



REGNET

Cultural Heritage in REGional NETworks
IST-2000-26336

REGNET trial service and recommendations

Deliverable D11

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Cultural Heritage in REGIONAL NETWORKS

Deliverable Report D11

REGNET trial service and recommendations

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Abstract	This deliverable contains the final analysis of the REGNET system based on the validation carried out in Work Package 4 (and Work Package 3 – start of validation). It describes the most important findings as well as recommendations for future strategies		
Keywords List	Validation, assessment, demonstration, SWOT analysis, recommendations, future strategies.		





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Executive summary

This document is dedicated to WP 4 “Demonstration, Assessment and Evaluation”, task 4.3 “Analysis of the trial service, Assessment and Evaluation of the system”.

Mainly, to prepare this report it has been taken into account:

- Deliverable Report 6, containing a market analysis and information about competitors.
- Deliverable Report 7, containing a validation process and information about the demonstration phase.
- Questionnaires filled during the validation phases, which provide comments and suggestions made by the testers
- Technical Responses, from where it is possible to find out the tasks that are viable or not viable to implement.
- Access Statistics, providing information acceptance of the product.

Once all this information was collected, an analysis was needed in order to establish the actual status of the system. In this stage, we established the major advantages and disadvantages of the REGNET-System compared to other similar products in the market. Once all this process of analysis finished, there were identified the major weaknesses and strengths of our product.

Taken into account this analysis and the market situation and probable evolution, we worked out the opportunities and threats that the system will have to face in the future. After these two stages, a complete Swot analysis was made.

When the whole process concluded, we had the information needed to set our conclusions and recommendations.

As conclusions, we established ten statements which aim is to reflect the actual situation of the system, highlighting its major advantages and the features where more work and effort is needed.

The recommendations are based on these statements and the opportunities and threats previously identified. Knowing the actual status of the system and the probable evolution of the market, we could set these recommendations which should be taken into account when establishing future strategies for the improvement of the product.

The previous paragraphs have supplied a general overview of the different stages of the whole process of analysis, evaluation and recommendation. Now, it is necessary to comment some features that must be taken into account while reading this report:

- All the comments and suggestions made by testers have been analysed in the correct context, knowing that it much more easy to highlight the weaknesses of a tool than its strengths.
- Most complaints were related to very particular details of the tools, not with the general behaviour.
- The opportunities and threats, which have been pointed out in the SWOT analysis, are the result of a wider analysis in which we took into account several external factors.

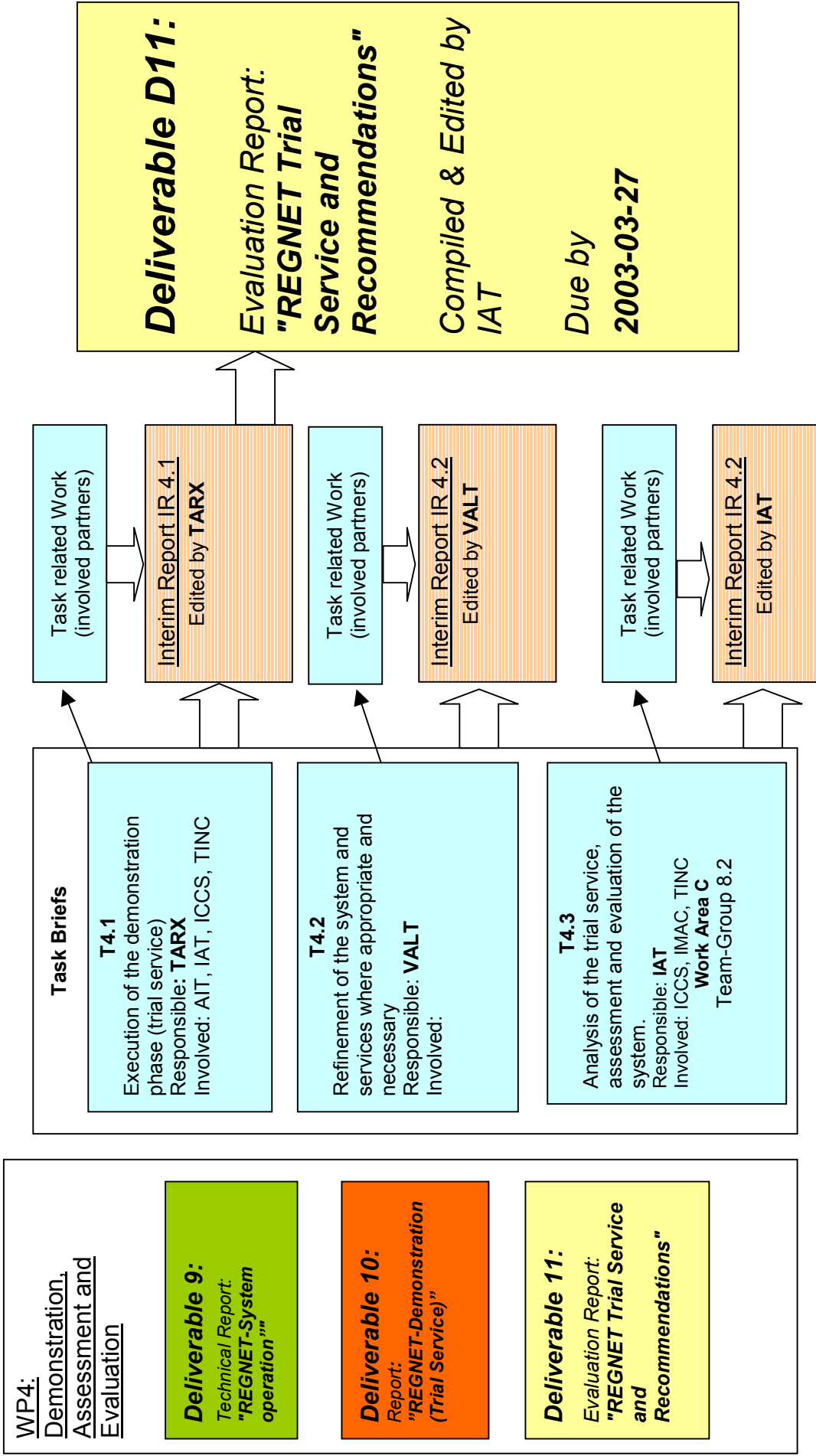
The recommendations are related to the opportunities, threats, weaknesses, strengths and the more probable situations the system will face in the near future.



Situation

	<i>Demonstration, Assessment and Evaluation (WP 4)</i>							
	Task	Leader	Document	MM	Task	Leader	Document	MM
Execution of the demonstration phase (trial service)	4.1	TARX	IR 4.1 → D9	55				
Refinement of the system and services were appropriate and necessary	4.2	VALT	IR 4.2 → D10	20				
Analysis of trial service, assessment and evaluation of the system	4.3	IAT	IR 4.3 → D11	6				

The methodological basis for WP 4 was worked out in WP 3 (T 3.1) – adaptations and additions were made in order to fit the goals of WP 4. Taking all user feedback, heuristic evaluation results and other tests performed into account final conclusions and recommendations will be drawn to come to make final assessment of the system. All issues related to the operation of the trial service (CSCs) will be handled in D9; D10 describes the refinement of the system and services according to the test results.





1 Introduction

1.1 Purpose

In order to assure that the requirements of potential customers will be met, an analysis phase is needed to establish the actual status of the system and to set the most important and probable situations the product will have to face in the near future. It is essential to be aware of all the advances that are taking place in this market and to set the future strategies needed to develop a more competitive product. Such an analysis should be made in course of WP 3 and WP 4. This report describes the final effort carried out accordingly within task 4.3 "Analysis of trial service, assessment and evaluation of the system". It concerns the testing results of the second validation phase (as a continuation and adjustment of validation efforts started in WP 3) and provides a detailed evaluation and analysis of the system's use and functionalities. As well the functional and business aspects as the technical aspects will be addressed. Together with the conclusions, a set of recommendations and guidelines will be set up in order to pave the way for future developments and initiatives. Based on feedback directly gained by the users (questionnaires, external observation techniques, inbuilt feedback, facilities, log files, etc) an assessment was done as well as an analysis of the system operations. In detail this work package covers the following tasks:

- collection of all user and system reactions which have been logged or received,
- analysis of system behaviour and users responses,
- a SWOT analysis should help to detect weak points within the operation.
- recommendation for the future service.

For the preparation of this report the following issues were taken into account:

- competitors: an identification of the major competitors in the cultural heritage market, their characteristics, the technologies they use and the fields they cover,
- technologies: knowing the best technologies and the possibilities they offer, it will be possible to establish the new features that can be included in the system and how to improve the existing ones,
- market status and evolution: it is very important to know the actual status of the cultural heritage market, the usage of Internet and the interest for new products. Also, we have to think about the evolution of all of these issues and prepare our system to it.
- customers needs: from the validation processes we can get very useful information about the needs we are trying to meet, taking into account not only the bugs detected but the suggestions proposed in order to develop a more competitive product, fulfilling as more requirements as possible.

The actual analysis was based on this information collected and the additional consideration of internal factors as well as external ones. Internal factors refer to the actual status of the system and should – by measuring – point out the strengths and weaknesses. External factors are factors which could affect a system, again by measuring to become opportunities and threats. Which such a SWOT analysis conclusions and recommendations for future strategies could be derived.

1.2 Overview and document structure

This document is focused on analysing the actual situation of the system and setting recommendations for the future strategies. The first section of this report deals with business issues, establishing the objectives and requirements.

In the second part of the document the methodology followed is explained, pointing out what the assessment is focussed on. There it is also explained what the testing consisted of, where it took place and the behavioural observations made by evaluators.



In the next section it has been included all the information related to the suggestions and comments made by testers and the technical response to these proposals. There it also can be found the access statistics, an analysis of the system visits, which has been logged month by month.

The last part of this document includes the SWOT analysis with a detailed list of strengths, weaknesses, opportunities and threats. There can also be found a section with an approach of a financial plan for the CSCs, the conclusions and recommendations. Conclusions are summarised in ten statements that deal with the actual status of the system. Recommendations are based on these conclusions and the most probable situations the system will be involved in the near future.



2 Parameters of the REGNET-System

Assess the “success” of a system or product demands a definition of objectives, goals and envisaged users. These are the parameters for the assessment which should be recapitulate in the following chapter before selected the most important critical success factors and thereby the focus of validation. It is based mainly on previous deliverables.

2.1 Business objectives

This section deals with the REGNET objectives and as it was mentioned in previous deliverables. These are:

- development of a service infrastructure which enables business to business (B2B) transactions as well as business to consumer (B2C) transactions
- development and use of existing - locally held - electronic catalogues (OPACS: Online Public Access Catalogues) referring to cultural & scientific objects contained in libraries, museums, archives, and galleries, as well as to goods and services.
- integration of a distributed search and retrieval system to achieve a 'virtual union' catalogue of all OPACS and product/service catalogues held locally
- definition of Information Products and Services including necessary 'supply chains' and the connected business processes and functions to deliver digital and physical goods (to provide high quality services an editorial committee will be installed)
- development of thematic access to the digital collections using the topic map concept
- set-up of a legal framework necessary for all business transaction on the B2B and B2C level (containing payment features, copyright systems, authentication control, etc)
- integration and test of existing components, standards, and methods in the field of distributed search and retrieval and e-commerce
- access to the REGNET-WEB services with mobile devices via de facto standard protocols (such as wireless application protocol, WAP, UMTS etc).
- run a trial service (demonstration phase) which should be followed by a regular service.

For further information, please consult D6.

2.2 User and their requirements

This table is to summarise the requirements of the main potential customers:

Potential Customers	Requirements
Museums	The main interest of museums will be the management (administration) and presentation of their Collection(s) and related events and publications. Tools and services are needed which cover all basic functionalities – not only additional ones like e-Publishing (Internet Publishing). Basic features needed are data and object management (admin databases in order to registrate, edit and delete data), address and event management. Besides the support of traditional processes and functions the tools must enable the offer of new products and services to a broader target audience– an enhanced visibility is an important issue. Accordingly all marketing activities must be supported e. g. Through publishing of information about the museum and their collections, to establish a



	community respectively co-operation with similar organisations etc. According to feedback gained during first demonstration activities and events consultancy is needed in order to inform about the usage of standards, digital rights management in the Internet environment and e-Commerce possibilities besides the classical museum shop.
<u>Galleries</u>	The needs of art galleries are determined mainly by the commercial aspect of their work: they need support in handling all necessary aspects of business transactions and tools for the usage of the Internet as a marketing and distribution channel (e-Commerce) – especially smaller galleries. Services could comprise information services as well as new interactive (e. g. newsletter) and transactional services (e-commerce systems, business platforms, retrieval solutions/databases). The artists himself needs tools to digitise and publish his works and textual and background information (e. g. exhibitions, related products) and to become part of a network to promote his work online and offline (publishing and search facilities). The e-Commerce aspects will be of great importance: individual works should be included and promoted in online auctions and e-Shop, new business opportunities could be supported by features to find and contact potential promoters for and sponsors.
<u>Archives</u>	Archives wants to offer an access to its databases (search). Besides the general need for the support of the data management which is valid for all domains a special focus of archives (especially) commercial ones will be professional solutions for the copyright handling, e. g. watermarking solutions.
<u>Libraries</u>	Libraries wants and must offer an access to their collections (specially for researchers and students). Accordingly the need of (professional) users/customers in libraries will refer to the data management combined with search functionalities also for an in-depth research which is not supported by traditional library information system. In order to point out needs not already fulfilled by existing library systems one could state that libraries need mainly support in manage also business transactions and create and offer services for special target groups, e. g. e-shops, in-depth search, special databases for selected materials etc...

Table 1: User groups and requirements

All CH organisations listed before need access facilities to distributed heterogeneous catalogues, need to offer their services and products and to co-operate in the CH domain. The Internet is revolutionising the ways in which all organisations work. The ability to generate new services and to interact with audiences, visitors and customers in new ways represents an exciting opportunity for all those seeking to contribute to and enhance cultural and learning experiences. The awareness that there is a need to create new online services, targeted to user groups, leads to specific requirements supporting services and systems must meet: to enhance and improve the access to the collections, to support multilinguality and to consider and support actual standards and rules in the digital environment (e. g. copyright management, protection of digitised resources).



2.3 System functionalities

In this chapter we describe the features of the REGNET-System as they are on offer to the customers.

Portal

This functionality offers an access point to the system. It integrates all the modules giving the appearance of a single product.

Data Entry, Search and Retrieval

This tool deals with the database system, offering the functionalities needed to get, insert and modify the information.

E-Shop

This module offers an on-line shop where customers can search for every product included in the e-shop database.

E-Auction

This tool provides an on-line functionality that allows customer to bid for Art Products.

E-Procurement

This tool is aimed to content providers to manage their contents and to organise them.

Catalogue Management

This tool is aimed to wholesalers in order to allow them to offer large quantity of a product at a lower price and to get in contact with content providers.

E-Publishing

This tool offers the opportunity of producing personalised products and services for the customers. These products are mainly off-line (e.g. CD-ROM).

Topic Maps

This functionality allows content providers to generate a dynamic tree with their contents.

REGNET Broker

This tool establishes a link between Data Entry Database and E-Shop Database, allowing an easier way to integrate all data.



3 Assessment plan and methodologies

3.1 Goals of assessment and validation

The need of an assessment and validation process is based on:

1. To establish a link between end users and technicians in order to have a bi-directional way of communication. As a result of this statement, this communication will result in an improvement of the tools to meet the needs of the end users.
2. Assessment is needed to take into account the suggestions and comments of the tester according the appropriate context. Thanks to this, it will be possible to set priorities for the future improvements.
3. To report the current status of the system so to determine the most appropriate time to the market.
4. Detection of possible anomalies in the behaviour of the system.
5. To report the maturity of the system and its components.
6. To estimate a calculation of the benefits of the use of the system.

3.2 Focus of assessment

The assessment process is focused on reporting the actual status of the REGNET-System and on establishing a guideline of recommendations.

Taking into account the iterative process which consisted of usability testing, technical response and a second usability testing, it has been reported the actual status of the system. According to this actual status and the market preparation study (D6) carried out for the project, we have made a SWOT analysis, identifying external and internal decisive factors in order to work out the most important strengths and weaknesses of our tools and the opportunities and threats that we will have to face in the future.

The final aim is to succeed in the actual and future market.

3.3 Assessment methodology

The assessment process consist of:

- Usability testing
- Behavioural observations
- Meetings Working Session
- Technical Response

3.3.1 Usability testing

We have collected the information from tester in four different formats, as follows:

<i>Document Type</i>	<i>Description</i>
General Questionnaire	General information about the tester personal data: <ul style="list-style-type: none"> • Gender • Age • Educational level • Working Place



	<ul style="list-style-type: none"> • Profession • Computer knowledge • Frequency using computers • Familiarity with the project Personal opinion related to: <ul style="list-style-type: none"> • Design • User support • Impression
Scenarios Questionnaire	Here to describe what task was the tester asked to perform, what he/she did and further comments/suggestions that were made.
Brainstorming Session in Den Haag	After being trained in the different tools, content providers took part in a brainstorming session where they reported the main findings and their impression. The major advantages and disadvantages of the tools were also highlighted.
Free-style Working Session	After Toulouse meeting, where new tools and versions were presented, partners tested them and we received free-style documents.

Table 2: Document types

Examples of these documents can be found at the Appendix I.

3.3.2 Technical response

After presenting the first validation report at Toulouse Meeting, a technical response was requested to establish a bi-directional way of communication. They sent us their comments to the suggestion of the testers, pointing out which new features have already been included, which suggestions are not viable to implement and those which are going to be taken into account and implemented in the near future.

This technical point of view is very important in order to get an overview of the actual status of the system and the improvements that could be implemented. As evaluators this is a very useful information that will be taken into account when setting our recommendations.

The technical response was collected in different formats and not all the responses were as complete as others. The format that follows this section has been structured according to the feedback received from responsible technical partners and it has been tried to do it as homogeneous as possible.

3.3.3 Behavioural observations

Besides the more formal assessment methodologies applied during the REGNET project, three of the responsible partners for work package 4, TARX, IMAC and IAT applied "behavioural observation" techniques. This became possible through the organisation of several multiple days demonstration and test meetings attended by all the content partners which produced a lot of usable impressions.

In many cases highly sophisticated means are used to carry out this kind of usability testing (user actions logging via movable cameras, "look through" walls, etc.). In this case it is customary to explain the end user what will happen (they are filmed, etc.) and they are asked to give their written permission to do this. In the REGNET project, more modest methods were used. This consisted of a thorough observation, by the responsible WP 4 partners, of the end user behaviour during special demonstration and test sessions organised at three content providers meetings (Mechelen, Den Haag and Toulouse). The end users were not informed of this initiative. This was not needed because there was no recording (for reviewing afterwards) of the reactions and no danger of privacy infringements could occur.

Factors that were taken into account for contributions to a judgement of the technical modules were:

- The frequency of the comments on a subject



- The time spent on a test sequence
- The elapsed time before asking for assistance
- The priority of testing (which modules were selected first)
- The way of commenting (aggressive remarks, smooth reactions)
- The personal interest, background, domain (museum, art gallery, etc.)
- The "marketing" influence by technical presenters

The use of this behavioural observation methodology proved to be very valuable as an additional input for the final SWOT analysis.

