Meta-Foresight Guide

The Meta-Foresight Guide is structured on a double support :

- The print book contains the Guide, describing the Meta-Foresight project and the method of using the Meta-Foresight software application.
- The CD on the last page of the Meta-Foresight Guide contains the Meta-Foresight Guide, the questionnaire and the data analysis of the toolbox.

Meta-Foresight Guide

Regions of Knowledge
A Pilot Action
Bringing regions faster into
the knowledge economy

Printed in Belgium September 2005



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This document constitutes the software users' manual produced by the end of the Meta-Foresight project supported by the European Commission in the framework of the Knowledge Regions initiative.

The Meta-Foresight tool offers an integrated-multi-focus regional information system, linking data included in different applications and information systems and providing extended search capabilities. Meta-search integration is mainly considered since the problem is to bridge existing applications rather than creating new content. The integration model of Meta-Foresight refers to knowledge in five fields contributing to intelligence creation (Foresight, Benchmarking, R&D, Technology Watch and Technology Skills) within a single application.

Meta-Foresight is promoting intelligence through knowledge networking and application of information and communication technologies. The software platform and tools enable to achieve the creation of a system of regional intelligence by integrating the knowledge content of different information providers located into a region. Networking is therefore a prerequisite for the successful application of the Meta-Foresight project. Human and artificial intelligence are the basis of the Meta-Foresight knowledge tool.

In this context, this guide should support the implementation process of the regional intelligence platforms in the EU regions. The guide is composed of three main parts:

- Presentation of main features of Meta-Foresight initiative in the context of knowledge regions development;
- Development of main components (architecture and services) of Meta-Foresight digital application;
- Explanation of how to use the Meta-Foresight application services.

The chance to think about and implement an integrated information and knowledge regional platform can be modulated to suit the needs of the regions as to specificities, data bases, networks and so on. To secure the success of Meta-Foresight software platform. there is nevertheless a first need for a change in end-user mentality regarding the benefit of territorial intelligence. Moreover, support understanding of practical and strategic outputs related to Meta-Foresight application is rather fundamental.

This innovative project started early 2004 and will be closed by the end of 2005.

The project partnership includes five organisations with significant previous involvement in initiatives dealing with intelligent instruments of governance, such as benchmarking, foresight, and technology watch, and participation in regional and inter-regional networks fostering regional intelligence.

- Urenio research unit, Aristotle University of Thessaloniki (Central Macedonia in Greece),
- Foundation for the Development of Science and Technology in Extremadura – Fundecyt (Extremadura in Spain),
- Cardiff Business School, Cardiff University (Wales in the United Kingdom),
- Información y Desarrollo S.L. Infyde S.L (Basque Country in Spain),
- The Destree Institute (Wallonia in Belgium).

This guide is dedicated to Philippe de Lavergne, high level expert in regional development and knowledge management all over Europe that contributed to the project during its early stages. Philippe de Lavergne passed away in July 2004. For all of us he was an outstanding colleague, for some of us he was a long-standing friend.

Chapter I

Meta-Foresight and knowledge Regions

I.1. The context: Meta-Foresight within KnowREG initiative

With the emergence of what is now called the **Knowledge Society**. we are witnessing the proliferation of concepts and initiatives (Intelligent Territories, Regions of Knowledge, Learning Regions, Creative Regions) that reconsider the challenges of territorial competitiveness in the new global context that is adopting a more cognitive dimension. Knowledge creation, acquisition and dissemination are recognised as the driving factors of development, forming the basis for innovation and creativity capabilities. The focal points of learning and knowledge creation are the regions, which are increasingly accepted as significant pools of innovation.

We could define a Knowledge Region as one that has created conditions favourable to apprenticeship, research and innovation, thus helping to establish a society based on knowledge, savoir-faire and creativity in order to achieve lasting development. This society has the capacity to adapt to changes, thanks to networking, the promotion of the creative tensions between players, thanks also to partnerships and to private-public alliances

The Knowledge Regions a pilot action, entered in the 2003 Community budget as a pilot project by the European Parliament and managed by the European Commission Directorate-General for Research, is an initiative to support experimental actions at regional level in favour of the Knowledge Regions. The project's main aim is to demonstrate the central role of knowledge in driving regional development and show how regional actors can effectively participate in formulating the future of their regions.

Projects under such initiatives are designed to identify the new **meas**ures and/or regional tools for strengthening regional involvement and commitment to the creation of the European Research Area and support for the Lisbon goals and the Barcelona objectives.

Within a regional knowledge-based economy and society, two features seem to be of major importance:

- the establishment of regional and interregional partnerships, which lead to interactive possibilities of learning between different collaborating actors;
- supporting mechanisms and institutions for knowledge transfer and learning processes.

These mechanisms enable **maximum use of regional information and knowledge sources** in order to identify future regional strategies and actions. Moreover, they sustain the efforts of regional companies to operate in an environment of intelligence.

In this context, based on an interregional network of five EU regions conducted by different knowledge support organizations, the **Meta-Foresight project** seeks to embrace crucial issues for knowledge development in European regions. It promotes **integrated regional intelligence** through the application of information and communications technologies.

Regional intelligence is a territorial form of intelligence using human and artificial intelligence through a systemic collection, analysis, and dissemination of information for business and territorial development purposes. It should fit into regional medium-term strategic planning and future studies. It is a network of actors, who, working together, help to develop a regional observation strategy within the knowledge environment.

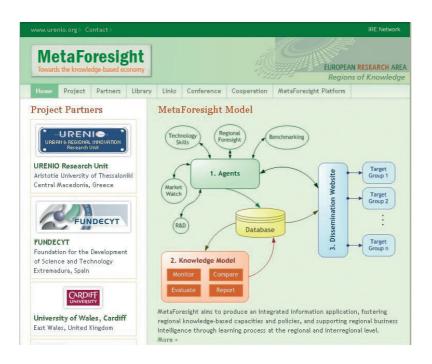
Meta-Foresight is basically a **new concept of the regional intelligence system**:

- a localized network of separate information systems;
- developed by third party organizations for the welfare of a region;

- using human and artificial intelligence in the collection, processing, and dissemination of information:
- communicating via the Internet (web-based platform);
- integrated so effectively that its components become indistinguishable to the user.

