to the international infrastructure components, Connet Turkey web portal utilizes Java and XML technologies.

The core of the system is designed and implemented on already preferred open-source server infrastructure such as Apache Jakarta Tomcat JSP engine/servlet container and MySQL relational database management system.

The whole system is based on open technologies and the operating system choice is similarly Linux for its low cost, robust and secure environment.

The heart of the portal is its content management system with centralized type-independent content repository, layout management and site navigation management solution allowing the right, up-to-date and consistent information to be displayed on the web site.

4 PROJECT STAGES AND INCOME

4.1 Project stages

The project has past and is following phases until its ultimate goal of successful implementation and commercial income model, these stages are:

- Information gathering and analysis,
- Design and construction,
- Data entry,
- Connet integration,
- Complete localization and
- Commercialization.

4.2 Project income and goals

It is very obvious and eagerly awaited that this project is going to play critical role for the improvement and EU integration of the Turkish construction industry.

All players in the industry are welcomed and targeted to be subscribed to at least one or more of the services offered.

Enabling single point of information aggregation, easier access to information and development of shared knowledge is aspired.

Especially SME's as well as the large players will more easily find business partners for international projects, and provide standardized goods and services on a multinational scale.

For the first time, e-business enabling the construction industry.

Exploring new business opportunities under the EU identity and umbrella.

EU standards being implemented on a live project in international scale.

5 CONCLUSION

Turkish construction industry, unlike the structure in other Connet partnering countries and though large and promising, is at an early stage in terms of information and knowledge sharing and management. Thus, Connet is a well crafted opportunity for the players - especially SME's - in Turkey to obtain higher effectiveness and innovation, standards based design and production through information-reach, collaboration, training and consultancy.

Connet is believed to be an important tool to reach at an international business stage of competition through collaboration.

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