3.3.4 Meetings working sessions

There were held three special Content Providers + Technical Meetings: Mechelen (September, 2002), Den Haag (November, 2002) and Toulouse (February, 2003).

During these sessions content providers were introduced the new tools and were trained in their usage. Assessments were collected during these special sessions.

Mechelen Meeting. At this meeting all content partners were present with part of the technical partners covering all technical modules.

We used for the first time the rotation principle: 4 work groups of content providers, 4 workstations (covering a set of modules) in the same room everyone manned with a technical responsible, 4 alternating sessions:

Session 1: workgroup 1 with workstation 1, wg2 with ws 2, ..

session 2: wg4 with ws1, wg1 with ws 2, ...

Den Haag Meeting, The content providers were divided again in 4 groups and presented the main improvements of the tools at physically separated location. The main difference with Mechelen Meeting was that that the sessions in Mechelen were more "ex cathedra", showing the modules to the content providers while De Haag was already more "hands on" on the modules.

Partners were also trained in filling the questionnaires correctly and they carried our several between them. After this, a brainstorming session occurred and the main advantages and disadvantages of each tool were pointed out.

All these material, along with further testing that content providers did to the final users and to the potential customers compose the first phase of the validation.

Toulouse Meeting, content provider did individual testing of the new versions of the tools and of the new tools presented there. It was completely "hands on" and at individual workstations. Afterwards, they were required to report their impression in free-style documents. All this material, along with further contribution can be found at the second phase of the validation.

3.3.5 Access statistics

We have consulted the REGNET web pages (www.regnet.org) where there is a link to the access statistics of the System. This statistics have been taken into account in order to evaluate the evolution of the acceptance of the product among customers. We have made a comparison between the last four months and we have reached to a final consolidation of the figures.

3.4 Test user

The following figures show profiles of test users. These data have been extracted from the general part of the questionnaires, used in the first phase of the validation process.

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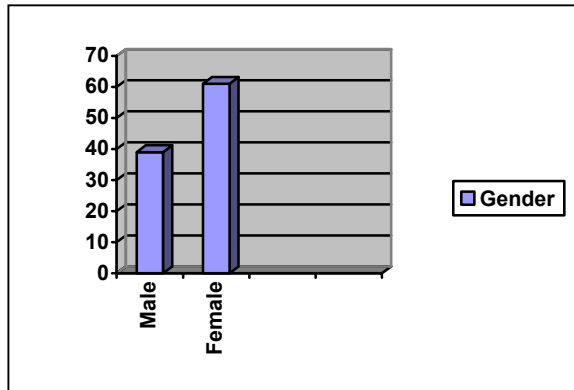


Figure 1: Gender of test users

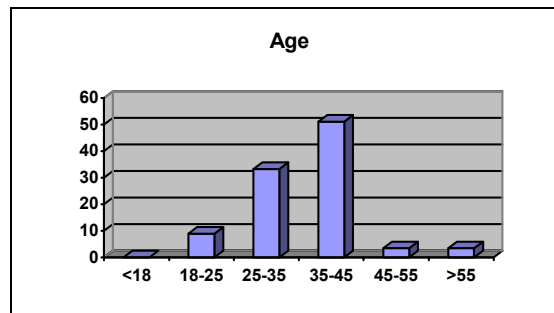


Figure 2: Age of test users

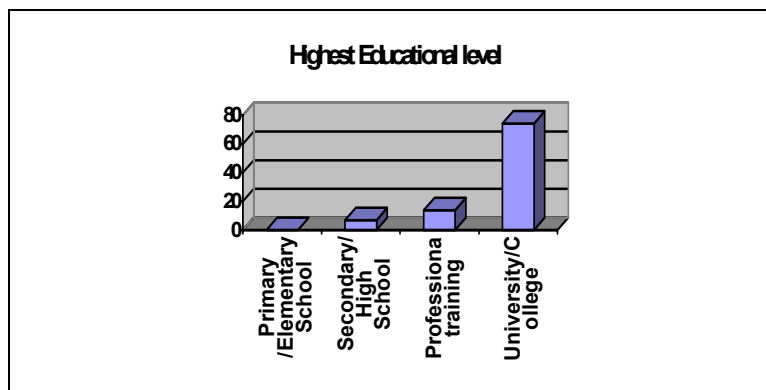


Figure 3: Highest education level of users

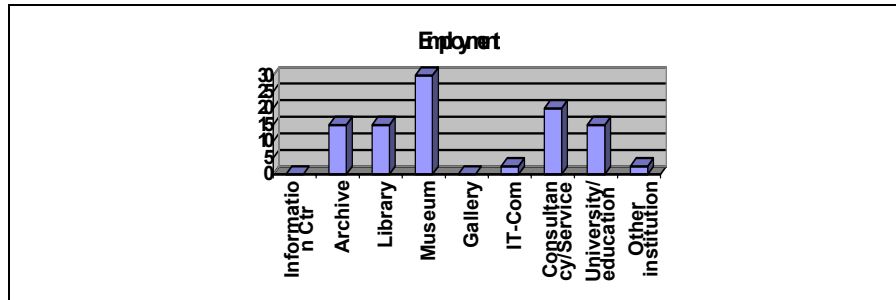


Figure 4: Employment of users

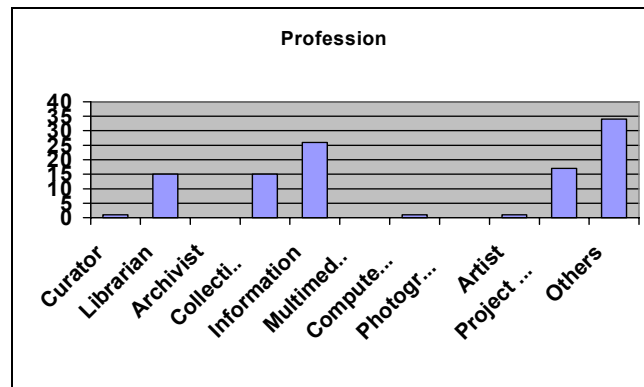


Figure 5: Profession of Users

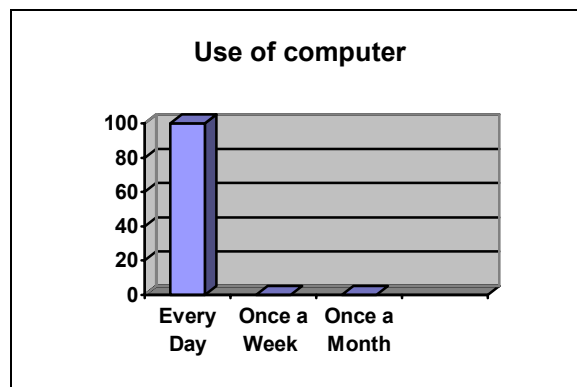


Figure 6: Experience in use of computers of Users

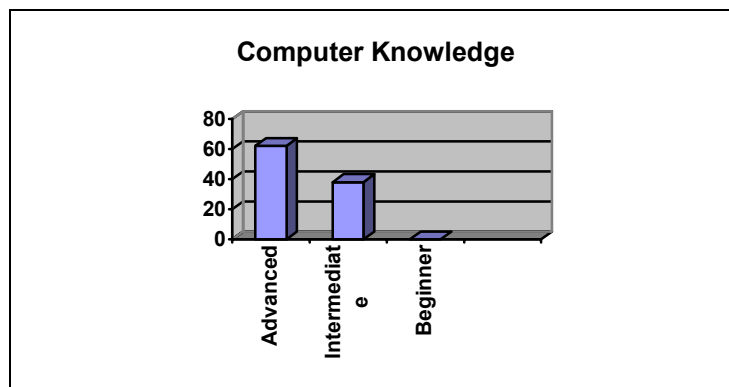


Figure 7: Computer knowledge of Users

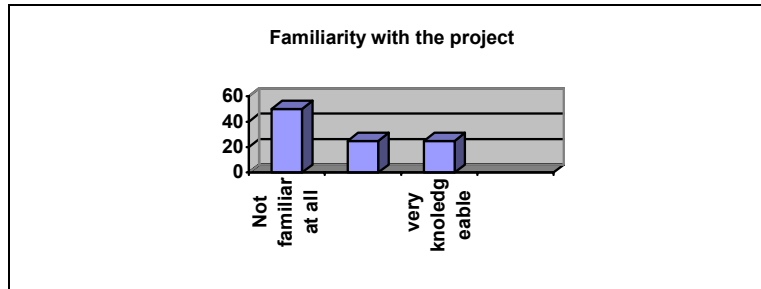


Figure 8: Familiarity with the project of users



4 Validation results

4.1 Usability testing: Validation phase I

This phase covers the period from 21st November to 15th January. Content providers were request to fill the questionnaires, to interview final users and potential customers and to send as their contribution.

4.1.1 Test results

4.1.1.1 Introduction

This section is aimed at internal partners of the REGNET project to detect the strengths and weaknesses of the different tools. Moreover, there have been added a section regarding further comments and suggestions made by the testers. Some of these suggestions have been made to improve the performance of the system and others to solve the detected problems. Technical partners should take this suggestion into account in order to fulfil the needs of the end users.

This validation process is based on different types of questionnaires and on the Working Sessions carried out in Den Haag Meeting. We have received the following contributions:

- Portal: 6 questionnaires
- Data Entry, Search and Retrieval: 14 questionnaires
- Procurement: 4 questionnaires + 4 bugs reports
- E-shop: 5 questionnaires
- Auction: 10 questionnaires
- 4 Report on Working Sessions in Den Haag (comments on every tool)

4.1.1.2 Portal

4.1.1.2.1 Strengths

One of the major advantages of this tool is its internationalisation. Being translated into many languages, the portal becomes a very useful and interesting tool. It also fulfils the requirement of showing an overview about the portal content.

Regarding the interface, it is considered user friendly and it has been highlighted its capacity to adapt the appearance to the current user. Personalisation of the layout is deemed to be an important advantage.

4.1.1.2.2 Weaknesses

Navigation

The most important disadvantage identified in the portal is the scarce mobility it offers, as the contents aren't integrated in the new version of the portal. The links from the Portal have to be actualised.

It is also very important to point out that the page does not give enough references to the Cultural Heritage. There are no graphical /visual relation with Cultural heritage domain, with the exception of the name.

Now it is not evident that in REGNET can be seen Bulgarian Contemporary Art, Russian Art, Spanish Art, Italian Renaissance, etc.

It has also been mentioned that there are no links to other cultural heritage sites.

Interface

Although the interface is considered friendly for an end user, it has been reported that it looks like a not really professional site and some adjustments are needed. In addition to this, in some partners' opinion the portal is not original in design terms. They think it seems more a business company's



interface than a cultural project. Furthermore, they found out that there is no policy of disclaimer. Those things are considered fundamental for a professional and commercial portal.

According to partners' opinion, the different sections are organised in an illogical composition (too many items of different priorities). For example, Collection and search collections are not of the same logical meaning. The first is the goal of the action performed; the second is just the mean to reach it.

It has also been mentioned:

- The homepage is not attractive enough, being completely static.
- Very few images are present and not optimally related to Cultural Heritage.
- The portal is very blue.

Internationalisation

Although multilingualism has been considered as an advantage it has also been reported as not complete.

Help

No real help on topics. It means no help online to the item the user is working on at that moment.

Help function not yet implemented.

4.1.1.2.3 Further Comments/Suggestions

Navigation

When a feature of the portal is not yet implemented a message stating this should appear. At this moment is confusing for the user: they do not know if their own system is not functioning or that something is missing in the Portal itself.

There should be added images referring more to our domains.

Mouse pointer should change in appearance when touching a link.

While navigating through the portal is not clear that there are several dB coming from distributed European Cultural Heritage sites, among the most important in Europe, so there should be added a page in the portal sponsoring the cultural institution associated.

In order to support the navigation quality, it has been suggested to include a web-site map.

In partners' opinion, it is necessary to present:

- What could be seen in the REGNET-System? (Themes, arts, archives, museums, etc.)
- What could be expected from REGNET?

Interface

The portal could be improved displaying some Flash resources, in order to be more attractive.

To approach to a professional site, it has been suggested:

- Give more strength to the ultimate goal of REGNET (what are we selling).
- More support for newcomers. The site should be tailored to meet the needs of newcomers. The home page should be dedicated to them, and then a button "Members" could be added for registered and expert members.
- The colours are too uniform, no visual priorities obtained through different colours.

It has also been drawn attention to the need of two different views: end user and professional.

Specifics like WAP should be highlighted. It has been mentioned that it only appears in the registration process.

The system should refuse a white background, as the font colour of the links is white too.

Internationalisation

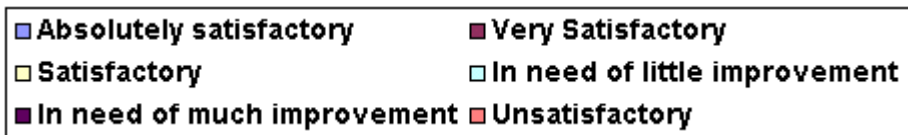
The multilingual features should work impeccably because this is the main entrance for the end users. A further check of this is needed: e.g. the fact sheets are still in English when using the Portal in the Dutch language. Furthermore, some of the tools are only in English and it is possible that some people couldn't understand some specific words.

4.1.1.2.4 Bugs

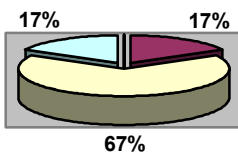
It has been reported that layout customisation has some bugs (e. g. no reset possibility).

4.1.1.2.5 Statistics

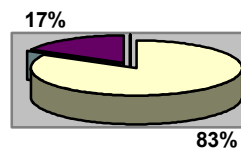
1. Design



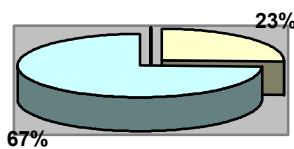
General Appearance



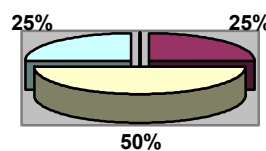
Colour (colour appliance)



Text (textual presentations, i.e. text blocks, fonts, etc.)



Usability and quality of images



The font size is...

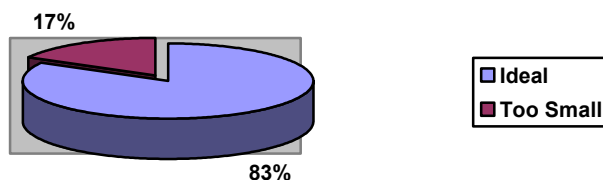
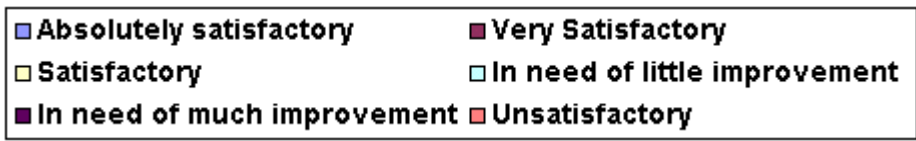
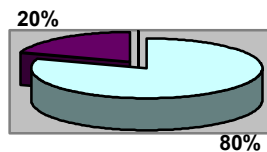


Figure 9: Portal design

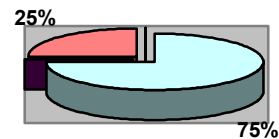
2. User support



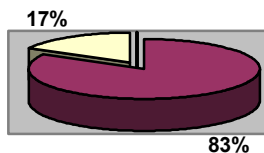
Navigation methods and navigation quality)



Help functions are



The login procedure and its functionality is



The templates and input fields (quality, consistency, ease of use) is

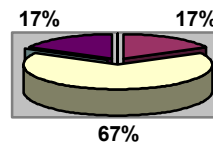
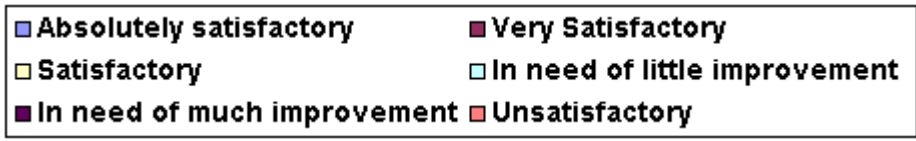
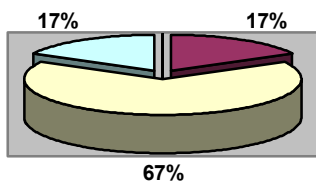


Figure 10: Portal user support

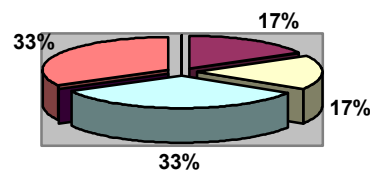
3. Impression



The proposal looks professional



The software supports me in performing my tasks



The proposal seems reliable. I can trust the information provided by REGNET **

REGNET combines the information on regional culture in an innovative way **



Figure 11: Portal impression

** Most partners thought that this two questions seemed not applicable to the testing of the Portal

4.1.1.3 Data Entry, Search and Retrieval

4.1.1.3.1 Strengths

The system was designed as a general documentation system and it fulfils this requirement. It is considered a powerful tool, which enables a proper management of the info (text and visual), through combination of database, publishing, administration, etc.

As it is based on XML-editing, database management, administration of the interface, online storage (among other facilities) are performed in a very acceptable time.

There has also been mentioned as advantages of this tool the well supported updating and importing procedures, an adequate storage of data and that it is allowed to change the interface online.

According to the opinion of the partners, this is a fast and flexible application, comparable to other Collection Management Systems.

4.1.1.3.2 Weaknesses

Interface

Most partners share the opinion that the weakest point of this tool is its interface. It is considered not to be friendly enough for non-expert users and quite complex. Related to this feature and according to partners opinion:

- The usage of non-standard symbols leads to confusion.
- Coherence of the screens is not clear and obvious.
- It is needed a better displaying of search results. Giving both "resultframe" and "paneframe" simultaneously makes the screen too cluttered.
- The search interface is in need of improvement.

Related comments:

- "The tester didn't observe the help button."
- "The tester found the test bed confusing."
- "Search buttons may become mixed up."
- "The user thought that Help functions were too discretely placed and practically non existent."
- "When the tester was going to delete the child link, she hesitated at the scissors symbol as that is normally seen as "cut out" in Word and saved for pasting in other documents."
- "It was difficult to understand the presentation."
- "Some of the lay out is very confusing. No natural guidance."
- "Confusion of the two context fields and object buttons".



Searching

Users could not understand why there are so few fields defined in the “All types” Format.

When searching the empty search interface the whole database appeared, which is deemed not to be such a good idea.

There have also been problems while trying to refine queries.

Trying to refine the query via keywords, testers found out that the difference between the primary and secondary keyword was not clear in any case, because they are not listed as separated terms but as part of strings of several keywords (all keywords that are entered in a specific record are displayed as a keyword string in the keyword list). Only free text search resulted in the relevant record. The process took about 10 minutes.

It was also mentioned as a disadvantage the fact of being forced to enter all search terms again to refine the query that has already been executed.

Case sensitive searching is deemed not to be a good idea.

Complexity

Testers have also highlighted the complexity of the search facility. This complexity can lead to a breakdown when trying to put the service into real use.

For example, as they do not know how to do a narrower search on images, they always use “all types” and “full text” and receive a lot of hits. This makes the finding of the requested item cumbersome.