It aims at providing: information on the regions' knowledge capacity (1), assessment of regional differences regarding knowledge performance (2), information on best practices put in place in EU regions in engaging into the knowledge economy and society (3), information that enhances research capabilities, innovation production capacities and regional knowledge strategies (4), and dissemination of knowledge based practices and strategies (5).

Meta-Foresight aims to produce an **integrated system** fostering regional knowledge-based capacities and policies, as well as regional business intelligence. This intelligent application integrates five fields of collective/regional intelligence: regional foresight (1), R&D database results (2), benchmarking of regional companies, regional innovation potential and development policies (3), technology and market watch (4), technological skills (5).



I.2. Main features and added value of Meta-Foresight

- An integrated system
- A user-oriented tool
- A cooperation-based system
- An experimental project
- A dual information platform

An integrated system

Several foresight models and a significant number of information knowledge and technology systems have been created in the European regions to develop and enhance regional intelligence. However, it is clear that these systems are partial and are not integrated. Each one is intended mainly for a restricted number of end users and provides information in a specific field.

The Meta-Foresight tool fills this gap with the design and development of an integrated-multi-focus regional information system, linking data included in different applications and information systems and providing extended search capabilities. Meta-search integration is mainly considered since the problem is to bridge existing applications rather than creating new content.

The concept of integration is therefore faced on a two-fold approach: on one hand integration refers to knowledge in the five fields contributing to intelligence creation (Foresight, Benchmarking, R&D, Technology Watch and Technology Skills) within a single application. On the other hand, it refers to the homogeneity and transferability of the model to different regions. It offers new ways of combining strategic issues and actors to promote the processes of innovation.

Foresight	provides a systemic vision of the future and the steps to reach it			
Benchmarking	allows to learn from others			
R&D	provides information about basic and applied research and development capacity			
Technology Watch	shows the opportunities and threats of technological change and innovation trends			
Technology Skills	offer the investment toward the future that resides in the formation of the human capital			

Foresight provides a systemic vision of the future and the steps to reach it. Foresight is about setting out the long-term issues of the region, deciding on common visions and linking them to strategic actions. It highlights today's and tomorrow's questions, on the one hand by considering them in their systemic framework, and, on the other hand, by inserting them in temporality. It is an independent, participatory, interactive and systematic process, developed with collective and Tran disciplinary methods.

Benchmarking mainly involves learning, sharing information and adopting best practices to bring about step changes in performance. The process starts by defining the indicators we wish to compare, followed by data collection, comparison with data from previous periods or other territories, companies, organizations, reporting of main findings, and the setting of improvement plans.

R&D provides information about the current state of basic and applied research in public and private organizations. R&D statistics cover a wide range of data measuring the resources devoted to stages of R&D activity, the results of that activity and its technological potential.

Technology watch reveals the opportunities and risks of technological change and innovation trends mainly dedicated to company needs. It provides information on existing technologies and their possibilities for new products and processes. The treatment, analysis and validation of the information obtained leads to the adoption of better decisions about research and development projects. investment and strategy design.

Technology skills allows us to measure the human capital based on the technological paradigm that is directly linked to the issue of employment, job recruitment and vacancies. Thus, the issue of technological skills covers many areas: learning opportunities, education, certification of qualifications, existing qualifications within regions, employment, job vacancies, employers' needs for specific qualifications, etc.

A user-oriented tool

In the long term, Meta-Foresight will help stakeholders in European regions to adopt and/or develop the technologies and systems required to operate effectively in an intelligence-driven environment.

Meta-Foresight can be applied to individual industries, clusters and intermediary bodies, and guide authorities in formulating appropriate regional policies towards forging an integrated knowledgebased economy.

The Meta-Foresight platform is addressed to:

- regional authorities and intermediary organisations, supporting their efforts to elaborate regional knowledge-based development strategies and design appropriate actions, and
- companies, providing a comprehensive tool allowing to benchmark their performance, watch latest market and technology developments, forecast trends in the sector and identify centres specialising in their fields of activity.

Linking knowledge acquisition of one or several regions, in the five fields, technology foresight, benchmarking, R&D, technology watch and technological skills, the application provides the opportunity for a better understanding of current and potential strengths, weaknesses and comparative advantages of regions and companies.

▶ A co-operation-based system

The software platform and tools enable to achieve the creation of a system of regional intelligence by integrating the knowledge content of different information providers located into a region. Networking is therefore a prerequisite for the successful application of the Meta-Foresight project.

At the intra-regional level, the development of the regional intelligence platform will require both the exploitation of existing information tools, regional databases, etc and the active involvement of collaborating regional actors to support the tool's sustainable development.

An intra-regional network between all knowledge stakeholders (public authorities, companies, universities, business support organizations, etc) is necessary within a given region in order to achieve partnership procurement of knowledge and information about "who is doing what" and "who needs what" in the different knowledge fields of interest.

The transregional character of the application can, by providing cross-linking data from several regions, benefit the regional intelligent platform, just as the participation of other regions in the platform gives them and companies the opportunity to be benchmarked at European level.

An experimental project

The chance to think about and implement an integrated information and knowledge regional platform can be modulated to suit the needs of the regions as to specificities, data bases, networks and so on. Best use of the most innovative aspects of existing tools and regional systems, for example surveys and case studies.

The work plan starts from the learning process, involving survey and innovative practice case analysis in order to codify the approaches followed in these fields and incorporate the experiences of other regions; it then proceeds to create intelligence, through the development of the integrated Meta-Foresight model and its transformation into practice trough the Meta-Foresight software application and its testing, and concludes with the dissemination of the results achieved through the Internet, promotion brochures and publication of this user's manual.

This experimental project allowed us to identify some of the issues to be confronted when this kind of integrated regional intelligence platforms is set in train. The experience demonstrated that the tool can be adapted to suit the different regional situations, available data sources, networks of knowledge actors, culture of information dissemination, etc.

A dual information platform

Human and artificial intelligence are the basis of the Meta-Foresight knowledge tool.

A back-office team is responsible for drafting the report, the newsletters, etc. and for the supervision of the automated processes.

One of the key issues is the level of human intervention required (back-office team). It is difficult to quantify at this experimental stage the level of human intervention that will be required but it is generally believed to be "significant".

