



## Case Study



**Icreon**

# Cap-Net

Database-Driven Content Management and Regional Networking for IWRM

**UNDP, the Dutch Ministry of Foreign Affairs, IHE Delft and UNOPS launched the Global Water Partnership program to promote information exchange and human resource development for Integrated Water Resource Management (IWRM). To implement this program, they required a comprehensive content management system that would be used for training & education, establishing regional networks and developing relevant materials and tools. Icreon developed this application for the Global Water Partnership program. Cap-Net was developed as a Capacity Building Network for IWRM. Aiming to strengthen the information exchange process, Cap-Net facilitates the establishment of regional IWRM networks for creating and managing content, globally.**

## Customer Profile

The Dutch Ministry of Foreign Affairs, UNDP, IHE Delft, and UNOPS are non-profit organizations working in various areas of welfare for the United Nations and other such bodies. United Nations Development Program (UNDP) operates in more than 166 countries and assists the UN system and its partners to raise awareness and track progress. It connects countries to the knowledge and resources needed to achieve development goals defined by the UN system. IHE Delft specializes in water education and conducts post-graduate education and training programs for more than 40 years. UNOPS works in partnership with the UN Development Program and the Global Environment Facility to establish regional institutional arrangements to protect and manage seas, rivers, lakes and other bodies of water that surpass national boundaries.

## Business Requirements

International bodies such as UNDP, IHE Delft, UNOPS and Dutch Ministry of Foreign Affairs, collaborated for an extensive and Global Water Partnership program, that would educate and train people about water related issues and how these issues can be managed. In this effort, the program required extensive content management for regional and global bodies. Thereby, the concept of an online content management system – Cap-Net came into existence. This application had to cater to the needs of authors, editors and publishers, who supply online content about various water resource issues. The basic requirement was to develop Cap-Net.org as the largest networking portal in the area of water management.

## Agile Content Management over a Robust and Scalable Architecture

### Benefits:

- Global accessibility and management of content
- Optimized business processes for higher productivity

- Language compatibility for easy content usage in different languages

Water is a precious natural resource. Various countries and regions are dealing with water related problems and issues. IHE Delft, UNDP, Dutch Ministry of Foreign Affairs, and UNOPS are non-profit organizations, who launched the Global Water Resource program for educating and training water professionals, individuals, and organizations about water related issues in various regions. Since the scope of this program catered to a global audience, the program required an Internet based solution, which would enhance its reach to a worldwide audience. Cap-Net would serve the needs of the Global Water Partnership program by allowing individuals and institutions to contribute their knowledge base towards training and educating water professionals. Cap-Net required to allow water professionals from over 130 countries to interact, and learn from each other's experiences. To implement this, the application required functionality to allow water professionals, worldwide, to create their sub-networks and manage & publish content on the local network.

Icreon, in co-operation with IHE Delft had to design and develop Cap-Net as a dynamic and comprehensive content management portal, with capabilities to edit and publish content, while maintaining data integrity. In addition, the application required to allow water professionals to setup their own regional networks and manage content, news, & events on these networks.

The objective behind developing Cap-Net as a Web-based content management solution was to provide a common platform to organizations & individuals dealing with water related issues, worldwide. We realized that Cap-Net required to be compatible with different languages because the application would be used by different types of users in many countries.

After studying all the aspects of this project, the most evident fact was that the audience was highly diverse. So, we had to consider the requirements of all types of users, while developing the application. We developed Cap-Net as a knowledge portal for dispersing information for new networks, where project studies, reports, training material and other content related to IWRM, would be displayed. In addition, we had to make Cap-Net compatible for use by water managers in developing and developed countries.

The entire project was carried out in modules and the hardest part of this was that the we worked on the project with an Indo-European company without interacting with client.

Before detailing the modules of Cap-Net, it is essential to understand its process flow and its user types. Being a content management system, there are five types of users of Cap-Net:

- **Portal Webmaster** - can add or delete regional Webmasters. At this level, the user can add or modify the content on the portal [www.cap-net.org](http://www.cap-net.org).
- **Region Webmaster** - can add or delete data entry operator, editor, or publisher within the content management system.
- **Author** - can add content such as text, pictures, or other file types, on the Website template. There are several programs, which enable the author to convert the file in the required format,

on the server. For example, if an image on the Website has a resolution of 300 by 400 pixels, the backend automatically converts it to the desired format for the specified template.

- **Editor** - can combine several content types such as, pictures, sound, and video into one article. The content types can be categorized, while the ongoing content is managed by the editor, easily.
- **Publisher** - is responsible for every publication on the Website. At this level, the user can add a certain publication time/date and area on the Website.

The whole publication process starts with the digitization from several sources into one digital content library. The publisher or editor will use one or more templates to create a publication article. For an author (data entry operator), the editor may or may not approve the publication. People in the closed user group can access the publication by using an authenticated login ID and password. The publisher can also publish the article for access by the Internet community.

Icreon developed Cap-Net to allow publishing of articles, events and creating user defined networks. With predefined format of articles, events, and networks, the layout is structured and organized keeping in mind the consistency and the need of various users. The data is stored in a database and is parsed through different templates. This enables users in different countries to view articles and events in their native language. Cap-Net is a user-driven networking portal, which facilitates communication between water professionals across the world. The portal allows the facility to create virtual communities, and conduct distance-learning programs to enable capacity building of the network. In addition, the distance learning program allows water managers to access training material and seek past references.

The Cap-Net architecture uses PHP: Hypertext Preprocessor (PHP), which increases the effectiveness and functionality of the application. The Cap-Net site was built using **Apache Web server**, which runs on **Linux**. The database server is powered by **MySQL**. Much of the code used for Cap-Net was customized from **HTML/SHTML** based templates. **Javascript** was used as a client-side scripting language for client-side validations.

#### Technologies used in developing this application are:



## Summary

Cap-Net is a vast and dynamic content management system that can be easily used by different countries, in their native language. Allowing complete integration of IWRM resources across the globe, this application enables the Global Water Partnership program to achieve its aim of reaching out to water managers and professionals, and allow them to interact through a common platform. At Icreon, we identified the level of diversity of the audience that Cap-Net had to cater. Designing a

vast application such as Cap-Net, as per global standards and within the specified timelines, has been an achievement for Icreon and one of the key success factors for the Global Water Partnership program.