There also were many displayed functions that testers did not understand what they were for.

Related comments:

- “Tester did not know how to interpret the graphical representation of the different databases.”
- “What is Look up button for?”
- “Too little information about double clicks, for example useful when it is record with two or more authors.”
- “The tester found that the Thesaurus was difficult to find, if you didn’t know how to do.”
- “Hard to judge what Document type to use in specific case.”

Integration

The integration of this tool has been brought into question too. There is no gateway between the database and the e-shop, no connection to the thematic descriptions, no standardisation between different databases, no search using all databases (multiple search).

It is also very important to point out that it is not possible to integrate old data. The tool is only good to start from the beginning.

Import / Export functionalities with external systems remain a problem.

Results

The system contains scattered and separated information, which pollutes the search results, for example the image descriptions without relations to objects and the images concerned. In general, the presentation of art objects could be improved.

Having to use “Show resultframe” is deemed a useless and confusing step because there should be the possibility to get the results by clicking straight from the result list. “Show resultframe” at the top is considered one step too much

Testers think that “themeimage” do not correspond with the aims it was created for, because an image can be used in any context, not only in themes.

It is not clear why there are different supplements to the records in the resultframe. (“1”, “_2”, ...).

4.1.1.3.3 Further Comments/Suggestions

General

The tool is recognised to be a good documentation system in general as it forms the basis for a fully-fledged Collection Management System but there is still work to be done. It should be beneficial to work out the most important differences to CMS.

If the system is to compete with existing Collection Management Systems, then the more specific data field should be added to the data entry. For each domain (Biology, Archaeology, etc.) separated “views” or templates should be created in which the all general and domain specific data entry field are listed. The domain specific fields of other domains have to be left out. For example: Archaeology data requires specific entry fields such as, the co-ordinates of the exact locality where an object was found. Biology requires fields such as “holotype”, “paratype” etc.

Interface

There are also suggestions regarding the interface. It has been emphasised the need of much improvement as far as interface is concerned. There is a proposal of two different masks: the existing for libraries, etc. and a simpler user interface with few fields for museums, such as Creator, Title/description, Subject/keyword, Size, Price, Rights. There are also more detailed proposals to improve the current visualisation of Art Objects, which is not as good as it should be. There are two possible proposals of improvements:

Nowadays, the visualisation of Art Objects is like this:



The screenshot shows a web browser window with the address <http://csc000.ccaustria.at/iccs/>. The page title is "ICCS Collection". The interface includes a navigation bar with buttons for "Restart", "Home", "New Search", "Edit", "Remove", "Previous", "Next", and "Print". A list of objects is displayed on the left, with details for the selected object (Accession Number 15) shown on the right. The object details include:


- Document Type: OBJECT
- Accession Number: 15
- Creator: ChristoBarakovski
- Creator Role: Woodcarving
- Creator: UBA
- Creator Role: Printer
- Title: Woodcarving
- Creation Date: 1997
- Material: wood
- Measurements: jpeg
- Relation: Art
- Relation: ArtGallery, ContemporaryArt, BulgarianArt
- Related Image: 
- Context rel. Place: UBA
- Documented Date: 2002

Figure 12: Screenshot “Display of object information”

The first proposition would be to move the information that is now in the beginning of the page to the end, exactly after the red square (which has just been drawn as an example).

The second proposition, according the layout, would appeal if the moving was not possible. The different objects could be maintained in the same scheme and the solution could be to rearrange, to present the fields like this:

Document Type: Object

Accession Number: 44

Creator Role:

**Measurement:****Relation:****Content Rel.Place:** (Now this field is after the picture, to be transferred here)**Documented Date:** (Now this field is after the picture, to be transferred here)

*Here to present the picture and
after it to follow some fields,
which are necessary for the user
like artist or a person interested in
art*

Artist:	(now is Creator)
Title:	(now it exists)
Creation Date:	(now it exists)
Dimension:	(now it does not exist)
Material:	(now it exists)

This kind of visualisation is important for the artist who probably is not interested in Document type, Accession Number, etc. But the artist wants to see the image and after that or next to the picture few obligatory for his professional area, fields like Author, Title of the picture, Year, Dimension and Technique. Information in the red shape has to be in the beginning (better) or in the end or the screen. It is better to be in the beginning because this is the most important information for the common user. He is not interested in all other digits, relations and so on. The artist prefers to see the picture and the most important information (in the red square) and he and not read the other fields. Or if the red square is in the end he has to skip the beginning (this information is no useful for him) and to scroll the bar to the end.

Other suggestions received:

- “The “Help function” is not satisfactory. Should be found under the headings.”
- “ It would be better to use a Boolean standard for symbols.”
- “Different naming for some items”:
 - “image” instead of “themeimage”.
 - “text” instead of “theme”.
 - “delete” instead of “remove”.
 - “Save” instead of “OK” when applying a modification.
- In bibliographic search the tester thinks “Doc. Description” is not clear. It should be Title as that is the “authorised naming”.
- Date: Should be Publication year.

Searching

It has been suggested the removal of the difference between primary and secondary keyword, since the distinction is not relevant to an end user. When using the Look up function one should get to the proper alphabetical place in the Lookup index by for instance typing R in the first search interface. In a big database it is very annoying always having to start from A. The search frame at the top in the index must be there as well in order to navigate quickly in the alphabet. The system should offer the

possibility to refine a search without being forced to enter all search terms again. Keyword lists should be corrected.

Complexity

To deal with its complexity, the system should be more self-explaining, including clear instructions of the steps to be taken to perform an activity and information about the different fields to be filled. Furthermore, a proper training to use the tool maybe requested and a user manual should be ready to meet the needs. There should be an online help available too.

Results

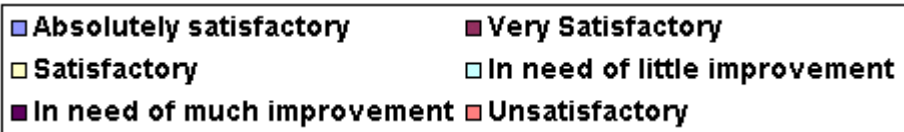
As it was previously mentioned, there should be the possibility to get the results by clicking straight from the result list.

4.1.1.3.4 Bugs

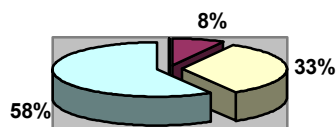
The English version is not well readable. Now there are not spaces between the words, nevertheless the correct inserting words. Using "Edit" option it can be seen that the inserted data is correct, but visualisation of the data is without spaces. The same problem exists in the data of SUSU on <http://csc000.cascaustria/susu>. In the Bulgarian version the search is available only for digits: Creation Date or Accession Number. Search by Author, Title, Text, etc is not possible. When some users tried to apply a modification and pressed the "OK" button they found that the window was closed but no modifications were applied. Special symbols in line "remarks" are unreadable (€, ä, ö, ü).

4.1.1.3.5 Statistics

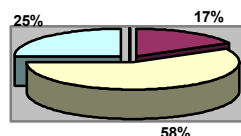
1. Design



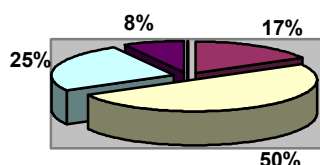
General Appearance



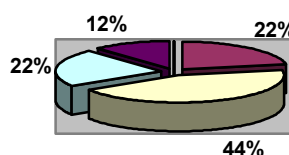
Colour (colour appliance)



Text (textual presentations, i.e. text blocks, fonts, etc.)



Usability and quality of images



The font size is...

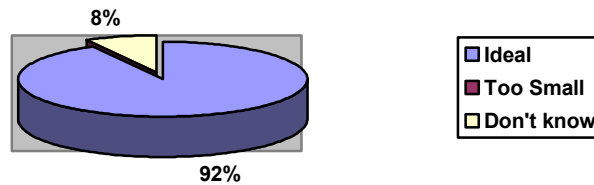
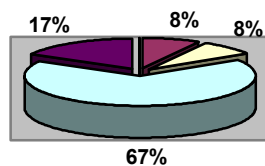


Figure 13: Data Entry, Search and Retrieval design

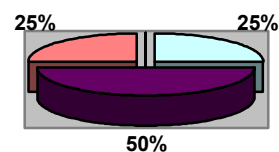
2. User support



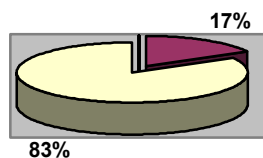
Navigation methods and navigation quality)



Help functions are



The login procedure and its functionality is



The templates and input fields (quality, consistency, ease of use) is

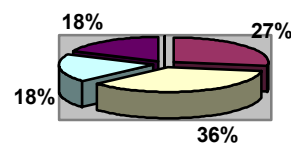
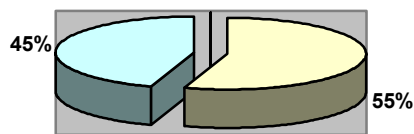


Figure 14: Data Entry, Search and Retrieval user support

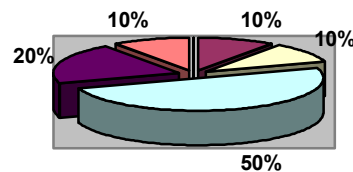
3. Impression



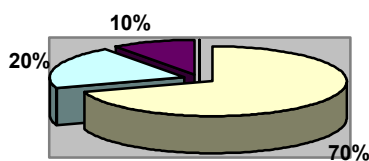
The proposal looks professional



The software supports me in performing my tasks



The proposal seems reliable. I can trust the information provided by REGNET **



REGNET combines the information on regional culture in an innovative way **

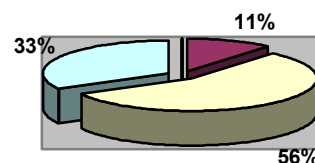


Figure 15: Data Entry, Search and Retrieval impression

4.1.1.4 E-Procurement

4.1.1.4.1 Strengths

Partners have highlighted the clear interface, simple but satisfactory, and the layer concept for product selection as the main advantages of this tool. Users bought, deleted and ordered easily.

4.1.1.4.2 Weaknesses

Searching

Although users could easily find items when they kept on browsing, they missed the possibility of searching a specific item. Testers tried to search on paint without success. They expected to be able to enter a search term but they could only chose from the dropdown boxes.

In partners' opinion, it was not clear whether the searching is performed on a combination of showcases and departments or a combination of showcases or departments. The difference between showcases, departments and categories is not clear. There is not enough info on products expected to be sold. Only few object info but no product/business info (link to product information is missing and supplier not well-defined)

Adding

Though the items are being priced by quantity it is still possible to exceed the maximum quantity.

It has been reported that if the maximum quantity of items that can be bought at one time is exceeded, after sending new items to the shopping basket, others are deleted. This may provoke that you forget what you had ordered and have to look in the basket to know.

Profile

Users found that when they changed their profile while their shopping basket was still opened, they could not see their profile before they were sending the order, so they did not know if the order was being sent to the right address.

When having edited an account it is not clear whether changes are made or not. The same page is shown after clicking 'update account'.

Interface



Buttons 'My basket' and 'Shop' change colour when mouseover. Users expected to be able to click, but they could only click on the text.

Some users think that images are a little bit small.

Part of the page was not (yet) translated in the chosen language (e.g. buttons are still in English).

From the online shop page there is no direct link to the homepage.

Ordering

No shipping costs or expectations of delivery are given.

Help

No Help functions yet available.

4.1.1.4.3 Further Comment/Suggestions

Searching

In the data entry for the field "name" the restriction that a name can only be used once must be lifted. It is impossible to think of individual names for e.g. each ring we are offering on sale.

We have also received the following proposal:

After having found items you want to buy you must have the possibility to contact automatically the supplier: click the button next to the items you want to contact the supplier about. An email will be generated in which you have the email address of the supplier, and the details (as they were presented in the E-procurement tool) are automatically copied into the mail's body. The mail can also be further edited by the customer as to ask for example more specific question.

Adding

After adding items to the shopping basket, users would like to see some confirmation at instance. It would be very useful to see an overview of the shopping basket all the time.

Profile

There should be a possibility to get your password back when you loose it.

Interface

Some users found the interface rather formal and sober. They proposed other web sites as examples: www.museumshop.com, www.smithsonianstore.com, www.louvre.fr

The shopping basket shows the total amount you have to pay for the products. In front of it there is an orange rectangle which could show the word "Total".

Ordering

When trying to calculate the shipping costs, a page was displayed with some error message. The only way to get back to the online shop was via the back-button of the browser. It is expected that when an error occurs there will be shown some kind of back button on the page itself.

4.1.1.4.4 Bugs

1. It is possible to enter a negative number of shop items and deduct costs in the process.

To make this incident occur: Buy one or several items by adding them to the "Cart". Go to your basket and change the number of items into a negative number. Then click on "Update" you will see that you will get a negative number of EURO's on the display (see **Fehler! Verweisquelle konnte nicht gefunden werden.**).

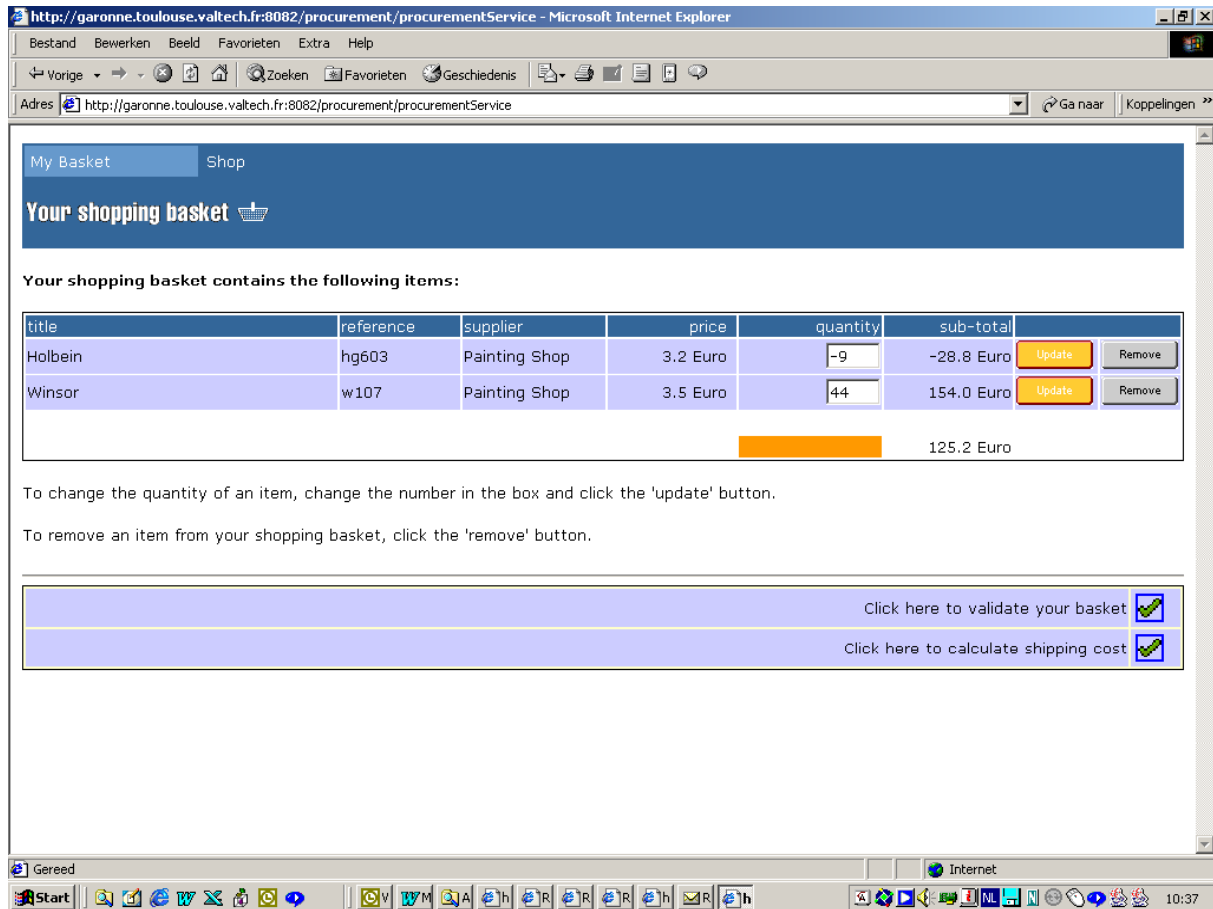


Figure 16: Screenshot shopping basket

2. Validation items in Basket failed

To make this incident occur: Buy several items by adding them to the “Cart”. Then click on “Click here to validate your basket”. The validation validation failed and an error message occurred (see Figure 17:).

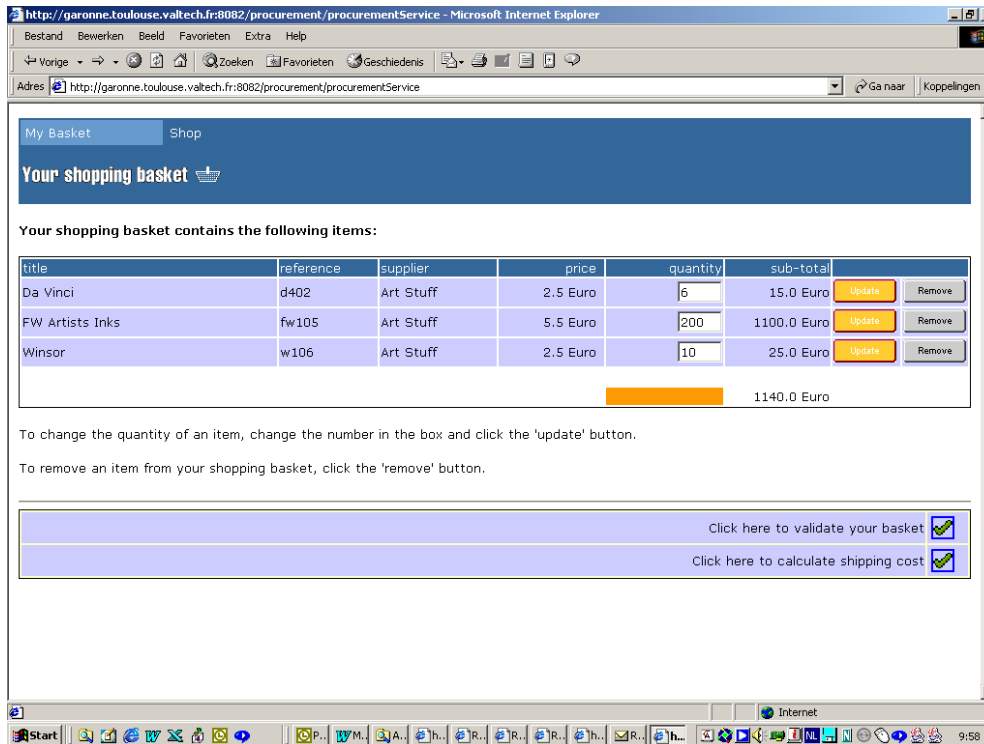


Figure 17: Screenshot shopping basket 2

3. It is possible to validate a basket without any items in it.

To make this incident occur: Buy several items by adding them to the "Cart". Then click on "Remove". Then validation your basket. You will now receive the message that you order have successfully been sent (see Figure 18:).