Other aspects and mainly the newsletters of the application are entirely automated and will require limited intervention once the parameters of the application have been set.

I.3. Maximizing the Meta-Foresight application in the regions

Lessons from the experimentation

The problem to be solved concerns the integration of information into the supply side, among independent information providers located in a region. Given that the different Meta-Foresight tools are managed by different stakeholders in each region, the operation of the Meta-Foresight application presupposes the creation of cooperation networks between them (regional authorities, universities, technology centres, chambers of commerce, etc.). The active participation and technology cooperation are especially important for the data collection phase, which is a corner stone for the implementation of the application.

There is a need for a change in end-user mentality regarding the benefit of territorial intelligence.

Raising awareness of regional intelligence is considered an important input of the implementation process of the regional intelligence platform.

Support understanding of practical and strategic outputs related to Meta-Foresight application; importance of explaining how far this integrated tool would be of practical value to companies and regional actors but also tackling the more subtle process of raising awareness of issues that would affect the future prosperity of regions and stimulating new thinking.

To predict the possible success of the application, it will be necessary to estimate the number and quality of the information sources, the level of back-office support and the number of users likely to apply for the service.

The system allows customisation of all services (web portal, electronic newsletters, confidential reports to companies) in order to reflect the framework of the region that runs the Meta-Foresight application.

Chapter II

The Meta-Foresight digital application: architecture and services

II.1. The architecture

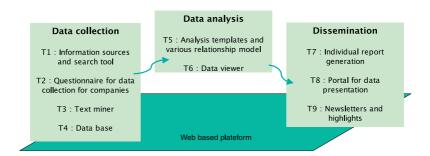
The architecture of the application includes three main parts, each of which is implemented combining human and artificial intelligence:

Data collection: defines appropriate information sources, 'visits' automatically pre-selected Internet information sources, collects the targeted information, and stores it in the database of the application.

Data analysis: elaborates and integrates the different pieces of information that have been stored in the database. It is based on human intelligence, as the selection of data at the previous stage.

Dissemination: diffuses the information of the database to the public. It supports the demonstration of business and sectoral facts on a web portal, the electronic submission of the Meta-Foresight confidential reports to companies, and the automated creation and posting of electronic newsletters to companies, agents and regional authorities.

The overall architecture of the Meta-Foresight application



Data collection

Four distinct tools are designed to facilitate data collection:

- A web-based list of information sources, local or global, and a freeware search tool (T1). It provides automated information retrieval through an external business intelligence tool equipped with dedicated agents for different types of databases.
- A flexible model for data collection (T2). The purpose of this tool is to define the targeted information accurately its structure, and the quantitative and qualitative variables used in order to collect information. The tool is an open question-naire covering issues of financial performance, strategy and management, products, market and competition, R&D and innovation, production technologies and ICT, supply chain and networks, and quality. In each of the these sections, information covers seven levels, the company, the region, the sector, the market, R&D results, foresight, and regional competences.
- A text-miner (T3) facilitates the transfer to the database of any useful information located on the sources. It allows the user to mark useful information, both qualitative data and qualitative comments, and then transfer it to the database, creating a separate record for each entry, while preserving information about the data source.
- A database (T4) stores information. The structure of the database is equivalent to the structure of the questionnaire.
 The administration of the database is such that its structure can easily be changed and adapted to different regional contexts and information providers.

Data analysis

Data analysis is the core of the intelligence to be provided and combines available information in meaningful ways. Two dedicated tools assist and facilitate data analysis:

- A series of analysis templates (T5) allow for the categorisation / integration of content in the database. A standard solution is provided, while the administration module enables the user to modify and/or create new templates. Each template includes a series of questions or themes to be answered by the Meta-Foresight team (MF-team). The tool can enter free text under the headings of the template. A variables relationship model is also included. This application follows and completes the analysis templates. The model provides guidance on the variables to be consulted to answer any question or theme in the templates. At the same time, the model influences the data-viewer tool by clustering quantitative and qualitative variables in relation to the questions and themes of the analysis templates.
- A data-viewer (T6) gives access to the content in the database. The scope of this tool is to allow a partial, step-bystep consideration of the information collected, so that the MF-team is able to process and draft the Meta-Foresight report, while monitoring each section of the template step by step.

Dissemination

Dissemination is organized as a portal with different sections presenting the work done by the MF-Team, the reports compiled, news and other highlights.

Automatic generation of reports (T7). Based on the work done during the analysis, and the step-by-step elaboration and completion of templates, this tool generates a comprehensive report. The report follows the structure of the analysis templates, but includes both benchmarking material and diagrams and the comments made by the MF-team.

- The portal for data presentation (T8) supports the Meta-Foresight tool with information, articles and links to organisations dealing with knowledge management.
- Newsletter (T9) is an application which facilitates the creation of electronic alerts and newsletters. The purpose of the newsletter is to inform a wider public about the type of information and knowledge created by the Meta-Foresight content integration. It is based on public reports focusing on the performance of regions, clusters and sectors.

The main tools are the MF-team which coordinates and manages all the processes and the portal server which is the web-interface component that puts together and combines the features and functionalities of the Meta-foresight services.

II.2 The services

The application provides three basic services:

- open services, through a web portal, focusing on industrial sectors and mainly addressed to regional authorities and technology intermediaries;
- creation and posting of electronic newsletters;
- customised services and confidential reports to companies, through the "toolbox".

Services to regional authorities and intermediary organisations

The **Open Portal** focuses on selected industrial sectors (industry 1, industry 2, etc.) in a particular region, and for each sector it provides continually updated information in five fields:

- Foresight (vision, key technologies, emerging industries, societal trends).
- R&D and innovation (current research, patent information, new processes/ technologies, regulations and standards),
- Market watch (news, market prices, market trends, market analysis/ reports).
- Benchmarking (regional index, selected indicators, best practices, competition practices).
- Competences (centres/ laboratories, experts, suppliers, partners).

The home page of the portal presents the more recent entries for each selected sector and field, while search possibility for elder entries is also available, by pressing the corresponding button.

