NaturNet-Redime

a new education and decision support model for active behaviour in sustainable development based on innovative web services and qualitative reasoning

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Abstract

NaturNet-Redime will develop educational programmes to contribute to and accompa-ny the design of the European Union's Strategy for Sustainable Development. The technology produced will increase know-ledge of the various factors that affect sustainable development. By building under-standing of processes, decision makers, stakeholders, and citizens will be able to make more informed and equitable decisions.

All learning materials will be available via the NaturNet-Redime (www.naturnet.org) web portal. Interaction with end users will provide feedback to ensure optimisation.

Introduction

NaturNet-Redime is the result of the merger of two EU FP6 STREP proposals that each sought to use web and computer tech-nologies to disseminate knowledge about sustainable development. The result is an innovative educational project for active behaviour in sustainable development based on web services and qualitative reasoning. We will develop an innovative presentation of different data sources for learning about sustainability and the tools used for sustainability impact assessment.

Four level approach

1. Publish general principles and basic documents about sustainability in a form that is understandable by stakeholders, decision makers, and citizens.

2. Present knowledge and educational curricula about sustainability using attractive methods like GIS, multimedia, virtual presentation, etc.

3. Support the study of sustainability directly in the terrain using the modern mobile Internet.

4. Enable non-experts to develop causal models of sustainable development scena-rios using qualitative reasoning.

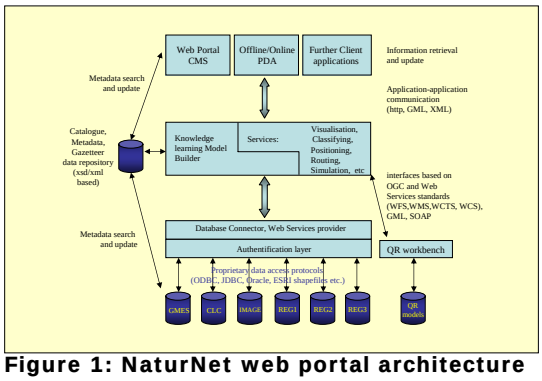

Figure 1: NaturNet web portal architecture

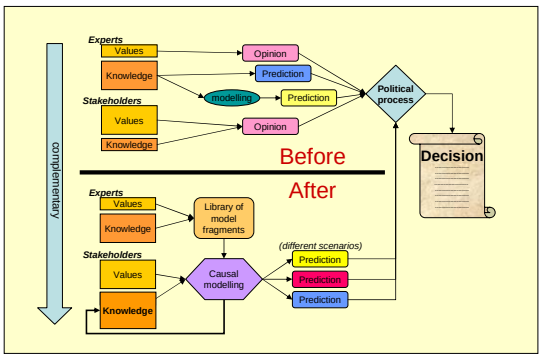

Figure 2: Increasing Public Involvement in the Strategy for Sustainable Development

Table 1: List of Participants

Partner	Participant	Country
Czech Centre for Strategic Studies	Karel Charvat	CZ
Environmental Network Ltd	Peter Barz	UK
Albert-Ludwigs University of Freiburg	Barbara Koch	D
Municipality of Francavilla di Sicilia	Nino Paterno	I
Gymnazium Bozeny Nemcove	Jan Sterba	CZ
INNOVATION. Grenzüberschreitendes Netzwerk e.V	Frank Hoffman	D
Institute of Mathematics and Comp. Science, Univ. of Latvia	Maris Alberts	LV
Joanneum Research	Alexander Almer	A
KRIMULDA – Municipality	Juris Salmins	LV
APIF MOVIQUITY SA	Nuria de Lama	E
Société d'Informatique et de Télématique Corse	Vincent Carloti	F
Slovak Hydromelioration Authority	Boris Minarik	SK
Region Vysocina	Petr Pavlinec	CZ
University of Jena, Institute of Ecology	Tim Nuttle Michael Neumann	D
University of Amsterdam (UvA), Department of Social Science Informatics, Amsterdam	Bert Bredeweg	NL
Bulgarian Academy of Sciences, Central Laboratory of General Ecology (CLGE)	Yordan Uzunov	BG
Danube Delta National Instit. for Research and Development	Eugenia Cioaca	RO
University of Brasilia, Institute of Biological Sciences	Paulo Salles	Brazil
University of Hull, International Fisheries Institute	Ian Cowx	UK
University of Natural Resources and Applied Life Sciences, Department of Hydrobiology, Fisheries and Aquaculture	Stefan Schmutz	AA
Thaurus Communication	Thorsten Kueppers	D

NaturNet web portal

Our web portal (www.naturnet.org) will provide an interoperable Internet architecture to visualise learn about sustainable development. This web service and semantic web approach will contain distributed knowledge management based learning (k-learning). Mobile Internet technologies will allow users to access location-specific information in the terrain. As Figure 1 shows, the k-learning system will be an open and distributed platform that will allow rapid growth of the system into the future. A Learning Model Builder (LMB) will facilitate knowledge providers as well as monitor learner participation performance. An LMB will also provide learners with interactive features such as threaded discussions, video conferencing, and discussion forums. Our learning Content Management System (CMS) will create, store, assemble, and deliver personalised content. A robust model for creating and managing learning objects, good search and browse capabilities, the ability to personalise the delivery of content, and detailed tracking and reporting capabilities will be implemented.

Qualitative Reasoning

The qualitative reasoning (QR) aspect will focus on learning through modelling. Users learn about system behaviour best when they can construct mental models of how the system works. Our workbench will facilitate easy access to build and use QR models. This will make expert knowledge available for educational use. This approach makes knowledge explicit, allowing its transfer to other people and situations.

The QR content on the NaturNet web portal will be created by a team of experts in the domain of ecology, environmental science, and natural resources. They will capture knowledge into the QR framework to be used by stakeholders, decision makers, and citizens. Online curricula will guide users to assemble the pieces of knowledge into systems from which the users learn about cause-effect processes of sustainability.

In the model-building process, learners gain increased understanding, which will create a more knowledgeable society, and hence more informed and equitable decisions (see Fig. 2).

Contact

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