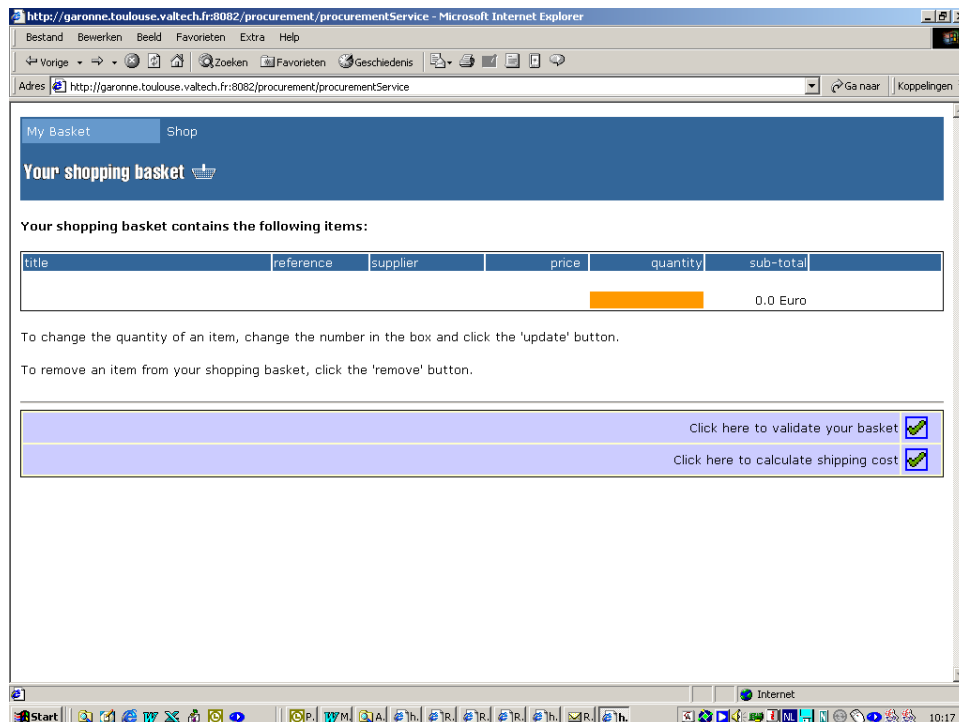


Figure 18: Screenshot shopping basket 3

4. The Dutch text shows "van eenheden aan eenheden" but must be "van eenheden tot eenheden".
5. When ordering Reffesttttstttt any quantity below 101 shows the lowest price. Above 100 the highest price is taken. The price showed in the catalogue is 1-20 € 5,- and 21-100 € 4,-.

4.1.1.4.5 Statistics

1. Design

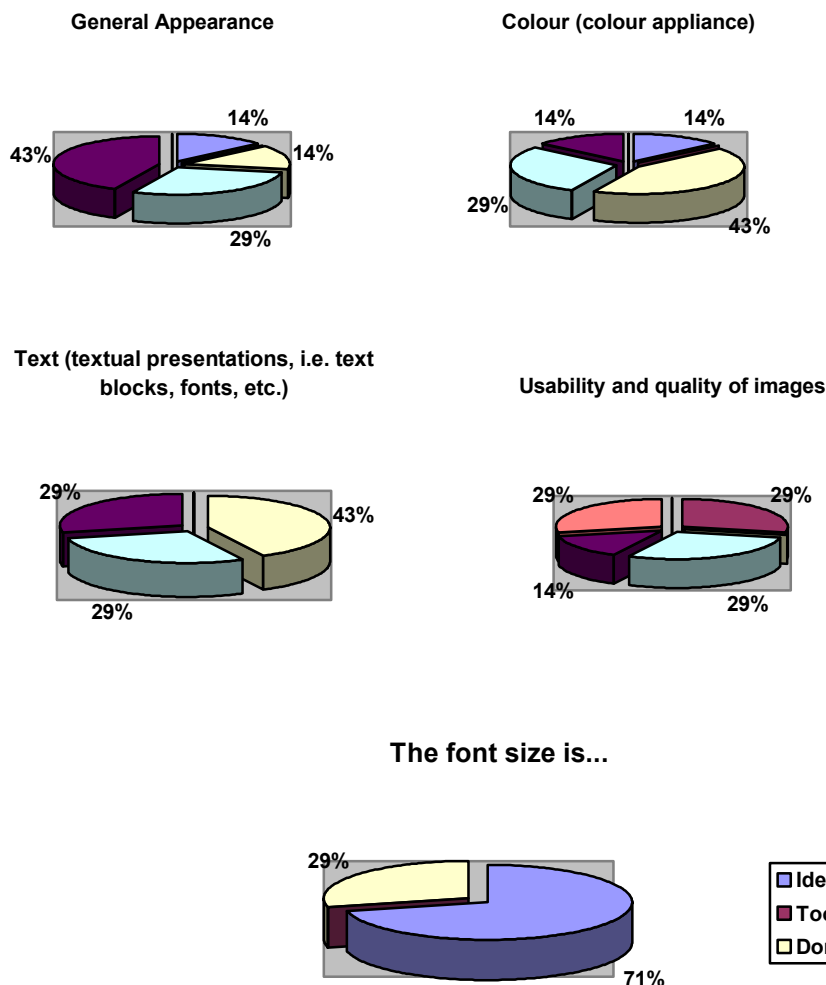
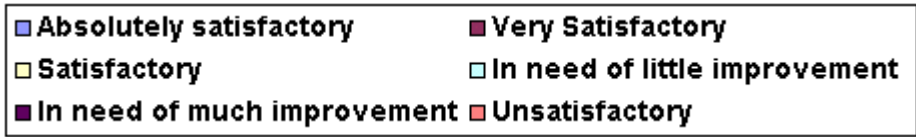
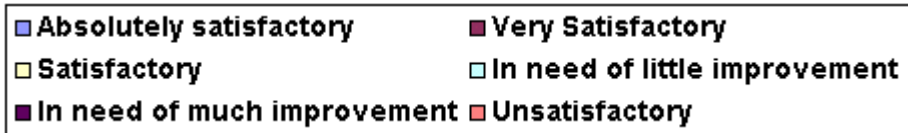
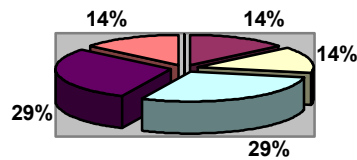


Figure 19: E-Procurement design

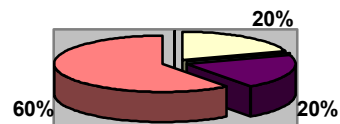
2. User support



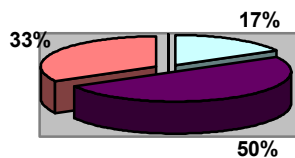
Navigation methods and navigation quality)



Help functions are



The login procedure and its functionality is



The templates and input fields (quality, consistency, ease of use) is

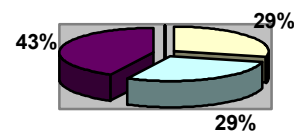
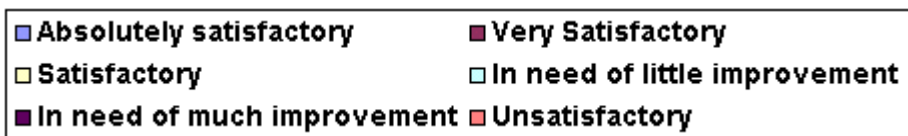
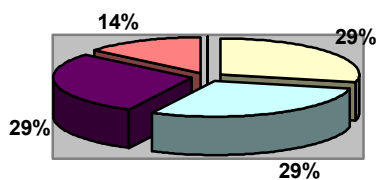


Figure 20: E-Procurement user support

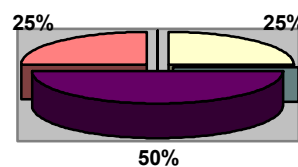
3. Impression



The proposal looks professional



The software supports me in performing my tasks



The proposal seems reliable. I can trust the information provided by REGNET **

REGNET combines the information on regional culture in an innovative way **



Figure 21: E-Procurement impression

4.1.1.5 E-Shop

4.1.1.5.1 Strengths

This tool makes possible the developing of new business opportunities.

It has been highlighted the coherent graphical and visual approach. The interface is deemed to be friendly, the layout is quite clear and easy to use.

E-shop, according to partners' opinion, is well organised too.

From the functionality point of view, it can be sufficient if compared with similar products and taking into account the price for the module.

4.1.1.5.2 Weaknesses

Interface

The design is rather formal and sober. Colours are too similar; images are poor and do not invite customers to buy.

It would be useful to insert a clear site map.

The fields of descriptions are too short.

Multilinguality is missing.

Speed

Response time is much too long.

Buying

Agreed e-Commerce Standards and Functionalities are completely missing (legal standards, e. g. that the user gets an overview at the end of the order about his ordering, price, possibility to change, shipping conditions, etc.). The legal aspects, as established by the EC, for the operation of an E-shop need to be fulfilled.

Payment procedures could not be found.

Currency is missing.

Information

There is only little object info but no product/business info; a set of descriptors is missing. The real needed information is not integrated. Customers do not know where goods come from, what is special about them, whether they have traditional features in the choice of materials and/or design, it is not clear if the item is an original product or an imitation.

Integration

Integration is needed (databases, object information, ontology node).

4.1.1.5.3 Further Comments/Suggestions

Interface



Before the site is opened there should be a caption indicating "please wait" or something similar.

Design must be upgraded in order to stimulate to buy (end user). For better examples it has been suggested: www.museumshop.com, www.smithsonianstore.com, www.louvre.fr.

Form with person-information should be arranged in normal order: Name address, telephone, fax, e-mail etc.

Testers noted that accessing the information after having selected the items to buy they are different from what they were on the previous screen.

It would be useful to represent jewellery in their natural dimension.

In the window of "details of product" many images are not clearly defined.

In Basket page the meaning of "Check" section is not clear.

It would be useful to indicate the meaning of stars.

Clicking on "Add to basket" and on "Search" the "little hand" doesn't appear and it is not immediately understandable its use.

It would be useful to check the capitol letters in the list on the left.

Buying

After confirming your order the system should display once again all items bought, costs etc. The customer can now make a last check (this is a legal obligation for E-shops).

After having bought one or more items the customer should receive an email confirming his order. It should also shortest the items bought and a point of contact for further information (the museum supplying the item).

A functionality that calculates the shipping costs must be added. It has already been done for the Procurement tool (VALT). Shipping costs should be inserted before "Order Total" on Shopping basket page.

The system should provide information about the security measures taken for protecting the customer in his purchase.

Most categories are not working and more categories are needed and sorted alphabetically. New windows for sorting: Name/Producer/Price.

Information

More comments related to the lack of information about products: there is no information on the originality of items and nowhere it's said if the customer will receive any certificate of originality, in case of purchase; the price itself doesn't say anything because list of all the currency is not expressed; there is a lack of information about the historical period; in case of searching for jewels it is impossible to know if what you see are reproduction of authentic jewels or they are original objects.

In order to have more details of a book, it would be useful to have the possibility to see the index or some internal page.

4.1.1.5.4 Bugs

If you access the E-Shop tool: the sentence "Hello, Paolo! Welcome to the REGNET e-shop" appears although it was not your name and you did not fill any field. The name "Paolo" appears in other steps of he process.

It is quite usual that not selected items appear in the basket.

The "total" is not corresponding to the "Price".

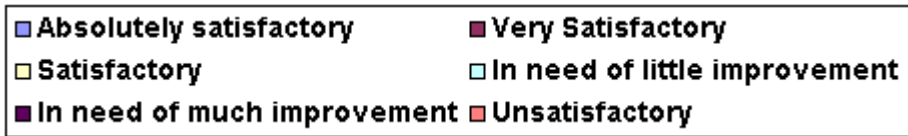
Payment & delivery page is not working.

Some testers who saved the selected items in the "Wish list", found it empty when they checked.

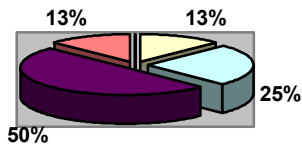
The sentence "Is your home..." contains a mistake.

4.1.1.5.5 Statistics

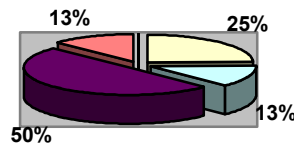
1. Design



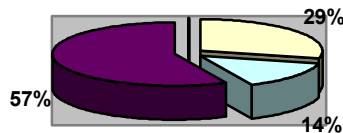
General Appearance



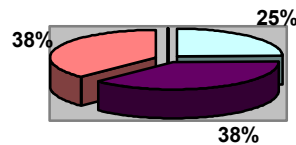
Colour (colour appliance)



Text (textual presentations, i.e. text blocks, fonts, etc.)



Usability and quality of images



The font size is...

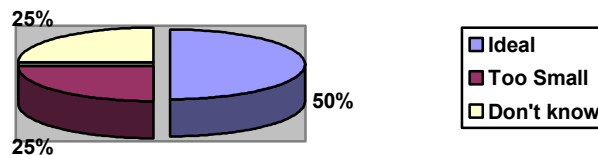
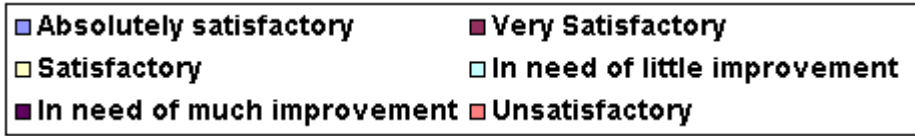
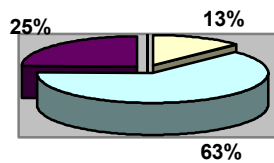


Figure 22: E-Shop design

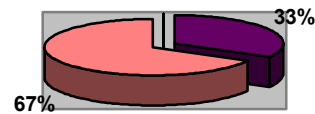
2. User support



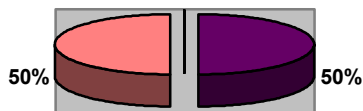
Navigation methods and navigation quality)



Help functions are



The login procedure and its functionality is



The templates and input fields (quality, consistency, ease of use) is

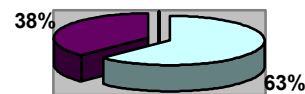
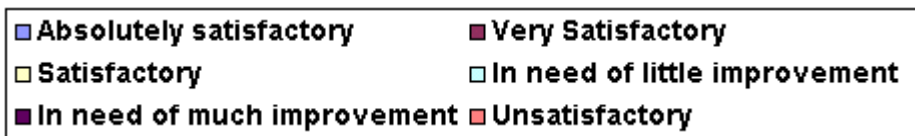
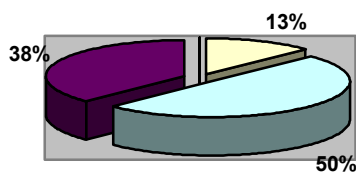


Figure 23: E-Shop user support

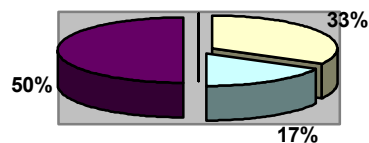
3. Impression



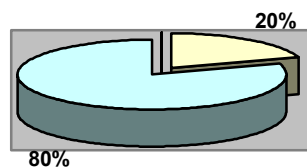
The proposal looks professional



The software supports me in performing my tasks



The proposal seems reliable. I can trust the information provided by REGNET **



REGNET combines the information on regional culture in an innovative way **

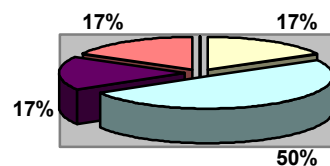


Figure 24: E-Shop impression

4.1.1.6 Auction

4.1.1.6.1 Strengths

Auction is considered a good potential idea, though no real models have been developed.

It has been highlighted the coherent graphical and visual approach. The interface is deemed to be friendly, the layout is quite clear and easy to use.

ICCS considers e-Auction is well done, the connection is fast (from Bulgaria and in Den Haag). On the other hand, some partners consider that the response time is much too long.

4.1.1.6.2 Weaknesses

Interface

The general appearance is considered simple but dull and there are deformed and bad quality images. The site does not invite customers to buy.

Regarding images as well, it has been reported that as pictures are stretched to a standard size, everything becomes landscape.

It is not clear which size a picture should have. The image sometimes becomes very unsharp due to the wrong size. Help/explanation is needed on the size of the images to be added to new items.

It is not possible to find out when you can expect an item to be yours.

Bids

The starting page should already show the items of the current auction, not only after clicking on current lots. Also there should be more items on one page to choose from. Now you have to scroll through too many pages to get a view of the content of the Auction.

In the overview of "Current lots" it can not be seen the highest bid so far. The starting price is shown, this is not interesting for the end-user at all. He wants to know the actual price not the starting one.

Knowing where to start bidding seems not to be very easy.

The price in the Current lot view does not have an indication of the currency.

Users could not find the payment procedures.

Searching

It is only possible to use "Search" in combination with the category "All", the other categories result in an error.

The number of items in the auction is very small. Also, there should be better and more categories. In addition to this, it has been reported that the categories are not enough specialised, e.g. painting was found under the category "pictures".

Some testers tried searching, but due to not knowing what is in the auction, failed to find any items.

It is unclear what to fill in some input fields on the "search page".



Information

There is not enough info on products on auction. Only few object info but no product/business info. The real needed information is not integrated. Customers do not know where they come from, what is special about them, whether they have traditional features in the choice of materials and/or design.

Adding

The price's fields are too short to fill a price with many digits.

It is strange that the customer is allowed to express the price without currency.

Editing

It is not possible to edit an item once you have added it to the database.

It is not possible to edit your profile, this feature is not present in the current version and the Auction is not yet integrated with the portal.

Missing

Connection with ontology, integration (databases, object information), help functions and login procedure are missing.

4.1.1.6.3 Further Comments/Suggestions

Interface

It would be useful to insert a clear site map.

The prices should have dots for the larger amounts: e.g. 24.430 and NOT "24430".

Several headings should be checked on correct English, for instance: Welcome (is wrongly spelt Welcome).

About pictures visualisation: now is used a fixed format, which distorts the pictures with different shape.

Now is used . But when the object is in the form the view is terrible. There should not be used a fixed format, or, at least, use a little square (the distortion to be less seen).

In the "your bids" part of the auction the time in the field of insert is not correctly displayed. In other parts it is correctly displayed. The time is wrongly separated from the date by a "-". Secondly in the time indication itself the hours are also separated by a "-" this should be a ":".

Bids

When the object is sold or if the auction is closed, each individual bidder should receive an email notifying them that the object is sold or the auction is closed.

Information on condition is needed, closing date/time is important, clock in the interface should be inserted.

In "Your bids" the end time should be shown as well as a picture of the item.

Searching

When you have done a search and when you return to the search page, it is empty. It is preferable to have your previous search criteria in the search page.

To be included more categories or to be possible to ask the administrator of the Auction to be inserted new categories.

Now it exists: Pictures
Souvenirs
Jewellery
Logos
Sculptures
Photography



Engrave
Media Art
Bronze statues
Posters

For the Bulgarian collection (and we think that it is necessary for Italian, Spanish, Russian, and others Art collections) is needed:

Graphics and illustrations
Woodcarving
Monumental Art
Ceramics
Textile
Design
Icons
Other Art

Information

Users would like to have further information about pictures, e.g.: the name of the artist, if she/he is an accredited artist, the quotes of her/his artwork, in which country she/he is known, the technique and the dimensions of the item. After having all these information, customers could decide whether to bid or not. The same observations for all other items inserted in auction's list.