The entries-stories are gathered by authors, who are specialists/ development organisations across Europe, delivered to the Meta-Foresight back office, and, following validation, are presented into the portal. The elaboration of the stories is based on a "data entry template", which includes: the title of the story, name of the author, date, summary and full story, related figures and photos, Meta-Foresight field, industry/sector focused, link to other Meta-Foresight fields, key words, and indication of the level of importance.

The Meta-Foresight application supports the **automatic creation of newsletters**, collecting information from the more recent entries of the portal for a specific sector. The newsletters are communicated, through e-mail, to the list of recipients and users of the application.

The Meta-Foresight portal is based on three management levels: (1) the administration, which is the Meta-Foresight back office, responsible for the monitoring of the whole application, the coordination of the regional technology cooperation network for the collection of the stories, the validation of the stories and the maintenance of the portal; (2) the authors/ organisations, who access the application through log-in process and complete the data entry templates that feed the portal database; (3) the users, regional authorities and institutions, intermediary organisations, companies, who may scroll the stories available or search for a specific topic in the database of the portal, though the search engine provided.

Customised services to companies

The **customised services to companies** refer to a comprehensive report, the Meta-Foresight Company Report (MCR), which:

- analyses the current position of the company within the sector and the region,
- identifies trends in the sector and the region that may affect the future performance of the company.

- highlights technology and market evolutions related to the sector, and
- informs on the competence centres at the regional and global level that may support the company on technology and innovation issues

The elaboration of the confidential Meta-Foresight company report starts with a company audit, based on a structured questionnaire, which highlights the main questions that a company wants to know in order to improve its technological and innovation capabilities. The information from the company audit is combined with data concerning the region and the sector where the company belongs, the markets, related technologies and research outcomes. The selection of this information is strongly based on the mutual cooperation between the regional organisations that own and manage corresponding data banks. The report combines inputs from different applications: assessment coming from benchmarking, statement of facts based on market watch, opportunities offered by R&D. trends based on foresight, and capabilities available in competence centres and human skills.

The report covers all major fields of the company activity, but mainly the fields related to innovation, technologies, and processes. It is structured into 8 sections:

- A. Financial performance
- B. Strategy and management
- C. Products
- D. Markets and competition
- E. Research and innovation
- F. Production processes
- G. Supply chain and networks
- H. Quality and standards

Each section includes 7 thematic fields, corresponding to data coming and examining the company, the region, the sector, the market evolutions, research results, and technology foresight and skills. In each section available data are both quantitative and qualitative, based on selected indicators and wider assessment and informed opinions on upcoming trends.

The Meta-Foresight portal is based on two levels of administration: (1) the administration, which is the Meta-Foresight back office, responsible for the coordination of the whole application and (2) the companies, who access the application through a login process and complete the data entry templates (questionnaire) that feed the analysis process to build the MCR (templates).

Chapter III

The Meta-Foresight digital application: technical process

III.1. The Portal

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The front page of the portal (PO-FP)



III. 1.1. From the consultation entry point

The Open Portal focuses on industrial sectors and is mainly addressed to regional authorities and technology intermediaries.

The home page of the portal presents the more recent entries for each selected sector and field, while search possibility for older entries is also available, by pressing the corresponding button.

✓ How to find information in the portal?



Press the "search" button on the up toolbar after selecting an industrial sector



The **Open Portal** focuses on selected industrial sectors (for example, Information and Communication technologies, Food industry portal, Textile industry portal, Metals industry portal, Plastics industry portal) in a particular region, and for each sector it provides continually updated information in five fields which have different categories of information:

- 1. Foresight (vision, future trends, key technologies, emerging industries, societal trends),
- 2. R&D and innovation (current research, patent information, new processes/ technologies, regulations and standards),
- 3. Market watch (news, market prices, market trends, market analysis/ reports),
- 4. Benchmarking (regional index, selected indicators, best practices, competition practices),
- **5. Competences** (centres / laboratories, experts, suppliers, partners).

✓ How to know more about an industrial sector?

 On the front page of the portal (PO-FP, page 38), press the button on the horizontal toolbar and choose one sector

✓ How to know more about a field in a sector?

 On the front page of the portal (PO-FP, page 38), press the button on the vertical toolbar

✓ How to know more about an article?

 On the front page of the portal (PO-FP, page 38), press the link "more..."

✓ How to know more about a specific field linked to an article?



 On the front page of the portal (PO-FP, page 38), press the "Relative category" links

The **Open Portal** provides you with a list of local and international companies in the region, and for each, it provides different types of information. The list is updated by the back-office.

✓ How to know about the local companies in the region?



 On the front page of the portal (PO-FP, page 38), press the button on the left vertical toolbar

✓ How to find out about international companies in the region?



• On the front page of the portal (PO-FP, page 38), press the button on the left vertical toolbar

The **Open Portal** enables the user to create a network of members who can maximise their activities and at the same time benefit from a strategic watch via a newsletter.

✓ How to see who are the members?



• On the front page of the portal (PO-FP, page 38), press the button on the left vertical toolbar "Members directory"

✓ How to become a member?



• On the front page of the portal (PO-FP, page 38), press the button on the left vertical toolbar "Become a member" and enter the details

The record will be visible on the web site after being checked and approved by the system's Administrators (backoffice).

III.1.2. From the administration entry point

The administration of the portals is supported by the **back-office**. This structure allows the author or other people to have access at this side of the portal through the control panel. The access is by a user and a password given by the back-office.



The **control panel** enables the user to make changes in the sector portal, to compose and send a Newsletter and manage the users (creation, edition, suppression).



The control panel of the portal (PO-CP)

A. Knowledge content management

Into a specific sector, the portal lets the user create, edit, rename or delete

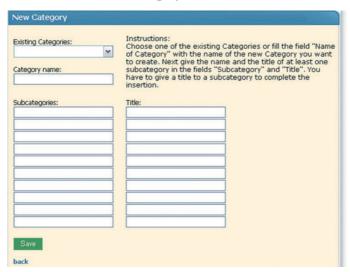
- a category
- an article
- a member
- a local directory
- an international directory

The sector control panel of the portal (PO-SCP)



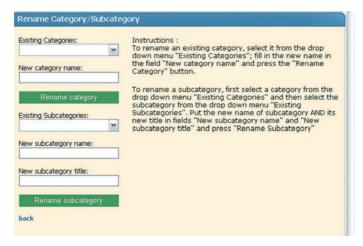
CATEGORY

✓ How to create a new category in a field



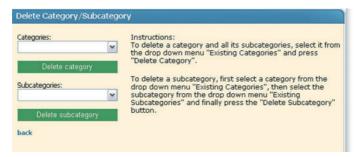
- On the control panel (PO-CP, page 42), press the link with the name of the sector
- Press the link "new category"
- Fill in the form: choose one of the existing categories or fill
 the field "Name of Category" with the name of the Category
 you want to create. Next give the name and the title of at
 least one subcategory in the fields "Subcategory" and "Title"
- Save

How to rename a category in a field?



