REGIONAL INNOVATION ECOSYSTEM PLATFORM

URENIO RESEARCH UNIT, GREECE
OVERVIEW

The platform allows universities to understand and develop further their innovation ecosystem and manage the relationships with enterprises working with the innovation laboratories. The platform consists of two subsystems:

1. A Web 2.0 content management system which presents the actors that operating within the regional innovation ecosystem.

2. A number of Intelligent Analytics tools which visualize the relationships, trends and activities of the actors of the ecosystem (nodes).
COMPONENTS

Content Management System
- Profiles
- Activities
- News

Visualisations
- Node Map
- Word Cloud
- Trends
- Clusters

Intelligent Tools
CONTENT MANAGEMENT SYSTEM
OVERVIEW

Content management system (CMS) presents actors of the innovation ecosystem. Each ecosystem contains the following types of actors:

1. University Labs
2. Research Enterprises
3. Commercial Enterprises
4. Funding Agents

The actors will be presented in different predefined dimensions, such as profile, activities, related organizations, events, staff, etc.
TWO ESSENTIAL REQUIREMENTS

The information collected in CMS will feed the intelligent tools that create the visualisations. For this reason, it is crucial to choose very carefully the data to be collected, which must fulfil two requirements:

1. It should be collected easily and quickly.

2. It should provide all the necessary information so that visualisations about the ecosystem can be created.
ACTOR’S PROFILE
INFORMATION

University Lab
• Number of Staff
• Number of Research Students
• Number of Partners
• Amount of Research Grants Awarded
• Number of Projects Completed
• Number of Publications
• Research Area (category)

Funding Agent
• Available Funds
• Number of Projects Funded
• Number of Partners

Research Enterprise
• Number of Employees
• Annual Turnover
• Number of Partners
• Number of Products Researched On
• Category (NACE code)

Commercial Enterprise
• (Additionally to Research Enterprise) Shipping Numbers

All
• Short Profile
• Contact Details
ACTOR’S PROFILE INFORMATION

Activities:

- Starting/Ending Date
- Partners Involved
- Budget
- Products / services
The CMS could be also used by the involved organisations as a Market & Technology Watch system. By posting information on prices, technologies, new products, suppliers, competitors, etc. they are able to follow up emerging trends in different industry sectors.
M&T WATCH EXAMPLE
INSIGHTS ABOUT THE ECOSYSTEM

- Total number of organisations
- Organisations per type
- Organisations per category
- Total number of projects, publications, grants, budget, etc.
- Total number of collaborations
- Total number of posts
- Total number of visitors
- Other usage information
INTELLIGENT ANALYTICS TOOLS
OVERVIEW

The Intelligent Analytics tools will use information that is available in the CMS in order to produce real time visualization network maps and diagrams.

The mapping of the innovation ecosystem is considered as a dynamic process continuously evolving, aiming to visualize the connectivity of each node and the characteristics of each connection from different perspectives.
DIAGRAM TYPES

- Node Map
- Word Cloud
- Trends
- Clusters
Entities in the innovation network are represented as nodes that are connected to one another based on partnerships. The type of an entity (lab, enterprise, or funding agent) is represented by the colour of its node, while its importance is denoted by the node’s relative size. Importance can be measured using one of the available variables, e.g. number of projects for labs, annual turnover for enterprises, or available funds for funding agents. The length of the lines connecting two nodes implies the strength of their connection, which is based on the number of activities that they share.

Interactivity of the diagram is achieved by providing the user with the ability to filter the diagram based on time, region, or research area. For example, a user could ask to see all partnerships that took place in the last year in a specific region, regarding a particular research area. Based on the user’s choices, the diagram updates accordingly.
NODE MAP

Regional Innovation Ecosystem Platform
The most important research interests in a region are represented in a word cloud. In addition to the “research area” field of each entity, the word cloud also gathers data from tags and free-text entries, in order to show a more complete picture of the interests in a region. As with the node map, interactivity is achieved by the ability to filter the word cloud by region or by time.
TRENDS

Four statistical charts show the trends of the innovation network. Bar charts showing the amount of funding that has been granted and the number of activities in the region over time gives a general idea about the course of research. A pie chart of the main research areas as specified by the entities shows the main focuses of innovation in the region. Another pie chart helps identify the main funding agents.
TRENDS

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Regional Innovation Ecosystem Platform
CLUSTERS

Three scatterplots, one for each type of entity in the network, effectively display which entities are similar to one another in terms of two variables at a time. University labs are compared based on number of staff and number of projects completed. Enterprises are compared based on annual turnover and number of projects they have cooperated on. Funding agents are compared based on available funds and number of projects funded. The network shows what entities are related and the events that connect them.
CLUSTERS

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Regional Innovation Ecosystem Platform
INSTALLATIONS
PLATFORM INSTALLATIONS

Two installations (Ukraine & Belarus)

Five installations (One per partner)
PLATFORM ADMINISTRATION

One administrator per partner

One administrator per installation
TECHNICAL REQUIREMENTS

• Apache Web Server
• PHP Scripting Language
• MySQL Database
DISCUSSION