Apart from the "objective" description of the object, it would be advisable to add a larger field for the presentation of the object with quotes from art critics or books.

Adding

When one of user's products is refused to be on sale, e.g. pornographic items, the user should receive an email notifying this.

Editing

When the user inserts new auction and makes a mistake there is not a possibility for editing the items. There should be included an option "Edit inserted Item".

4.1.1.6.4 Bugs

- Searching on "Categories: ALL" and only use the end date: "2003" an error occurs.

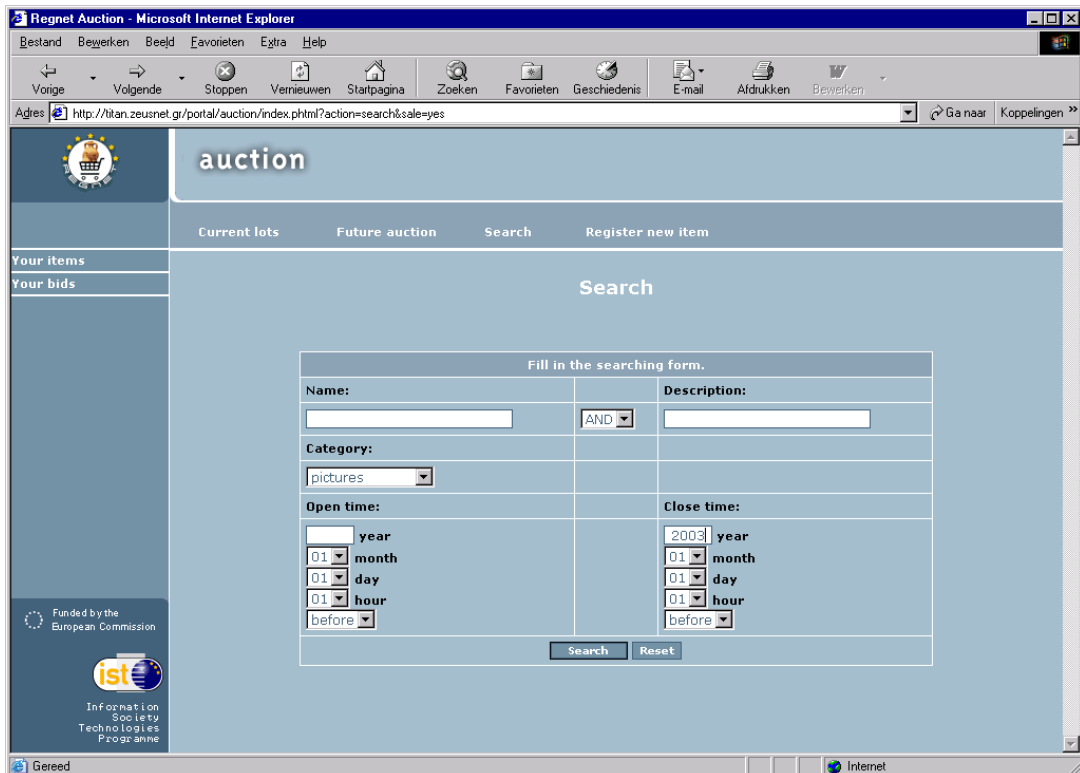


Figure 25: Screenshot Auction I

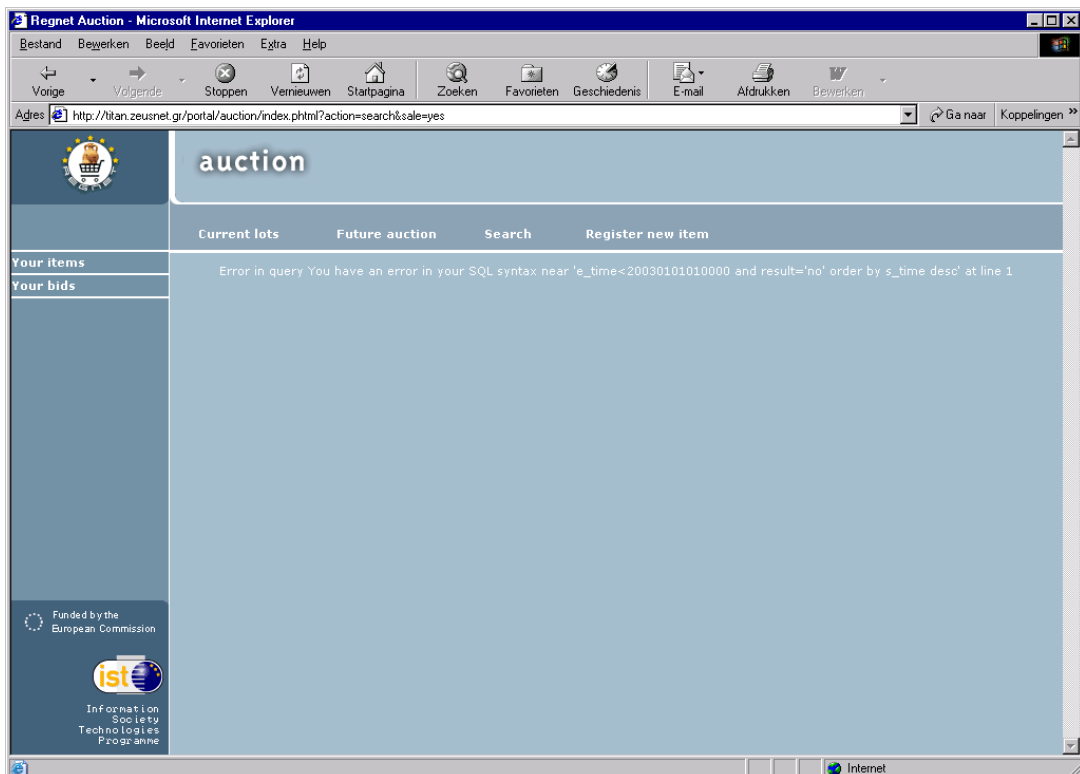


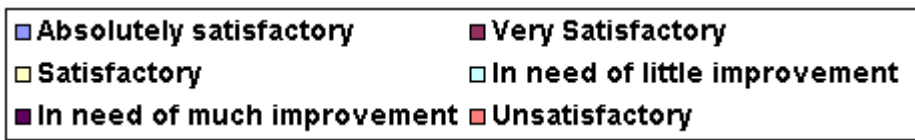
Figure 26: Screenshot Auction II



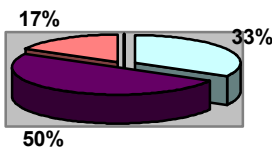
- If you access the Auction tool: the sentence "Hello, Vanessa! Welcome to Auction" appears although it was not your name and you did not fill any field. The name "Vanessa" appears in other steps of the process.
- After clicking on "Add item" tool, it appears the sentence "File copied!", but below the page there is this sentence: Fatal error. Failed opening required "bottom.phtml" /include_path='.') in/usr/local/apache/htdocs/portal/auction/index.phtml on line 107. The item is not registered.
- The search function gives an error when using any other category than "All".
- Below the "name" field the name Andrea appears.
- It is possible to start and stop an auction on exactly the same day and hour. It is also possible to have an end time that is before the starting date.
- When some testers use "Your items" tool, they found several items that they had not selected.
- At page 3, there are no photos. At page 6, one photo is not visible.
- Dates are sometimes indicated in the English way (m/d/y), sometimes in Italian way (d/m/y).

4.1.1.6.5 Statistics

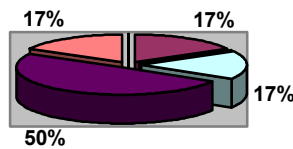
1. Design



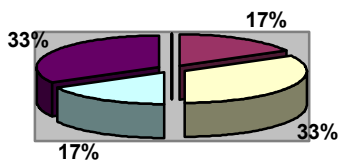
General Appearance



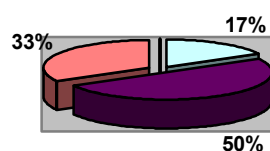
Colour (colour appliance)



Text (textual presentations, i.e. text blocks, fonts, etc.)



Usability and quality of images





The font size is...

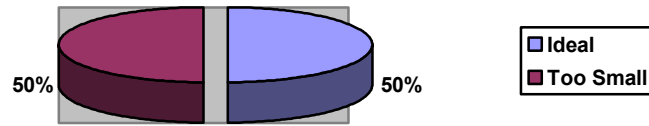
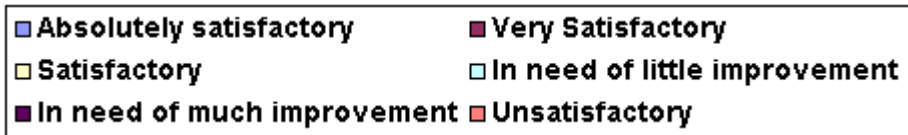
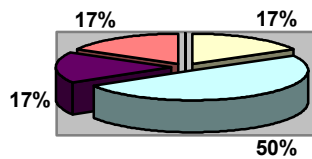


Figure 27: Auction design

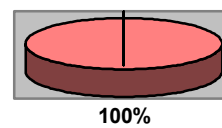
2. User support



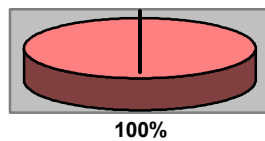
Navigation methods and navigation quality)



Help functions are



The login procedure and its functionality is

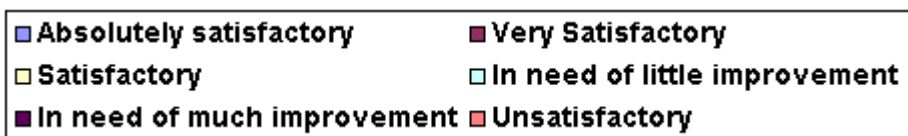


The templates and input fields (quality, consistency, ease of use) is

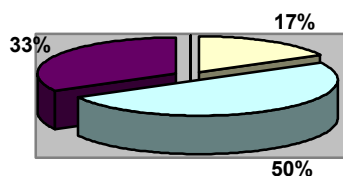


Figure 28: Auction user support

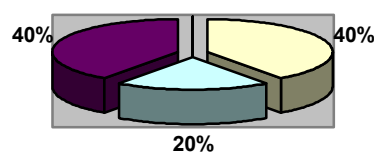
3. Impression



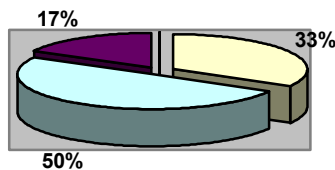
The proposal looks professional



The software supports me in performing my tasks



The proposal seems reliable. I can trust the information provided by REGNET **



REGNET combines the information on regional culture in an innovative way **

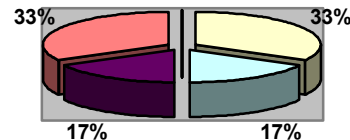


Figure 29: Auction impression

4.1.1.7 Topic Maps

4.1.1.7.1 Strengths

It has been emphasised the original way it shows contents, being a flexible and powerful tool, which permits a pleasant and attractive presentation of information even for complex models. Results look impressive.

The descriptions given are friendly and intuitive, and it allows users to access to a complete information in a very innovative way. It is nice playing around it, being interesting to make links and connections with other themes and topics.

The connection between images and text is very clear and dynamic.

It offers a real "knowledge" point of view and it is very fast.

For specialist, rather easy to make.

4.1.1.7.2 Weaknesses

There is not a standard template for the Topic Mac creation.

Generator model of graph is quite complicated. A lot of work to construct the conceptual part for the content providers is needed. It is quite difficult to use if you are not an expert. Topic Map production is not very user-friendly as well.

It is difficult to do changes if you have no programming knowledge, in consequence, it is thought that it will not be used for a lot of people because of this lack of knowledge.

Topic Maps express always some personal view of the author. We should distinguish between authors and attribute also copyrights.

Regarding the visualisation, it has been reported that it is prone to security problems (Java).

It has also been mentioned that the present state of the visualisation has not yet reached its full potential. Image, texts are not displayed on the same screen: see www.thinkmap.com use the Smithsonian Institute demos as an example. Another example is www.cultuurwijzer.nl which has an interesting way of presenting documents and Internet web pages associated to the topic map occurrences.

It is not possible to build a Topic map starting from the Graphical representation (it is only a consequence and not a generator).

There is not available a search engine to find something in a complex graph.

Guidelines that lead to different concepts are missing.

4.1.1.7.3 Further Comments/Suggestions

It is needed the inclusion of existing efforts of streamlining conceptual theories and representations (semantic web, knowledge representation, etc.).



It is essential that the content providers deliver the correct terms to use. Also there should be consistency in terminology used in different topic maps. The Topic Map Content Board as proposed by TARX should be established.

Partners have not so much experience with TM.

4.1.1.7.4 Bugs

No information available

4.1.1.7.5 Statistics

No information available

4.1.1.8 E-Publishing

4.1.1.8.1 Strengths

It has been emphasised the strong potential of this tool. It is an incredible powerful instrument, well positioned on the market, which could be one of the value-added elements of the whole project.

It is considered very attractive, appealing for the museum, and permits:

- very clear presentation of the information
- to display image, text and map on the same screen

It has also been mentioned:

Standards assure the state-of the art: it is stable, reliable

- Printed form is available
- Macromedia could be a business multiplication factor

4.1.1.8.2 Weaknesses

It has been highlighted that Macromedia Director is an attractive but very expensive tool. It is also quite complex, not easy to implement, so training to use Macromedia Director and lingo language is needed.

It is not clear the business model behind: what we are going to produce (CD, On line exhibition, etc)? Who will produce it? Who will pay for it and how?.

As it was mentioned previously, it could be on one of the value-added elements of the whole project, but actually, the added value within REGNET is still unclear.

The useful link between the macromedia results and the e-business functionalities is missing.

It has also been reported that this tool is a more off line resource than an on line one, being focussed more on CDs and DVD, than on line productions

Integration is missing.

4.1.1.8.3 Further Comments/Suggestions

Macromedia Director is an established tool with a steep learning curve. It addresses as well CD/DVD (projector) as the Internet (Shockwave).

Substantial amount of work is needed to generate a professional final product. Some solutions for (part of) online productions are needed.

Examples must be based on data delivered by content providers.

The use of "guiding words" (words appearing on clickable button and link), should be carefully checked by the content provider. In general, the technical information is too specialised for the content provider to work out. An intermediate museum worker (to be semi-part of the CSC's) may work between the technical specialist and the content provider to facilitate the production.

Mouse pointer does not change in appearance when touching a link.

4.1.1.8.4 Bugs



No information available.

4.1.1.8.5 Statistics

No information available.

4.1.2 Technical response

After being presented the previous document at Toulouse Meeting, technical partners were requested a response to the main findings. The following tables show the technical response to the suggestions and comments made by the testers during the first validation process.

4.1.2.1 Portal

<i>Portal</i>	
Features already available	
<u>New contents</u>	After Toulouse meeting, some new contents arrived to populate the site map. These contents must be integrated yet.
<u>Disclaimer page</u>	It is present although it could be enriched.
<u>Collection and Search</u>	Collection and search are already separated.
<u>Help function</u>	The help functionality is already available.

Table 3: Technical response portal I

<i>Portal</i>	
Suggestions that are not viable	
<u>Flash resources</u>	We do not have the competence to integrate Flash resources. We would need some support. Moreover, Flash technologies are not supported by every browser.

Table 4: Technical response portal II

<i>Portal</i>	
To do	
<u>Integration</u>	It would be necessary to gather a list of updated links for all the tools in order to check them in the portal code.
<u>Links to other cultural heritage sites</u>	Please supply a list of desired links.
Further comments	
Regarding the lack of visual / graphical relation with Cultural heritage domain, we do not have the contents and the artistic expertise to build such pages. But we could add to the portal all the pages that other partners would develop for this purpose. The left menu links would be appropriate for this.	

Table 5: Technical response portal III

4.1.2.2 Data Entry



Data Entry	
Features already available	
<u>General remark</u>	<p>The system interface is widely configurable and if content providers define their needs, they will be taken into account. This concerns the display of the search mask as well as the display of the search result. Expert users have to define their requirements and wishes for adaptation.</p> <p>The view of the <u>search result</u> can be accustomed as needed. For a search result view that is defined as the content providers wish. Please have a look at: http://csc000.cascaustria.at/sul or http://csc000.cascaustria.at/onb.</p>
<u>Lookup tables</u> : starting with another letter than A in the lookup.	Just type the required letter into the first field.
<u>Search for the whole database</u> and display it in the search result.	This is no longer available.
<u>Integration of the tool</u>	VALT works on connection to e-Procurement and e-Shop. The data entry tool can export and transform data into the appropriate topic map workspace.
<u>Help function</u>	We have now finished work on general improvements of the interface as reported in D10 and we have just finished the guidelines that will provide help. Help text can also be added to each data field. We need here just to know the text defined by content providers (see: http://csc000.cascaustria.at/rndatainput).
<u>Old data</u>	Old data can be integrated by the administrator in the batch add mode.

Table 6: Technical response data entry I

Data Entry	
Suggestions that are not viable	
<u>Order of data fields displayed in record</u>	Data of records is displayed in the same order as created by content providers and this cannot be changed in the general interface. It can be changed in an accustomed view of the search result, which has to be defined by the content providers.
<u>Use of symbols</u>	The only symbol used within the standard user interface is the symbol with the key for the system administrator, which does not affect the general expert user. Only the thesaurus feature provides symbols and they are implemented in accordance to standard windows symbols.
<u>Case sensitive searching</u>	Unfortunately this issue cannot be solved. But please note that only fields with lookup tables are case sensitive. The fulltext – all data fields – field is not case sensitive.
<u>Search of in Bulgarian text</u>	The database system itself (TEXTML Server) does not yet provide indexing of Cyrillic characters.

Table 7: Technical response data entry II



Data Entry	
To do	
<u>Refine query</u>	This feature is not yet implemented.
Further Comments	
<p>Please do not mix up the modelling of data and the validation of the data entry tool. For example the issue of primary and secondary keywords: this was defined by the group which created the fields for thematic text contributions (in Word as well as in Excel). Keywords that are still not split into separate fields: this is no responsibility of the data entry development, too. Content providers were asked to split, but most did not up to now.</p> <p>Thematic text contributions are imported in the structure as they were created by the content providers. There is a new concept for thematic text contributions and related images existing, but that will require efforts and support of the content providers too for changing.</p>	

Table 8: Technical response data entry III4.1.2.3 E-Shop

E-Shop	
Features already available	
<u>Multilinguality</u>	We have added in our component an internationalisation system that can provide the multilinguality (previous txt files that we have sent). Now we will provide all partners the updated txt files in order to translate them, because we have made a lot of changes in our system. So our system can provide multilinguality.
<u>Speed</u>	There is a problem with our Internet provider in Greece. For that reason we agreed with VALT to host our components in their server.
<u>Shipping Conditions</u>	We have added shipping conditions (we rely on a Greek company about the prices). It calculates the weight and the distance from the warehouse of the specific product to the delivery address. (we provide also a normal or an express shipment). See Figure 30.
<u>Payment procedures</u>	We have prepared and developed all the standards that are important for an e-payment method. Now our system can provide two payment methods (payment with credit card, deposit in a bank account). For a completed e-payment method it is necessary from REGNET CSCs to sign an agreement with a bank. It is very important to notice that only the administrator of each CSC can communicate with a bank. See Figure 31 and Figure 32.
<u>Currency</u>	We have added a mechanism that any user can convert the currency of any proposed item. By default all the products have their price in Euro.
<u>Integration</u>	There is integration with the Ontology system (we have developed an ontology client that can connect successfully with the ontology system).
<u>Stimulation to buy</u>	We have made a lot of changes into our components in order to upgrade the design to stimulate buying.
<u>Last check</u>	We have added this proposed task. See Figure 33.
<u>Confirming orders by e-mail</u>	We added this. The customer and also the supplier will be noticed by an email.