- On the control panel (PO-CP, page 42), press the link with the name of the sector
- Press the link "rename category/subcategory"
- To rename an existing category, select it from the drop-down menu "Existing Categories": fill in the new name in the field "New category name" and press the "Rename Category" button
- To rename a subcategory, first select a category from the drop-down menu "Existing Categories" and then select the subcategory from the drop-down menu "Existing Subcategories". Put the new name of subcategory and its new title in fields "New subcategory name" and "New subcategory title" and press "Rename Subcategory"

✓ How to delete a category from a field?



- On the control panel (PO-CP, page 42), press the link with the name of the sector
- Press the link "delete category/subcategory"
- To delete a category and all its subcategories, select it from the drop-down menu "Existing Categories" and press "Delete Category"
- To delete a subcategory, first select a category from the drop-down menu "Existing Categories", then select the subcategory from the drop-down menu "Existing Subcategories" and finally press the "Delete Subcategory" button

ARTICLE

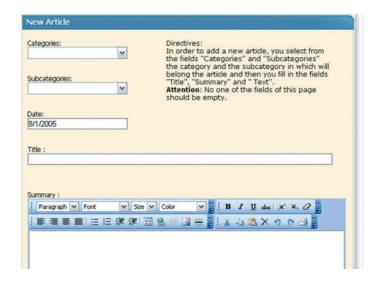
The Open Portal gives information through article-stories that are gathered by external authors or by the back-office. Those authors are specialists in a field or a sector. They can log in their stories themselves with the help of a "data entry template"

▶ The back-office is responsible collecting and validating the stories

The elaboration of the stories is based on a "data entry template", which includes: the title of the story, name of the author, date, summary and full story, related figures and photos, Meta-Foresight field, industry/sector focused, link to other Meta-Foresight fields.

✓ How to create a new article in a field?

On the control panel (PO-CP, page 42), choose a sector and select "new article" in the sector control panel (PO-SCP, page 43)



- In order to add a new article, you select from the fields "Categories" and "Subcategories" the category and the subcategory to which the article will belong and then you fill in the fields "Title", "Summary" and "Text". The field "Date" will help you to develop the Newsletter
- At the end of the form, you can choose related subcategories in order to distribute the article as widely as possible

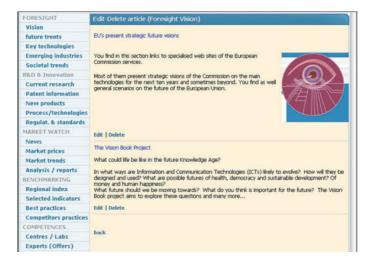
Infomation & Communications Tech	Food Industry	Textiles Industry	Metals & Plastics Industry
Foresight Vision	Foresight Vision	Foresight Vision	Key Technologies
Foresight future trents Key Technologies	Key Technologies Foresight	Emerging Industries Foresight	Foresight Emerging Industries
Foresight Emerging Industries	☐ Emerging Industries Foresight ☐ Societal Trends Foresight	Societal Trends Foresight Key Technologies	Foresight Societal Trends Foresight Foresight Vision
Foresight Societal Trends Foresigh		Foresight future trents	Foresight future trents
Current research	Patent information	Current research	Patent information
Patent information	Regulat. 8: standards	Patent information	New products
New products	New products	New products	Process/technologies
Processes / technologies	Processes / technologies	Process/technologies	Current research
Regulations & Standards	Current research	Regulat, & standards	Regulat, & standards
Market watch : News	Market watch : news	Market watch : news	Market watch : prices
Market watch : prices	Market watch : trends	Market analysis / reports	Market watch : trends
Market watch : trends	Market watch : prices	Market watch : prices	Market analysis / reports
Market analysis / reports	Market analysis / reports	Market watch : trends	Market watch : News
Benchmarking: Regional index	Benchmarking: Regional index	Benchmarking: Best practices	Benchmarking: Best practices
Benchmarking: Selected indicators	Benchmarking: Selected indicators	Benchmarking: Competitors practices	Benchmarking: Competitors practices
Benchmarking: Best practices	Benchmarking: Competitors practices	Benchmarking: Regional index	Benchmarking: Selected indicators
Benchmarking: Competitors practices	Benchmarking: Best practices	Benchmarking: Selected indicators	Benchmarking: Regional index
Competences: Centres /	Competences: Suppliers (Offers)	Competences: Experts (Offers)	Competences: Experts (Offers)
Competences: Experts	Competences: Centres /	Competences: Suppliers	Competences: Suppliers

- To conclude : press save
- None of the fields of this page should be empty.
- ▶ To draft the summary and the text use standard Word toolbar.
- ▶ Insert an image in the text frame by using the image insert function in the toolbar.

✓ How to edit an article in a field?

- On the control panel (PO-CP, page 42), choose a sector and on the sector control panel (PO-SCP, page 43) choose the article you want to edit and press the edit button
- · You have to select from the fields "Categories" and "Subcategories" the category and the subcategory to which the article will belong and then you fill in the fields "Title", "Summary" and "Text"
- None of the fields of this page should be empty.

✓ How to delete an article in a field?



 On the control panel (PO-CP, page 42), choose a sector and on the sector control panel (PO-SCP, page:) choose the article you want to delete, and press the delete button

MEMBER

✓ How to edit or delete a member in a field?

 On the control panel (PO-CP, page 42), choose a sector and on the sector control panel (PO-SCP, page 43) press the" Edit - Delete member" button



- To Edit:
 Choose the member you want to check and press "Edit"
 Make the change in the fields and press "Enter"
- ▶ The fields "Company name", "Company representative" and "e-mail" should not be left empty.
- To Delete: Choose the member you want to check and press "Delete"
- ▶ Be careful: there is no message of confirmation.

