Solution and Services Engineering for Measuring, Monitoring, and Management of Organizations’ Environmental Performance Indicators (OEPI)

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Outline

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General information

• Funded by the EU
• Duration: February 2010 – August 2012 // 30 months //
• Accepted within the Seventh Framework Programme (FP7)
  *Objective ICT-2009.6.4 ICT for Environmental Services and Climate Change Adaptation*
• Cooperative project consisting of several consortium members
Consortium members

Academia
- Universität St. Gallen
- Universität Magdeburg
- Universität Oldenburg

Applied research
- Telefónica

Industry
- KONE
- Siemens
- SAP

Business requirements
Computer Science
Environmental indicators
The vision of the OEPI project is to enable business users across industries, organizations and supply chains to reduce their organizations environmental impact in their daily business.
Challenges

Sustainability today

Business users & daily tasks

A tale of two worlds

Environmental monitoring & optimization... Daily business tasks focus on cost & time...

... mostly on annual or one-off basis. ... and overlook the environment in decision-making.
Challenges

Four business focus areas

- Sustainable procurement
- Design for Environment
- Network deployment & circuit provisioning
- Corporate communication

- Business-driven concepts
  - Process & use case specification
  - EPI integration in decision-making
- Value proposition
  - Business & environmental impact
- Validation with industry partners
  - High-tech industry focus
Challenges

Key factors to address:

• Generic description language for EPIs
• Data collection and processing from several sources
• Management of generated EPIs
• EPI integration (Portals, Information Systems, Production Systems)
Technology realization

EPI description language:

EPI blueprints

Business consumption tools

EPIs → business integration

SOA-enabled platform

Data → EPIs

Data sources

EHS  Manufacturing  Suppliers  Materials  LCA  Facilities
Project structure
As a starting point an extensive review of existing standards for EPIs has been done as part of the first deliverable. Among the examined standards and proposed EPIs were

- The Sixth Environment Action Programme of the European Community 2002-2012,
- The Global Reporting Initiative (GRI),
- Corporate Sustainability Assessment of SAM Research (used for Dow Jones Sustainability Index),
- Greenhouse Gas Protocol (GHG Protocol),
- and the ISO 14025 standard.

Coming from these concepts, five possible dimensions of an EPI have been derived: Absolute, relative and indexed indicators, aggregated depictions and weighted evaluations.

Another step which is mostly finished is to select the ontologies requirements as a pre step to design the OEPI ontology itself, in order to support the service and platform.
Resulting research questions

- Application of OEPI for integrated EPI usage
- Further examination of OEPI's role in the “classic“ CEMIS landscape
- Development/extension/integration of the EPI ontology
- Application of ontology in a SOA
- Integration of data sources
- Generation of EPIs
- Questions arising from network of companies
The completion of the OEPI project will provide new opportunities in the area of Corporate Environmental Management Systems (CEMIS).

The availability of an EPI description language and its ontology may then leverage further development of existing and new CEMIS applications.

Additionally the created OEPI platform and its accompanying services will provide a proven common basis for similar and new projects.

After all OEPI will improve the current state of the art in EPI processing and managing CEMIS.
THANK YOU!