<u>No need to register if accessing the e-shop</u>	As there is a connection with ontology, user can authorise himself from the portal and then our system can recognise him without any reason to register again into the e-shop. Also we can take the profile of user (address, phone, email...) directly from the ontology and we can use this information for any user's purchase.
--	--

Table 9: Technical response e-Shop I

E-Shop	
Suggestions that are not viable	
<u>Changes in the layout</u>	It is based on the agreed layout prototype from us (also for the portal and auction system) and we have asked about comments from all partners. Please suggest opportune adds on but I think that we don't have enough time and resources to redesign our components.
<u>Jewellery in its natural dimension</u>	We have only a picture that we have taken from content providers.
<u>Empty "Wish List"</u>	We have fixed this problem.
<u>Mistake in "Is your home..."</u>	Fixed.

Table 10: Technical response e-Shop II

E-Shop	
To do	
"Little hand" when clicking on "Add basket" and on "Search"	To be fixed.
<u>Payment & Delivery</u>	The payment and delivery in order to be completed it is necessary that CSC will make an agreement with a bank and also an agreement with a delivery company.
<u>Security measures</u>	The e-payment will be done to a secure environment that can be provided after an agreement with a bank.
Further comments	
<u>Legal aspects:</u> We have added terms and conditions within our system. But I think that we will need the contribution of all the partners because legal issues depend on specific country (e.g. in Greece we have different laws). Please send us your suggestions or if you have any European legal standards in order to add it in the e-shop. (We have added shipment costs, environment for e-payment, email notification after the ordering, terms and conditions).	
<u>Non-working categories:</u> most categories are not working because we don't have all the information from the content providers.	

Table 11: Technical response e-Shop III

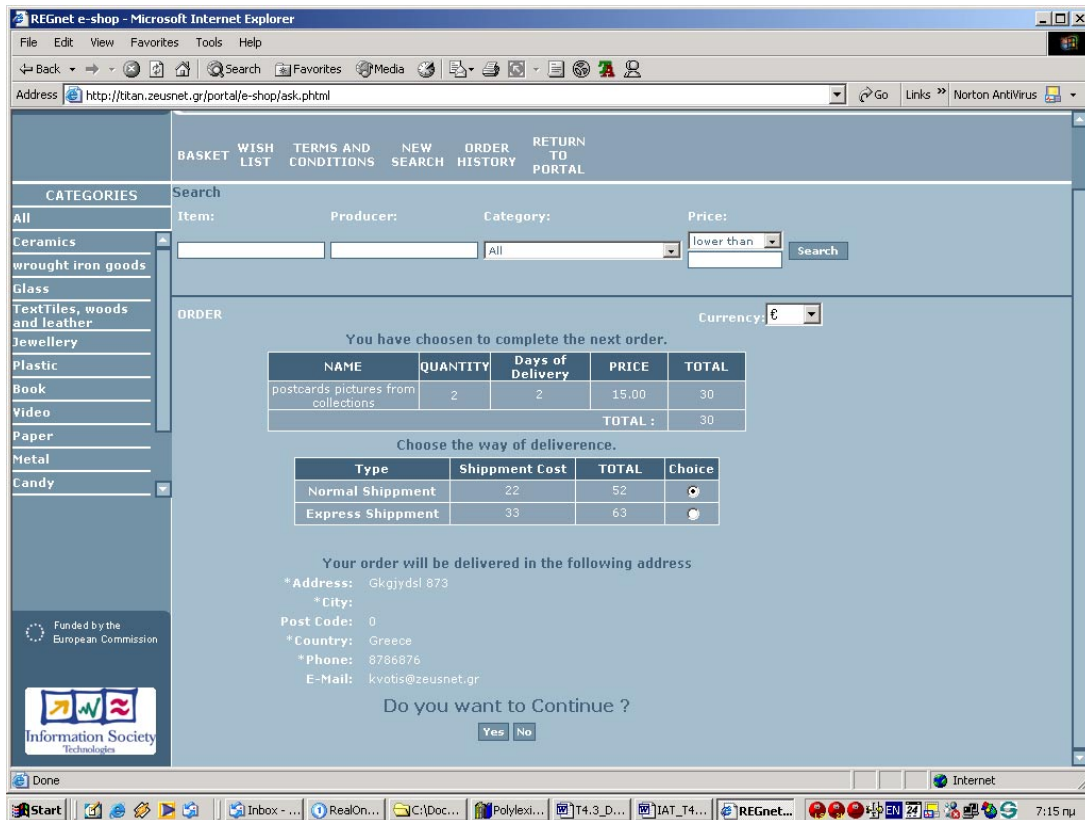


Figure 30: Technical response e-Shop I

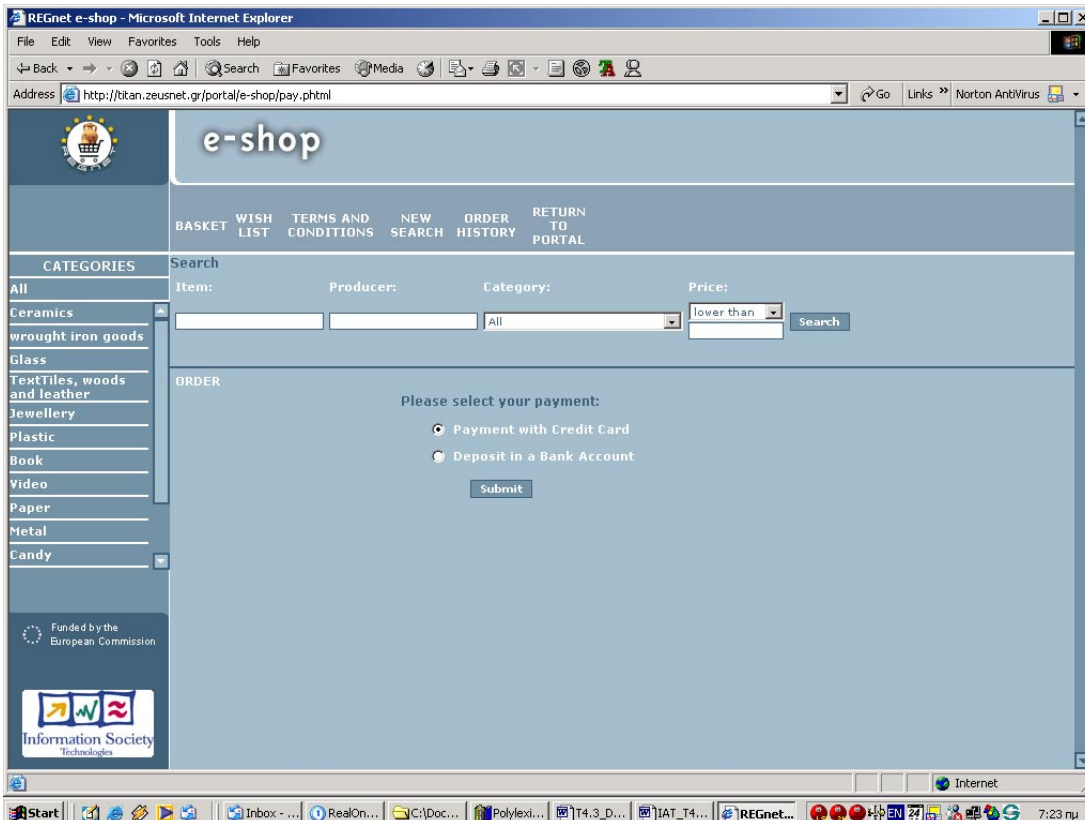


Figure 31: Technical response e-Shop II

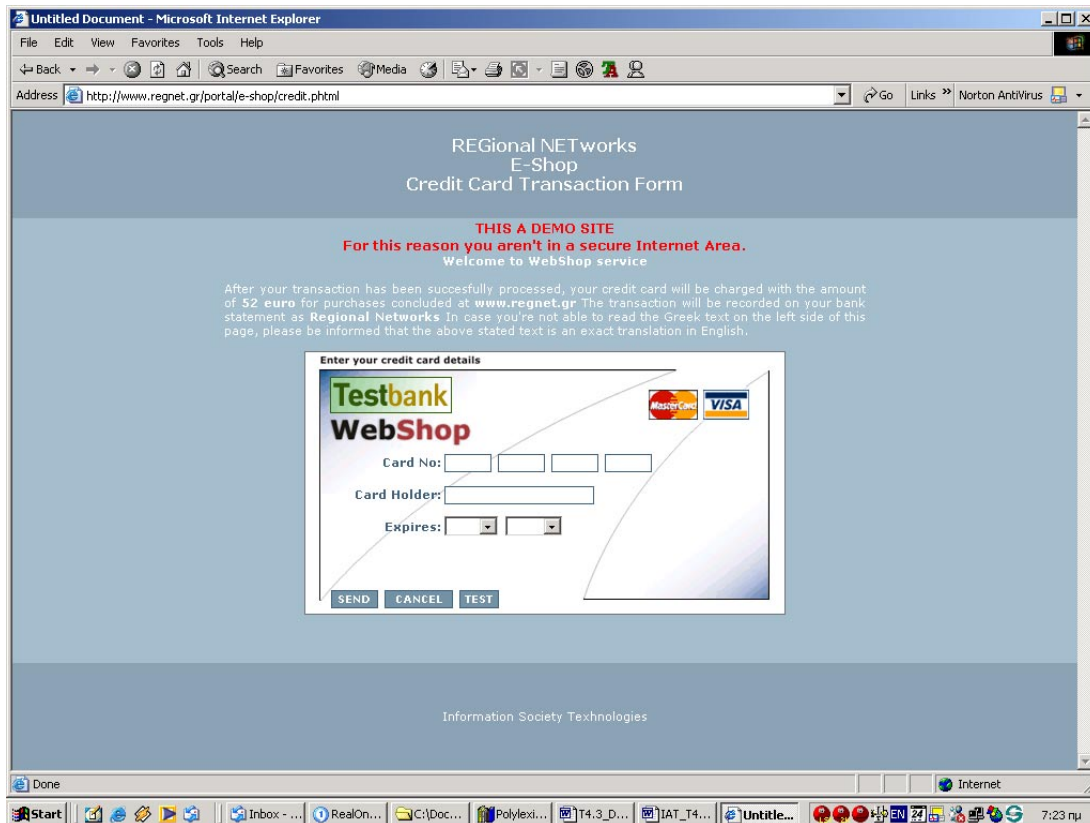


Figure 32: Technical response e-Shop III

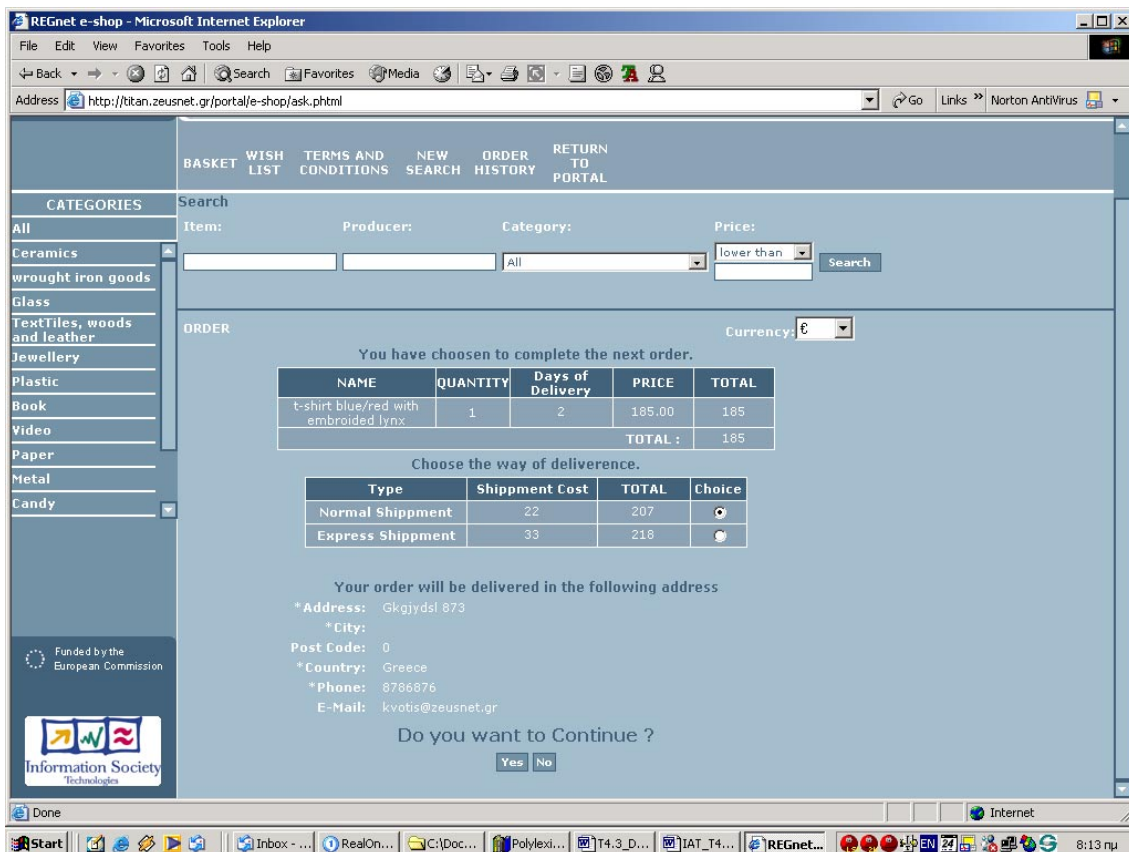


Figure 33: Technical response e-Shop IV



4.1.2.4 E-Auction

E-Auction	
Features already available	
<u>Real Models</u>	We have used real models in order to develop our auction system. We have used standards and rules that are used in most of the currently auction systems.
<u>Expecting an item to be yours</u>	An item can be yours when you have made the bigger and preferable bid on the specific item. Then every user will be noticed by an email about the final purchase.
<u>Currency</u>	We have fixed this. By default all the items are in Euro.
<u>Using "Search"</u>	We have fixed the problem of the combination of "search" with other categories different from "all". Now, it works properly.
<u>Searching</u>	Every user can search through the name, description, date and also by the specific category (there is a combo box with all the categories). It is not possible to know what is stored inside the auction but you can search through the predefined categories of the items.
<u>Length of fields</u>	We have adjusted the length of fields to a more appropriate one.
<u>Editing your profile</u>	There is integration with the ontology system and that means that users can use auction system when they register on the portal. A user can edit his profile from portal and not from auction system.
<u>E-mail</u>	After the closing of an auction an email will notify users.
<u>User agreement and privacy policy</u>	We have added a user agreement and a privacy policy.
<u>Specific information</u>	If you press on the specific image then every user can have a more detailed description of the items.
<u>No need to register if accessing the e-auction</u>	As there is a connection with ontology, user can authorise himself from the portal and then our system can recognise him without any reason to register again into the e-shop. Also we can take the profile of user (address, phone, email...) directly from the ontology and we can use this information for any user's purchase.
<u>Starting and stopping an auction on the same day and hour</u>	We have fixed this problem and now it is not possible.
<u>"Your items"</u>	Problems related to this tool have been fixed. Every user can see his bids and also his items.

Table 12: Technical response e-Auction I

E-Auction	
Suggestions that are not viable	
<u>Changes in the layout</u>	It is based on the agreed layout prototype from us (also for the portal and auction system) and we have asked about comments from all partners. Please suggest opportune adds on but I think that we don't have enough time and resources to redesign our components.

Table 13: Technical response e-Auction II



E-Auction	
To do	
<u>Speed</u>	We will install this to another faster server (Valt's server).
<u>Starting page showing the items of the current auction</u>	We will fix it.
<u>Current price in the first page</u>	We will provide the current price in the first page.
<u>More items in one page</u>	We will fix it.
<u>Categories</u>	More categories can be added to the auction database.
<u>"Edit inserted item"</u>	We are trying to solve the problem occurred when the user inserts a new auction and makes a mistake. Now there is not a possibility for editing the items.
Further comments	
<p><u>Wrong size for images:</u> It is very difficult to solve this problem. We believe that it should be a recommended size of each stored image before users insert them into the auction. Please suggest opportune adds.</p> <p><u>Payment procedures:</u> Most auction systems don't have any payment methods. Users can bid and then they can purchase by a face to face communication or by cash on delivery. But in addition we can use the same payment methods and standards that used in e-shop system.</p> <p><u>Edit an item added to the database:</u> When you have added you shouldn't have the possibility of manipulate this. It is a basic rule for auction systems.</p> <p><u>Adding information:</u> Users can add any information in our system but it is necessary to have a clarified and general form for this task (what fields do you want to have. Please give us your suggestions).</p> <p><u>Products refused to be on sale:</u> The products that auction system should serve are coming from content provider's database so there is not any possibility for users to add any refused products (e.g. pornographic items).</p>	

Table 14: Technical response e-Auction III

4.1.2.5 E-Publishing

E-Publishing	
Features already available	
<u>General</u>	The e-Publishing part of REGNET has undergone a major shift during the project's life cycle. It evolved from a brand new developed module towards an adapted third party based solution, Macromedia Director. This module turned out to be a flexible multimedia authoring tool covering all requirements expressed by the content provider group.