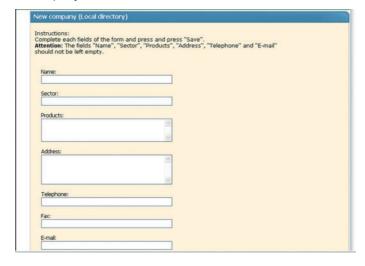
DESCRIPTION AND INTERNATIONAL DIRECTORIES

The open portal lets you enter information about the local and the international companies in a specific sector. This menu helps you to create a new entry, to amend or simply delete an old one.

▶ The method is the same for local and international directories.

✓ How to create a new company in a sector?

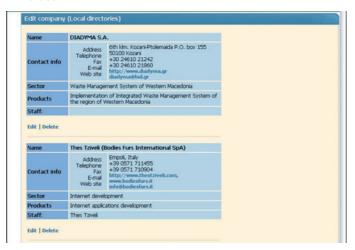
• On the control panel (PO-CP, page 42), choose a sector and on the sector control panel (PO-SCP, page 43) press "New company"



Complete each field on the form and press "Save"

✓ How to edit or delete a company in a sector?

 On the control panel (PO-CP, page 42), choose a sector and on the sector control panel (PO-SCP, page 43) press "Edit-Delete"

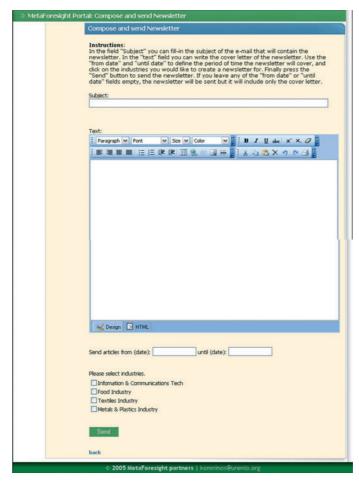


- The list of all the companies will appear
- Select the company
- Press the appropriate button: "Edit" or "Delete"

▶ Be careful: there is no message of confirmation.

B. Composition of the newsletter

The Meta-Foresight application provides for the automatic creation of newsletters by collecting information from the more recent articles in the portal for a specific sector. The newsletters are communicated by e-mail to the list of recipients and users of the application.



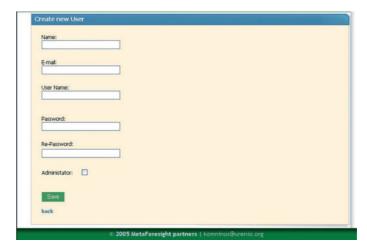
✓ How to complete the newsletter form?

- In the control panel (PO-CP, page 42), press "Compose and Send Newsletter". The Newsletter form is structured in 5 steps:
 - In the field "Subject" you can fill in the subject-matter of the e-mail that will be printed in the newsletter
 - In the "text" field you can write the cover letter of the newsletter
 - Use the "from date" and "until date" to define the period for which the newsletter is valid
- If you leave any of the "from date" or "until date" fields empty, the newsletter will be sent but will include only the cover letter.
 - Click on the industries for which you would like to create a newsletter
 - Finally press the "Send" button to send the newsletter

C. Members' and experts' account management

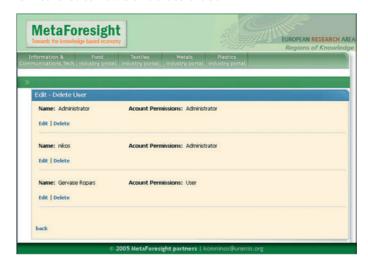
The administrator has special access to the user's management account(creation, alteration and suppression).

✓ How to create access for a new user?



• On the control panel (PO-CP, page 42), press "create new user". You must fill out the form with the name, e-mail, user name, and password. You decide whether or not this user will have administrator rights (if he can see the user's management)

✓ How to create "edit or delete a user"?



- On the control panel (PO-CP, page 42), press "Edit-Delete user"
- The list of users will appear
- Select the user
- Press "Edit" and the entry of the user will be accessible
- Press "Delete"

III.2. The toolbox

✓ Who can access the toolbox?	59
III.2.1. Reports' management	
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To enter the toolbox, you need a user name and a password given by the administrator.



The toolbox mainly creates a report based on a questionnaire. Basically we are talking about the questionnaire in the Data Quest part, which becomes a report in the Data Analysis part. There are two ways to use the toolbox:

- Looking at a previous report / questionnaire;
- Creating a new report / questionnaire.

✓ Who can access the toolbox?

• The back-office, the administrator and the companies who enter their data in the box

III.2.1. Reports management

✓ How can I find a report?

The horizontal toolbar proposes 2 solutions: a search tool and a list of all the existing reports

If you have information about the report such as the name of the company or the subject of the study



- Press "Search for a questionnaire" in the up toolbar
- Log in the information you are looking for
- Press "Search"
- You can search inside the report acronym or in the abstract.
- You can search for any text string and apply the keywords 'IS NOT NULL' and 'IS NULL' as well. If you leave the search item EMPTY all the records are returned.

To look at all the reports

- Press "All the questionnaires"
- · The list the reports will appear



- The correct way to complete or update a report is to first select a questionnaire from the "all the questionnaires" and then choose an option from the left column table.
- The list details different data: the report number for identification, the user name of the creator of the report, the report name or acronym, the status of the report.

✓ How can I have general information about a report?

- The "General Report Details" menu provides data about the identification of the report, the details of the expert and the report status
- The report acronym and the abstract of the report are the fields for the research tool. It can be useful to complete those fields in order to find them more easily.



- Select a report: The acronym of the report will appear on the right up part of the window
- Press on the Data Quest menu "General Report Details"

- Introduce the data
- ▶ Since it is considered that a report can not be completed in one go, the back-office can monitor its status. When a report has been checked, then it is considered as finalized and can be delivered to the company or to the persons it may concern in their official capacity.

✓ How can I create a report?

There are 2 possibilities:

- Press "Create new report" in the up toolbar
- Press "Create new report" in the bottom left toolbar "Other options"

The system will respond: "the report has been created successfully"

- ► The new report is the one with no acronym
- In the menu "All the questionnaires", you can select your report and detail the information about the report in the left toolbar "Data Quest: General Report Details".