Table 15: Technical response e-Publishing I



<i>E-Publishing</i>
Further comments
<p>The major remarks coming of this new approach after some demonstrations were as follows: suits largely the cultural heritage institutions' needs but represents high cost and complexity.</p> <p><u>Cost:</u> the purchase of Macromedia Director at the time of this writing costs about 1200 Euro. For regional museums this is already a serious item on their budget.</p> <p>In order to cope with this, it was decided that the CSCs should buy this software so that it could be used for several cultural heritage institutions when and for how long they would feel it to be necessary.</p> <p><u>Complexity:</u> because of the very steep learning curve of the software, very rapidly the decision was made that the realisation of e-Publishing productions should reside within the CSCs reducing this way not only the Total Cost of Ownership (TCO) but also the time needed to produce results. For this purpose, sets of templates, guidelines and "cookbooks" corresponding with generally used mechanisms for interactive multimedia productions were generated. In this way, CSCs can offer pre-configured solutions which need only slight modifications to be used in different contexts or with different information resources.</p> <p>As a conclusion we can state that the remarks and the problems put forward by the content providers were overcome by the use of an established multimedia authoring tool supported by REGNET methodologies and "cookbooks".</p> <p>The first results of all this are reflected in the two realisations:</p> <p>The "Faydherbe's traces in Mechelen" production</p> <p>The "Slide show" presentation based on a sequence of REGNET data.</p> <p>Another side effect of e-Publishing is the substantial amount of time needed to edit and translate accompanying texts. This is an important effort that has to be considered in e-Publishing initiatives but the used tool or methodology does not have a direct impact on this matter.</p>

Table 16: Technical response e-Publishing II

4.1.2.6 Topic Maps

<i>Topic Maps</i>	
Features already available	
<u>Templates</u>	The tool does not restrict the user to a specific template. It can be used for authoring any kind of XTM files, taking however into account the XTM 1.0 specifications. The content providers should define a procedure and its corresponding 'template' to be followed, for every XTM file that is going to be created within REGNET.
<u>Programming knowledge</u>	Actually, there is no need for the user to have any kind of programming knowledge. The user does not have to concern about specifications and rules, specified by the XTM 1.0, because the tool provides smart mechanisms of error prevention in the background. Changes can take place very easily: every topic and association can be edited at any time. Not to mention the automatic visualisation of these changes that corresponds to every action taken in the authoring section of the tool. All these



	features are provided to the user without the need for writing even a single line of code.
<u>Authors and copyrights</u>	As mentioned before, the tool can be used for creating any XTM file from scratch. As far as it concerns the authors and the copyrights, a topic 'author' and 'copyright' could be included upon the agreement of the content providers. The tool already supports this issue.
<u>Visualisation</u>	Although the tool was initially developed mostly for authoring and not viewing topic maps, a sort of visualisation is now supported. Images, video and other multimedia data can be viewed by double clicking the appropriate node in the graphical representation of the edited XTM in a separate window. Please point out that the produced XTM files are compatible with the XTM 1.0 specs and can be viewed by every available Topic Map viewer in the market. Also, please note that topic map visualisation in TMG has been mainly adopted as a verification tool (to test the validity and integrity of the created XTM).
<u>Guidelines</u>	An on-line "How To" guideline has recently been added to the "Links" section of the tool.

Table 17: Technical response topic maps I

Topic Maps	
To do	
Building topic map from the graphical representation	At this time, building topic maps from the graphical representation is not possible. It should be taken into consideration at the design and implementation of future releases.
<u>Search engine</u>	The only available "search" mechanism in the current version of the tool is the use of the alphabetically ordered lists of topics and associations. The creation of a more advanced search tool should be taken into consideration at the design and implementation of future releases.
Further comments	
<p><u>Difficulties in using and user friendliness</u>: the tool adopts the advantages of the two most known commercially available tools for XTM authoring, namely: Ontopia Navigator and Empolis K42. As soon as the user understands the philosophy of the tool interface, the authoring of Topic Maps becomes much easier. It is recommended to follow step-by-step the "HOW TO" tutorial found on the 'Links' section of the Topic Maps Generator tool. (http://160.40.50.22:8800/servlet/org.regnet.ontology.XTMLoader). The user-friendliness of the tool is considered to be improved compared to the two aforementioned commercial XTM authoring tools.</p> <p><u>Security</u>: The visualisation cannot harm in any case the produced XTM files because they are stored separately in a native XML database. Only the administrator of the Knowledge Base can access the files. No security problem has been reported during extensive tests.</p>	

Table 18: Technical response topic maps II

4.2 Usability testing: Validation phase II

This validation phase covers the period from 15th January to 20th February. During this period new versions of the tools were presented and some new tools were also introduced.



4.2.1 Test results

4.2.1.1 Portal

We have received several comments and suggestions related to the Portal tool:

- Login: In current version, login is necessary from the start, otherwise there are no working links to anywhere from within the portlets. There is even no hint that one has to login first to make those links (at least partly) active.

The only active head portlet links (without having logged in) lead to "Work in progress"

Suggestions: Notice on front page and/or activating some of the portlet links to the anonymous user.

Eliminate the links that lead to "work in progress" pages.

- Site Map: Rudimentary, only a repetition of the left frame.
- Links: Link "Virtual Exhibitions and Tours" leads to publishing prototype, which is first of all the wrong link target and second does not correspond to project results at all (use of Macromedia director as e-publisher).

Suggestions: either links to virtual exhibitions or de-activate link. E-Publishing should be a link on its own.

Integration still missing; include links to all tools / databases / collections, so that the portal can really be a starting point for all REGNET project partner activities.

Insert links to the objects of REGNET partners, for example:

CSC-Bulgaria <http://www3.iccs.bas.bg>

Contemporary Bulgarian Art (in English)- <http://hs15.iccs.bas.bg/iccs>

Contemporary Bulgarian Art (in Bulgarian) <http://hs15.iccs.bas.bg/iccs-bg>

Russian Art <http://regnet.org.ru/>

Union of Bulgarian Artists <http://hs39.iccs.bas.bg>

Bulgarian Ethnographic Institute and Museum <http://hs41.iccs.bas.bg>

Contemporary Spanish Art...

- Speed: It has been suggested that the system could be accelerated, perhaps hosting on other servers.
- Data exchange: If you are not logged in as a supplier then the functionality "Data exchange" should not be (visible) present on the Portal interface.

The term "data exchange" is not self-explaining; also what makes one use data exchange?
Suggestion: A popup box should give a short explanation of the functionalities present.

- Searching from the Portal: not working now

Suggestion: Here could be inserted the already realised distributed search between

ICCS and Austria, using Z39.50 protocol,

a link to AIT's server, realising Z39.50 search,

a link to ICCS's server, realising Z39.50 search

4.2.1.2 Data Entry, Search and Retrieval

Partners are very pleased and satisfied with this system. The major advantages of this tool are:

- It is easy to use.
- It is very well organised.
- It works very well.



- It loads very fast.
- It is easy and fast to update or edit data.
- The “lookup” function gives a quick sense of what is in a catalogue.
- A very good result if you need a record printed.

However, some comments have been received that must be taken into account in order to improve the performance of this tool:

- “Export” functionality: Very difficult to use. The level of knowledge required to use this tool is too high for a standard manager.
- Searching. Ordering the results: It is a little bit confusing. Records should be ordered according to their record number and thereby always in the same order.
- Simple search: A simple search interface should be present in Portal.
- Interface: Art galleries’ objects are not very well presented. User interface should be improved.
- When there is only text, the frame should display just 50 characters and have TEXT in the pane that normally displays images.
- Results: The format of the detailed list was a little confusing as some partners did not completely understand the relationship between the list in the left hand frame and in the main window.
- SUL catalogue: There are some serious flaws in it.
- KVA catalogue: Images are linked to the wrong record. Accession number must be used for linking.
- Look up in Dublin Core: It is possible to get the list in creator and subject but you cannot search further.
- Swedish characters: Swedish characters are only searchable in full text search but the display does not present them: for instance Körner, Magnus becomes K?r.
- Option “Send this record to...” or “Export this record to...” by e-mail: Missing. This option will allow partners or future customers to send and receive a part of the Data contents keeping the format and not showing all the Database. This will be a fast way to share contents in order to know if the other part is interested in having it in their museum, collection or virtual exhibition.
- Distributed search: Missing. There should be applied the Z39.50 protocol.
- Integration: Data Entry is not integrated with the Topic Maps.
- Support or Guidelines to use the tool, “View List”, the “template” option and some other functions: Missing.

4.2.1.3 Auction

Several suggestions have been received in order to improve the performance of the Auction tool. According to partners’ opinion it should be done:

- Add an “Edit “ function to meet the need of editing the entered data.
- There should be used a “,” instead of a “.” when showing a price (30,00 instead of 30.00). Also, the Euro sign should be placed before the amount.
- As date of insert is not useful for buyers, it should be replaced by the closing time.
- “Open” and “Close” time should be replaced by “Opening” and “Closing”.
- In the current version of the tool, it is not accepted a new auction at the same month. The system should allow to enter auctions at the same month.
- If you choose Your items → bids → look, it appears a box named “bids”. It has been reported that it would be better that it was named “lot-information”, as it shows the “start price” and the “minimum price” and no bids are presented



4.2.1.4 PCM (Catalogue Management)

The major advantages of this tool according to partners opinion are:

- It is very easy to use. You can learn how to use it very quickly.
- It is very clear and well organised.
- It looks very professional.

To be taken into account in following releases, partners have mentioned:

- The meaning of some words is not clear: UPC code, Currency_id, W_measure,
- Volume, V_measure, D_measure.

In "Other entries" it is not clear what will be the result of the functionality selected:

- The Export functionality (what will be the result if you put "yes" or if you put "no"...where is going the exported item?!).
- The Service function (what kind of services can be added, they can offer?!).
- If the action of inserting a new item fails, no warning sign is shown.
- They could not find how to update / delete a warehouse or add a new catalogue.

4.2.1.5 Procurement

The e-Procurement tool is considered a very useful tool.

To improve it, partners have made the following comments and suggestions:

- Wholesalers: from some partners' point of view, one of the problems is to find wholesalers that provide products to the REGNET managers with good catalogues and offers.
- The key is to find good and different wholesalers that mark the difference in their products.
- Homogeneous Market: According to some partners' opinion, the main problem is that the organisation (museum, art centres, etc.) interested in buying something, will have more or less the same products in their e-Shops. This will produce a homogeneous market in all the e-Shops of different centres in different countries. This is bad because one of the most important aspects in the cultural field is the originality of what they offer. This is one of the methods that they have to compete with the others and in this way to mark the difference in quality.
- Small organisations: This tool could be more useful for small museums and organisations because they have fewer opportunities to compete in this aspect because of their budgets and possibilities.

4.2.1.6 E-Publishing (Faydherbe Presentation)

The Faydherbe presentation is a well-made, very attractive and useful tool. It can be used as advertising on a web site to attract people for your museum / collection and make them decide to come and visit your museum. It is also very useful to place it in your museum as a modern, interactive source of information about the collections.

An important advantage of this presentation is the fact that it is easy to change the data and make another presentation based on the same structure.

As suggestions to improve the performance of this tool, we have received:

- Design: It is pretty good but it needs some improvements. In some partners' opinion it is necessary that any multimedia material have to be more dynamic to catch the attention of the user. And also we have to think to who is addressed this material, who will be the main user of it (scholars, adults, expertise's, etc.). This is the most important before to design a material like this. If we are thinking in young people it's necessary to make dynamic the multimedia, if we are thinking in adults the current design is pretty ok, and if we are thinking in expertise's the kind of information must to be more specific and technical.



It is considered necessary to take into account a professional aid of a pedagogue team that is the expert one to design the contents of this kind of materials.

- Clicking on buttons: When you click on any button your step is not registered with any change, like for instance a change of colours in the word that you have pushed, in order to let you notice the previous steps that you have done. This can confuse the user using the multimedia.
- Looking for information: When you enter in "Traces in Mechelen" you can find two options to look for information: from the map and from the left menu. If you choose the map option to look for a place, when you are on a blue dot that marks a place to go in, no sign or message let you know about where you are or which building are you going to visit.

It has been suggested that when you are on a blue dot the word that describes this place on the left menu make a change of colour. Also in the map could appear a message putting the name of the place. This would be in order to situate the user in the map.

- Going back: If you choose one place to visit and you want to go back to the last step that you have done, the system doesn't allow you and it sends you back again to the main menu, changing again the language.
- Descriptions: When you enter, for instance, in the Sculptor entry you can find the text that describes this entry at the end of it, forcing you to scroll it until the beginning of it. It has been suggested that every time that a new user goes in, he or she has to find the description ready to be read.
- Renaming: Rename the button 'restart' as 'menu' (restart gives the user the idea that he will restart the computer).
- Scroll bar: If there is nothing to scroll, a scroll bar is not necessary.
- Dieresis: There is a problem in displaying the dieresis. There is only one dot appearing.
- Changing of the marks: It will be helpful if the changing of the marks on the map is more significant (bigger dot, more intense colour...).
- Places visited: It would be helpful if you can see which churches / fields you have already visited.
- Cost: Very expensive software.

4.2.1.7 Topic Maps

Partners tested this tool using CERT, AIT al Linnaeus Systems.

CERT-system

After some explication from someone how knows the system, the way of using it is clear and simple. As customer, you see what you do, how you have to create the associations and which associations you have created.

As something to improve it was mentioned:

The visual presentation of the topic map is not clear and needs more work.

AIT-system

The visual result is beautiful and very impressive.

As something to improve it was mentioned:

It is a very difficult system to use even with the help of an expert. The input of topics and the creations / definition of associations is very difficult and unclear. A good help / manual with a description of each step you have to undertake can be helpful.

Suggestions

It will be ideal if both systems could be combined: the way of inputting of the CERT-system and the visual presentation (and automatic ordering of the topics in the map) of the AIT-system.

Linnaeus-System

On the whole you get a good overview of the Linnaean theme here.



All in all, partners think that it is quite interesting and it will be quite useful once they get used to using it.

As something to improve it was mentioned:

The purpose of some of the features described in the help function is not clear. For example, while it was fun to click and drag some of the nodes and swing them around, partners do not really understand why they might want to do that.

Suggestions

More multi-media links (sound, picture, video) would definitely be welcome, as partners liked the links to text and images.

It has also been suggested that it would be preferable to explain the occurrences in the first image, for instance web site – Linnean Garden, Web site – Herbarium etc, so that the user sees at once which web site we are referring to.

4.2.1.8 REGNET Broker

Partners think that this new tool is or will be very useful for those organisations that already have stored their catalogues in xml files. It considered a very fast and useful tool to transfer items from the Database to the e-Shop.

There are just a few suggestions to improve this tool:

- It is necessary a direct link from the Broker to the portal.
- After choosing “PCM” the system automatically selects catalogue 2. It should start with the first catalogue.
- Use the term “REGNET Broker” for both the Data exchange and the REGNET Broker as this is the most self-explaining term.
- Writing error: “data soure” should be changed into “data source”.
- Now it is not possible to transfer Bulgarian objects (nevertheless the server’s place – in Bulgaria or in Austria) to the E-shop.
- The possibilities of the Broker should be expanded.

4.3 Access statistics

In this section we have included a selection of the statistics that have been logged of the REGNET-System (csc000.cscaustria.at). Specifically, we have included the following statistics:

Summary: It contains a summary of the statistics that can be found on the REGNET site.

Countries: Graphical representation of the countries that accessed the REGNET site during a month.

Days of the Week: Table containing the rate of access that occurred during every day. From this table we can conclude which days are more probably to be accessed.

Most Accessed Pages: Table containing the most accessed pages of the system during a month. This table is useful to determine the most popular and tested pages

The months that have been included in this document are November’02, December’02, January’03 and February’03. During these months the most important part of the validation phase was carried out, and, consequently, these months are the most significant ones.

For further statistics of these months, for statistics of other months, or for access statistics of the site www.regnet.org. Please visit pages at: http://www.regnet.org/statistics/statistics_overview.htm.

4.3.1.1 November



Summary			
Unique Visitors	362	Homepage Hits Average per day	0
Homepage Hits	2	Webpage Views Average per day	2358
Total Web Site Hits	73098	Unique Visitors Average per day	11
Bandwidth Used	0 bytes	Total Domains	171
Most Popular Day	11-19	Total Countries	30

Figure 34: Statistics November-Summary

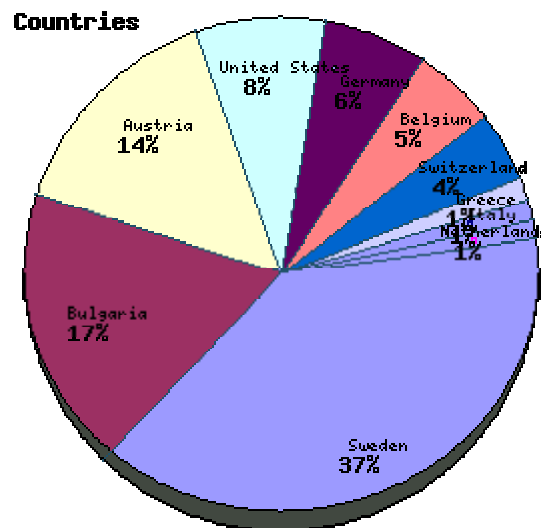


Figure 35: Statistics November- Countries



Days of the Week

day	hits
Tuesday	19942
Monday	14427
Thursday	13071
Friday	11983
Wednesday	9909
Sunday	6903
Saturday	2761

Weekend (12.2%), Weekdays (87.8%)

Figure 36: Statistics November- Days of the week

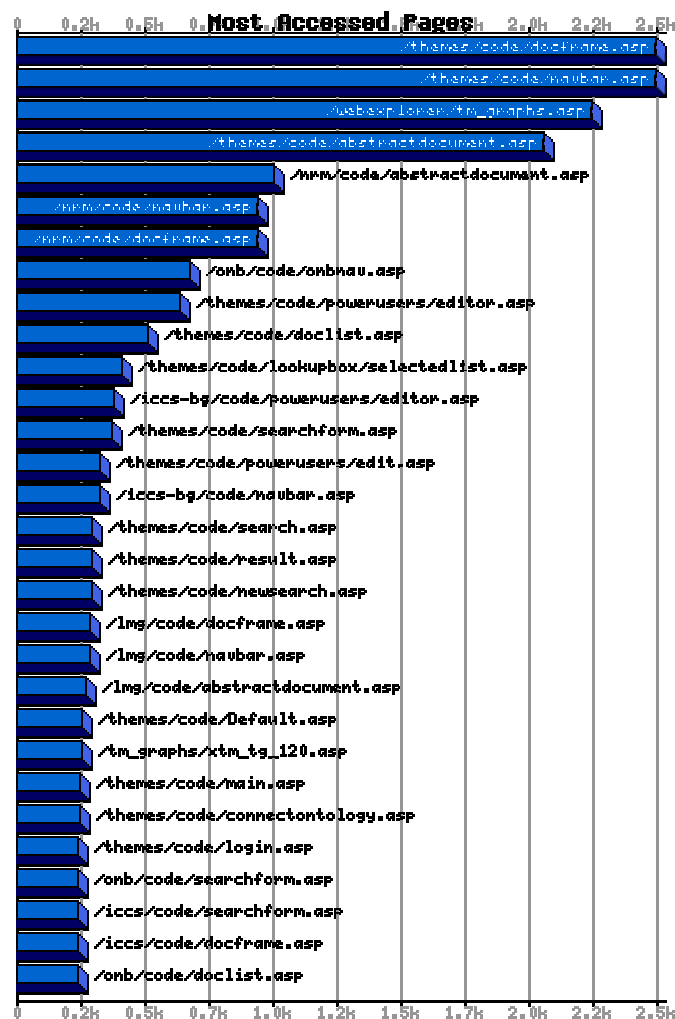


Figure 37: Statistics November- Most accessed pages



4.3.1.2 December

Summary			
Unique Visitors	332	Homepage Hits Average per day	0
Homepage Hits	11	Webpage Views Average per day	2049
Total Web Site Hits	63521	Unique Visitors Average per day	10
Bandwidth Used	0 bytes	Total Domains	150
Most Popular Day	12-13	Total Countries	30