✓ How can I delete a report?

- Select the report you want to suppress
- Press "Delete" in the bottom left toolbar "Other options"
- The system will respond: "the report has been deleted successfully"
- ▶ Be careful: there is no message of confirmation and no way to go back to the previous situation.

III.2.2. The Questionnaire "Data Quest"

The elaboration of the confidential Meta-Foresight company report starts with a company audit, based on a structured questionnaire which highlights the main questions a company wants to answer in order to improve its technological and innovation capabilities. The information from the company audit is combined with data concerning the region and the sector where the company belongs, the markets, related technologies and research outcomes.

✓ How is the questionnaire structured?

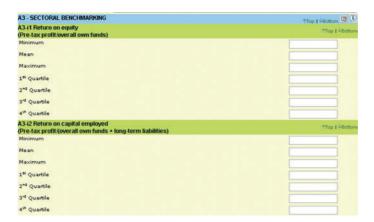
The questionnaire and the report display the same structure in 8 fields:

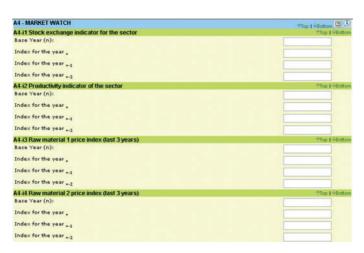
- A. Financial performance
- B. Strategy and management
- C. Products
- D. Markets and competition
- E. Research and innovation
- F. Production processes
- G. Supply chain and networks
- H. Quality and standards

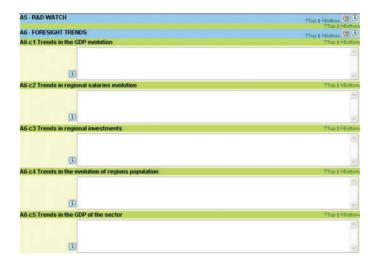
Example:



A2 - REGION		↑Top ↓Bottom ② ③
A2-i1 GDP per capita		Trop I veottom
A2-i2 Total number of employees		
A2-i3 Investments		
A2-i4 Productivity index		
A2-i5 Competitiveness index		
A2-i6 Share of added value to sal	aries	
A2-i7 Share of added value to tax	es	
A2-i8 Share of added value to gro	ss profits	
A2-i9 Average salary		
A2-c1 Financial performance of the	e region (comment)	↑Top I ↓Bottom
3	Food Safety Datafile-Highlights of Research wi Commercial Applications" Read More: Other Updated and Revised R	th ^







The whole questionnaire can be founded on the CD at the end of the guide.

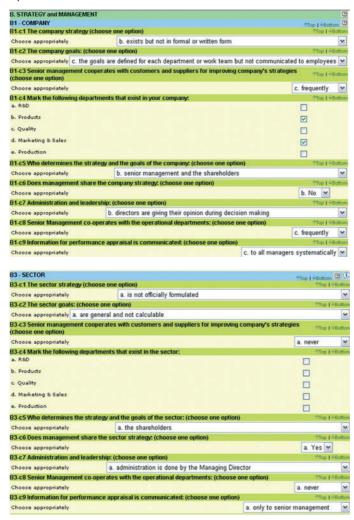
✓ How to complete a questionnaire?

- The selection of the information is strongly based on the mutual cooperation between the regional organisations that own and manage corresponding data. The report combines inputs from different applications: assessment coming from benchmarking, statement of facts based on market watch, opportunities offered by R&D, trends based on foresight, and capabilities and human skills available in competence centres.
- ▶ To move about easily in the questionnaire, it is possible to use "top" and "bottom" buttons, located between each field.

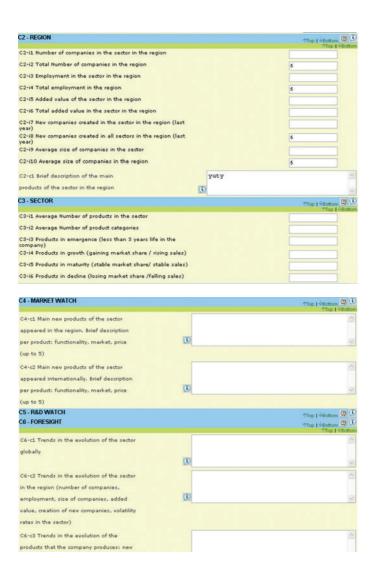
There are different ways to complete the questionnaire.

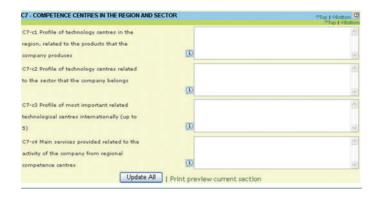
- with numeric answers
- with multiple choice answers
- with comments. This is free text that can be based on the text miner tool (see next point)

Example:



B3-c21 Existence of an operational connection between the department	s (choose one option) ↑Top \$\delta \text{Bottom}
Choose appropriately	a. Yes 💌
B4 - MARKET WATCH	↑Top 1 →Bottom 🗇 🕦
B4-c1 Most important facts concerning investments strategies related t	
Please type your comments	<u>^</u>
(1)	
B4-c2 Most important facts concerning employment strategies related to	o the company practices (up to 5) Top I Bottom
Please type your comments	A
(1)	<u> </u>
B4-c3 Most important facts concerning organization strategies related to	o the company practices (up to 5) Top Bottom
Please type your comments	
(3)	26
B5 - R&D WATCH	↑Top ↓Bottom 💟 🕦
B6 - FORESIGHT	↑Top ↓Bottom 🕲 🕦
B7 - COMPETENCE CENTRES IN THE REGION AND SECTOR	TTop #Bottom
D7 - COMPETENCE CENTRES IN THE REGION AND SECTOR	↑Top I ∜Bottom ① ↑Top I ∜Bottom
87-c1 Competence centres in the region	
related to business strategy, management,	
and training	
Update All Print preview c	
C. PRODUCTS C1 - COMPANY	(2) ↑Top I ∳Bottom (3)
NACE code	↑Top ∲Bottom
NACE Level A yy	
NACE Level 1	
NACE Level 2	55
C1-i1 Number of products	
C1-i2 Number of product categories	
C1-i3 Number of products in emergence (less than 3 years life in the company) (% of total products)	6
(% of total products)	
C1-i5 Products in maturity (stable market share/ stable sales) (% of total products)	
C1-i6 Products in decline (losing market share /falling sales) (% of total products)	
C1-c1 Description of most important	<u></u>
products of the company	
(3)	
C1-c2 Competitiveness of products is based on:	↑Top √Bottom
Choose appropriately	b. quality





✓ How can the text miner help you?

The text-miner facilitates the answer to the free text question. It allows the user to mark useful information, both qualitative data and qualitative comments, and then transfer it to the database. creating a separate record for each entry, while preserving information about the data source.

In order to use the text miner:

- Press the information balloon near the free text frame
- A selection of web sites appears
- ▶ Those web sites are selected by the back-office.

Inside those web sites, you can select some sentences:

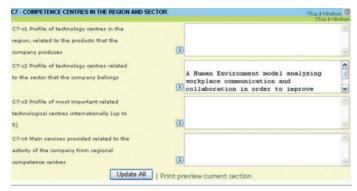
• Press "Select marked text" button, your choice appears in vellow



- You can make any selection you want in different web sites.
- When you have selected the information you need, press "Compose"



- The text chosen will appear with its link (URL) on the up part of the frame whereas in the bottom frame you can make some changes and add other comments
- When your comment is ready: Press "Finish"



- The text will be located in the questionnaire
- ▶ The help bubbles are not available in the current version of Meta-Foresight. This is an optional function that could be activated later.

III.2.3. The Data Analysis



The Data Analysis is a tool for drafting and editing the report. It is based on human intelligence, such as the selection of the data inside the questionnaire.

Like the questionnaire, the Data Analysis is structured into 8 sections which are detailed in 7 thematic fields:

- The company
- The company within the region
 - The company within the sector
- Market watch
- Research and Development watch
- Foresight
- Competence centres in the region and sector
- Conclusion of each section
- ▶ All the thematic fields are not necessarily presented in all the sections. It depends on their adaptation to the subject. For example, there is no "R&D watch" in the section B. dedicated to strategy and management;
- Click on the cross to work with the related thematic fields.

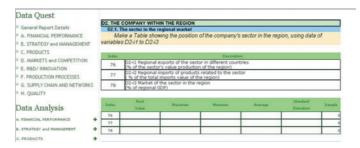
✓ How to finalize the company report?

The tool gathers the data the back-office and the company have integrated into the questionnaire (Data Quest) and presents them in a way that helps the expert writing his report. The tool helps you to fill in all the fields in all the sections in the Data Analysis menu.

Press one thematic field in a section and follow the instructions

There are different ways to present the data:

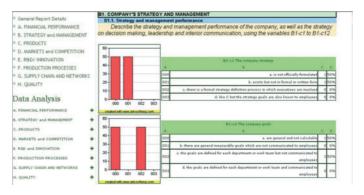
tables



The tables have 6 entries: the real value of the indicator for this company or this region, the maximum, the minimum and the average values and the standard deviation are calculated by the system automatically based on the data integrated by other companies for other reports. Thanks to the sample we know how many data are taken into account

In a table, the comparison between companies takes place automatically.

charts



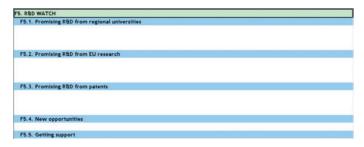
data viewer



The data viewer shows the comments made in the questionnaire by pressing the small icon on the right side of the toolbar

After writing each comment and analysis, it is necessary to update the field by pressing the corresponding button.

✓ How to print the report?



Each field in a section can be printed separately by pressing the link "print preview current version" at the end of each page

► The whole data analysis can be founded on the CD at the end of the guide.

The project partners

The Urban and Regional Innovation Research Unit (URENIO) is a university laboratory for the promotion of research and supply of scientific and technological services. URENIO is affiliated to the Department of Urban and Regional Planning and Development in the Faculty of Engineering, Aristotle University of Thessaloniki.

URENIO's research focuses on territories that base their development on R&D, technological innovation, technology-intensive companies, technology infrastructure, and knowledge and information networks. Central research theme is the cities and regions of innovation including knowledge clusters, technopoles and science parks; regional innovation systems and strategies; digital innovation spaces and intelligent cities. A principal feature of these innovative regions is their capacity to create environments which facilitate innovative behaviour by the organisations which are members of this milieu, turning knowledge into new products, disseminating information, building organisational learning, integrating skills, and in the end generating innovations.

Fundecyt has a central role in the economic, structural and innovative strategy development in Extremadura. It is a non-profit institution and its main objective is to stimulate co-operation between firms, universities and public administrations in order foster regional development. It is an initiative launched with the support and guidance of the Regional Government, the University of Extremadura and two regional financial Institutions. Nowadays, the institution has more than 50 employees, of whom around 15 are directly involved in research and technological development activities.

The Observatory of Innovation - Cardiff Business School is the largest academic department of Cardiff University and is acknowledged as one of the leading business schools in Britain. The Observatory of Innovation, based at Cardiff Business School, carries out research, consultancy and project management on innovation and economic/sustainable development across Europe with a strong affiliation with the Welsh economy.

Infyde, is a private consulting firm specialising in the definition and start-up of territorial development strategies in regions and areas with development problems, placing particular emphasis on technological innovation and training seen as strategic resources in development processes and on policy and programme evaluations as an instrument for improving the efficiency of public sector action. The company's work team comprises experts in territorial and urban planning, in the design and management of industrial policies, business promotion, training and technological innovation and on-site techniques for evaluating and monitoring programmes.

The Destree Institute is a non governmental and not for profit organisation, located in the Wallonia Region. Its action is directed to the promotion of four main fields: research, information and technology, prospective and foresight, and citizenship.

Benefiting from its specific experience, and from its contacts with international networks The Destree Institute created a prospective and foresight department. It has been involved, as an expert or as a partner organization in different foresight and regional development programs launched by the European Commission, the European Parliament, the Assembly of European Regions, DATAR, the Wallonia institutions. The Destree Institute offers research capacities and consulting services.

Notes