Figure 38: Statistics December- Summary

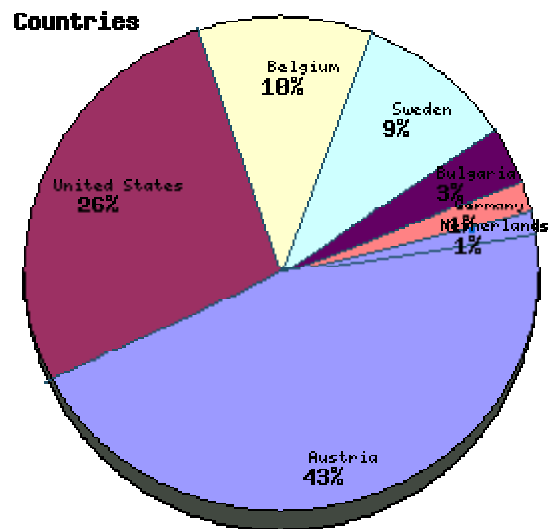


Figure 39: Statistics December- Countries



Days of the Week

day	hits
Friday	25982
Monday	13350
Thursday	13306
Tuesday	8359
Wednesday	3522
Sunday	2067
Saturday	1436

Weekend (5.1%), Weekdays (94.9%)

Figure 40: Statistics December- Days of the week

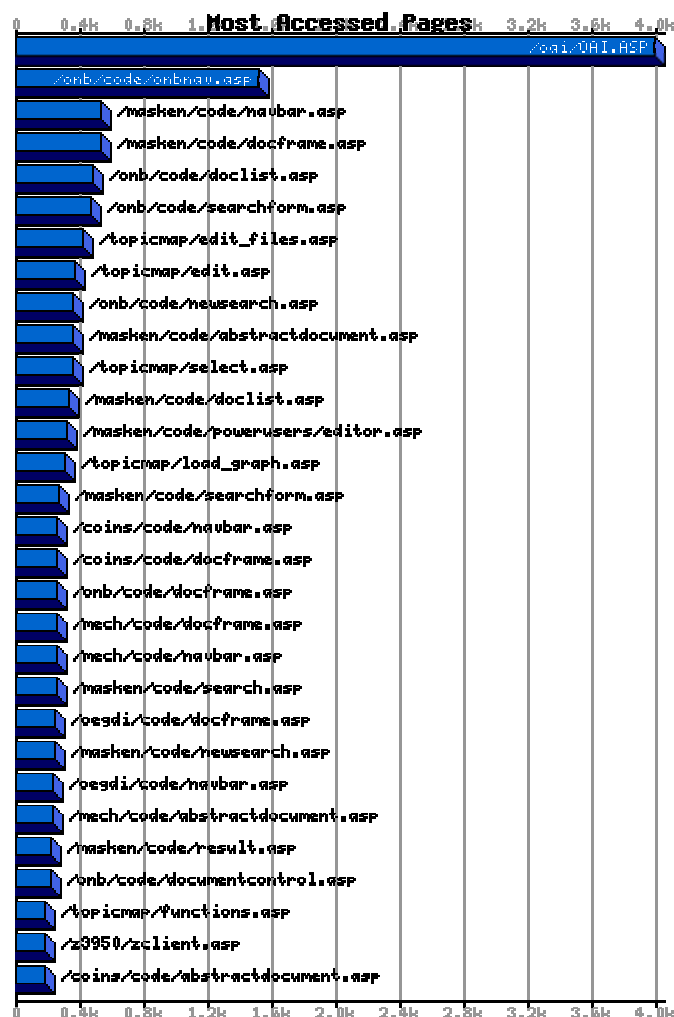


Figure 41: Statistics December- Most accessed pages

4.3.1.3 January



Summary			
Unique Visitors	530	Homepage Hits Average per day	0
Homepage Hits	16	Webpage Views Average per day	3723
Total Web Site Hits	115413	Unique Visitors Average per day	17
Bandwidth Used	0 bytes	Total Domains	185
Most Popular Day	01-20	Total Countries	29

Figure 42: Statistics January- Summary

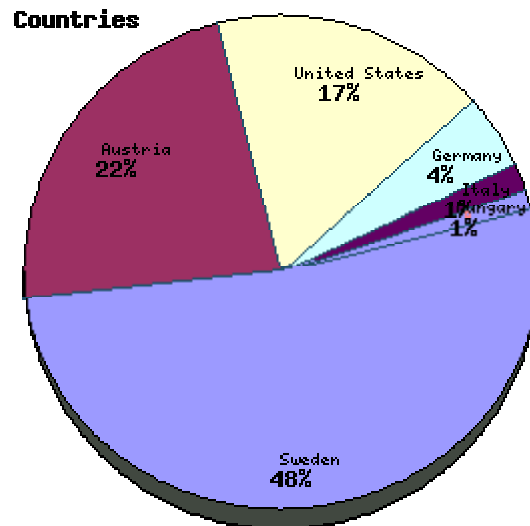


Figure 43: Statistics January- Countries



Days of the Week

day	hits
Wednesday	34950
Friday	24696
Monday	22683
Thursday	20205
Tuesday	16246
Saturday	3237
Sunday	1649

Weekend (4.0%), Weekdays (96.0%)

Figure 44: Statistics January- Days of the week

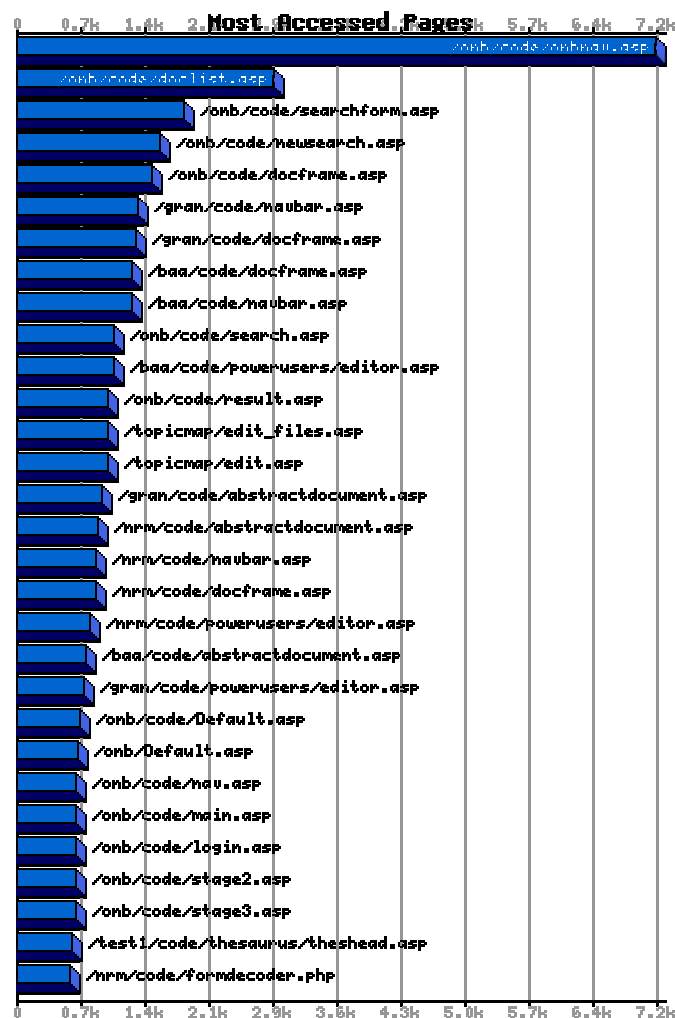


Figure 45: Statistics January- Most accessed pages



4.3.1.4 February

Summary			
Unique Visitors	928	Homepage Hits Average per day	1
Homepage Hits	27	Webpage Views Average per day	7083
Total Web Site Hits	177084	Unique Visitors Average per day	37
Bandwidth Used	0 bytes	Total Domains	265
Most Popular Day	02-06	Total Countries	32

Figure 46: Statistics February- Summary

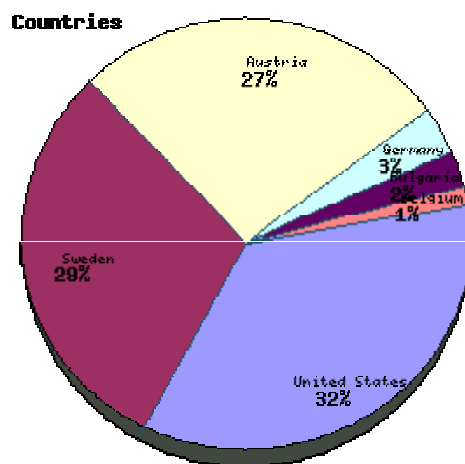


Figure 47: Statistics February- Countries



Days of the Week

day	hits
Monday	37547
Thursday	37347
Tuesday	32163
Friday	31707
Wednesday	29496
Sunday	8877
Saturday	7869

Weekend (9.1%), Weekdays (90.9%)

Figure 48: Statistics February- Days of the week

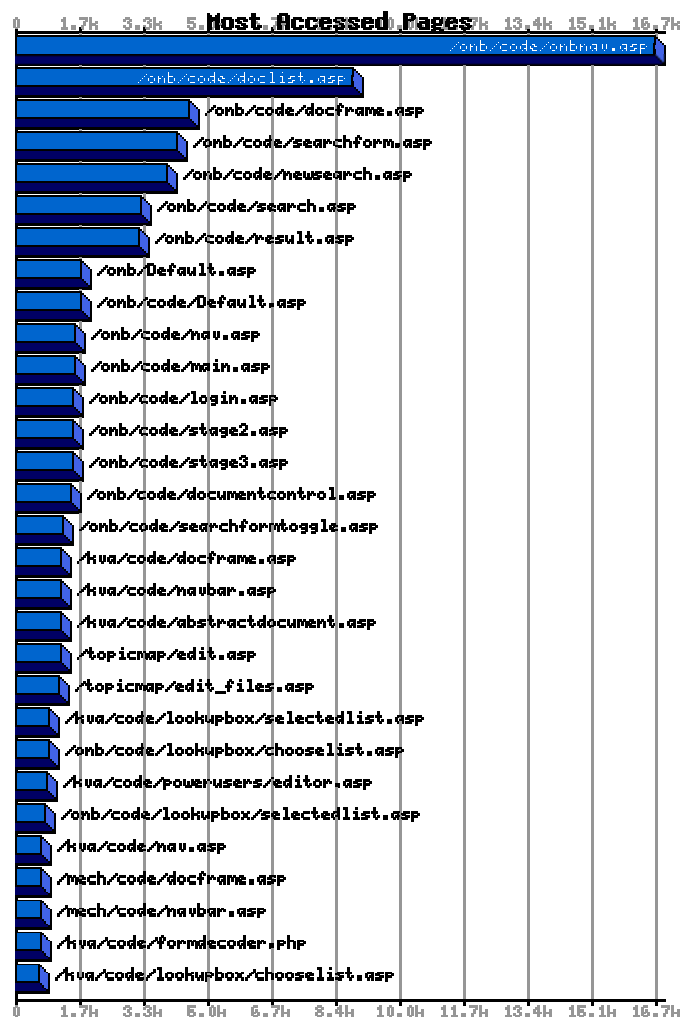




Figure 49: Statistics February- Most accessed pages

4.3.1.5 Consolidation

As we have seen at the graphical representation of the access, there has been a great increase of visitor during the validation phase, the WebPages views average per day has reached the figure of 7083 visits. This means an increase of 300% from November to February.

Regarding the Total Web Sites Hits, we have reached the figure of 177084 (form 73098 in November), which represents an increase of 230%.

These facts clearly reflects that the system is more mature and consequently that its pages are of more interest to the public. The most accessed pages vary every month, but as a rule, we can see on the graphs that there is a strong interest for the databases of the content providers partners as they are always situated among the most visited ones.

4.4 VNET 5

VNET5 is a thematic network funded by the European Commission as part of the IST research program. The objective is to improve user-orientation in development teams in interactive electronic publishing.

This methodology has been included in the validation process. We sent them 30 questionnaires (please, see a template at Appendix 1) and a "Brainstorming Session" document from Den Haag Meeting. However we have not yet received the results. We have received a Memorandum as follows:

Memorandum

As part of the VNET5 support activities the user validation activities of REGNET were discussed. A document "Brainstorming Session" was received on 11.12.2002 and is considered. In spite of the rather limited set of options remaining (VNET5 project terminated on 31.1.2003, REGNET project is due to conclude shortly – end of March 2003 -, and effectively there is no budget left) the user validation needs will be considered and discussed.

The main source of user validation data should be the feedback from users in the demonstration phase of the REGNET project. These might include

observation:

On a technical level (such as tasks completed, time, error states, requests for help)

as well as observation of user behaviour investigation of user attitudes and subjective valuations of users.

Methods to be used are determined by the context and users taking part in the demonstrations. The selection of appropriate methods, taking the limited resources into account, can be made with the help of an expert from the set of methods and approaches described in the VNET5 resources.

The Deliverable D3 "Enterprise Engineering and Market Analysis" describes a substantial number of use cases, user groups and requirements. The most relevant of these should be selected, based on the business strategy identified, and should be used in the evaluation.

Evaluation pursues two objectives:

- Identify shortcomings and improve system (results feed back into systems design and implementation)
- Assess the benefit for customers and users (results feed into marketing and business planning)



Some of (a) has been carried out, as can be understood from the comments contained in the document "Brainstorming Session". This activity should cover as many of the relevant tasks as possible, and often small numbers of subjects are sufficient to identify the most important shortcomings and problems (and produce conclusions which are sufficient to guide further technical development). At this stage the deficiencies identified and described by some of the authors need to be assessed, and the consequences for design and possible remedies identified.

Assessing the benefit for customers and users (b) provides a conclusion about the potential of the application to be accepted by customers and users. This includes the identification of the added value provided, and can describe the value relative to the cost for purchasing, implementing and operating the applications (which also guides price and marketing strategy). Appropriate methods, at various stages of the project, include comparative market analyses, focus groups, prototype tests and opinion surveys. The use of questionnaires is usually more cost-effective than interviews. The questionnaire on generic user requirements developed in VNET5 is applicable for this purpose.

The number of completed VNET5 questionnaire returned from IEP projects is at the moment not large enough on its own for a statistical analysis and would not yield reliable and valid results. We expect to receive enough questionnaires from other projects before the end of February to carry out a first analysis. This will provide comparative data against which the data set from REGNET users can be compared.

VNET5 generic user requirements analysis is an activity which will continue throughout this year, and further data will be collected.

Valid investigations of market related issues require large and well selected representative samples. Often market studies use several 100 subjects. The selection of samples of users should be based on the business strategy, and select specifically groups such as authors, museum staff, educators, students, museum or library visitors.

Appropriate methods can be selected from the VNET5 resources, where help is available from experienced experts. Planning of further investigations may be more difficult in view of the late stage of the project, and the fact that resources have been exhausted. A limited amount of support (consulting on methods and advice on the analysis and presentation of results) can still be made available by VNET5.

Some comments on the document "Brainstorming Session" :

While strengths and weaknesses in the "SWOT" analysis are described quite detailed, the opportunities and threats (especially from the market perspective) are not discussed in depth. Unless these are contained in other documents, this is the aspect which needs to be further elaborated, as is also stated by some of the authors of the document. The advantages are described more generic than the weaknesses, which are quite specific.

The issue to be addressed appears to be the added value provided by the REGNET system for specific users. This implies a focus on user needs rather than on the usability of the implementation.

The user requirements described in D3 indicate that the success factors for REGNET applications include the technical quality of the implemented functionality and the fit to user tasks. For the users, aspects such as efficiency (of task completion), cost, time, legal aspects and image / status are mentioned. The latter factors may be decisive to determine the success of the applications, but are not easily analysed and assessed within a short time. In further discussions we could elaborate this aspect.

Further analysis in this direction could be a work task of its own in follow-up activities.



5 Final Conclusions and recommendations

This section of the document includes the SWOT analysis with a detailed list of strengths, weaknesses, opportunities and threats. Here can also be found the conclusions and recommendations. Conclusions are summarised in ten statements that deal with the actual status of the system. Recommendations are based on these conclusions and the most probable situations the system will be involved in the near future.

5.1 SWOT analysis of the REGNET-System

This SWOT analysis aims to establish the internal and external factors that affect our System. It was carried out during a special Meeting held in Seville, where the leaders of Work Package 4 (IAT, IMAC and TARX) worked together to obtain a more valid result. Firstly we identified the Strengths and Weaknesses of the tools, taking into consideration the two validation phases and our personal impression as evaluators. Then, we identified the Opportunities and Threats that our system will face once it begins to operate on a regular basis. We used the information provided at the market preparation study for the REGNET-System along with our personal view of the market and our experience and interests on the matter. Once the main points were clearly stated we voted the issues and reached to very interesting conclusions.

5.1.1 Strengths & Weaknesses

Innovation (8.33)

The REGNET-System offers an innovative vision of the world of Cultural Heritage. The Thematic Approach that has been developed is thereby very interesting. The use of the latest technologies and methodologies present a very competitive product. It has been used mainly Open Source, about an 80% of the total.

Another important innovation that has been integrated in the system is the multisearch facility implemented for the e-business tools. This is an advance feature that offers a better and more professional product.

The negative factor of the innovation of the system is a decrease in its reliability, which will be overcome as the customers get acquainted with the new products.

Internationalisation /Regionalisation (7.83)

The System has been translated in detail. All the contents, the interfaces and the knowledge management can be accessed in a total of 10 different languages, among them some regional languages have been taken into consideration, such as Catalan. Furthermore, all these translations are an important innovation of the REGNET-System.

Another key factor about the internationalisation have been developed when generating topic maps, they can be produce in the language you choose.

Despite of all the effort dedicated to the translations, the final results have not been yet integrated.

Benefits/Costs (7.67)

Every CSC will make the necessary evaluation for selling the system but it can be foreseen that the most important benefits that a customer of a CSC will obtain for its membership are:

- Being part of a strong Cultural Heritage Community
- Trying to participate to further funded project
- Enabling different cultural European institutions to co-operate and to be compatible, choosing agreed models
- Maintenance
- Informatic Personnel



- Server
- Open Source

Some calculations are needed to be established. On the basis, we can make the following approach: 50% maintenance + 25%licence +25 % membership.

Functionality (7.34)

The REGNET-System covers a wide range of functionalities. We cover both on-line and off-line production. Among the on-line functionalities we can mention the Topic Maps, Data Entry, Product Management Catalogue, e-shop and e-auction. E-Publishing offers the opportunity of personalise products. These functionalities are very comprehensive although some are not good enough in detail. Due to the fact that some modules are not yet sellable we are not yet ready to the market.

User friendliness (5.33)

The user friendliness of the system is still in need of some improvement. The main advantage the system offers is the personalisation of the layout, the languages and the Look and Feel. However, regarding some tools, such as the Data Entry, the interface was the most reported weakness, and some suggestions were included to overcome this. Moreover, the images and pictures are considered as not appealing enough and a further effort is required to improve the general appearance.

Reliability (5.33)

The system offers a professional look, which made the final result a more trusting one. The system is stable and its components work quite well. Nevertheless, there are still some "under constructions" pages. Due to the quality of the provisional server where some tools are hosted, there are some occasions when the system gets blocked. The system is still to be improved from the side of the technical partners. Consequently, this is no a critical factor as we will work on it the future. There is a big difference between the tools, but in general, although the system is not completely reliable it can be trusted. Finally, as it was previously mentioned, the reliability can be also explained by the innovative products.

User Support (4.67)

The User Support is a relative weakness. There are still some problems with the multilinguality and with the sources in general. The Online help has not been integrated which make the performance of the task more complicated. The interface is not step by step, which also have effects on the supportiveness. The model behind is not clear in any case; there is no ID, no contract number. It can not be found who is responsible of the system with clarity.

Here we can see a graphical representation of the above mentioned internal factors.

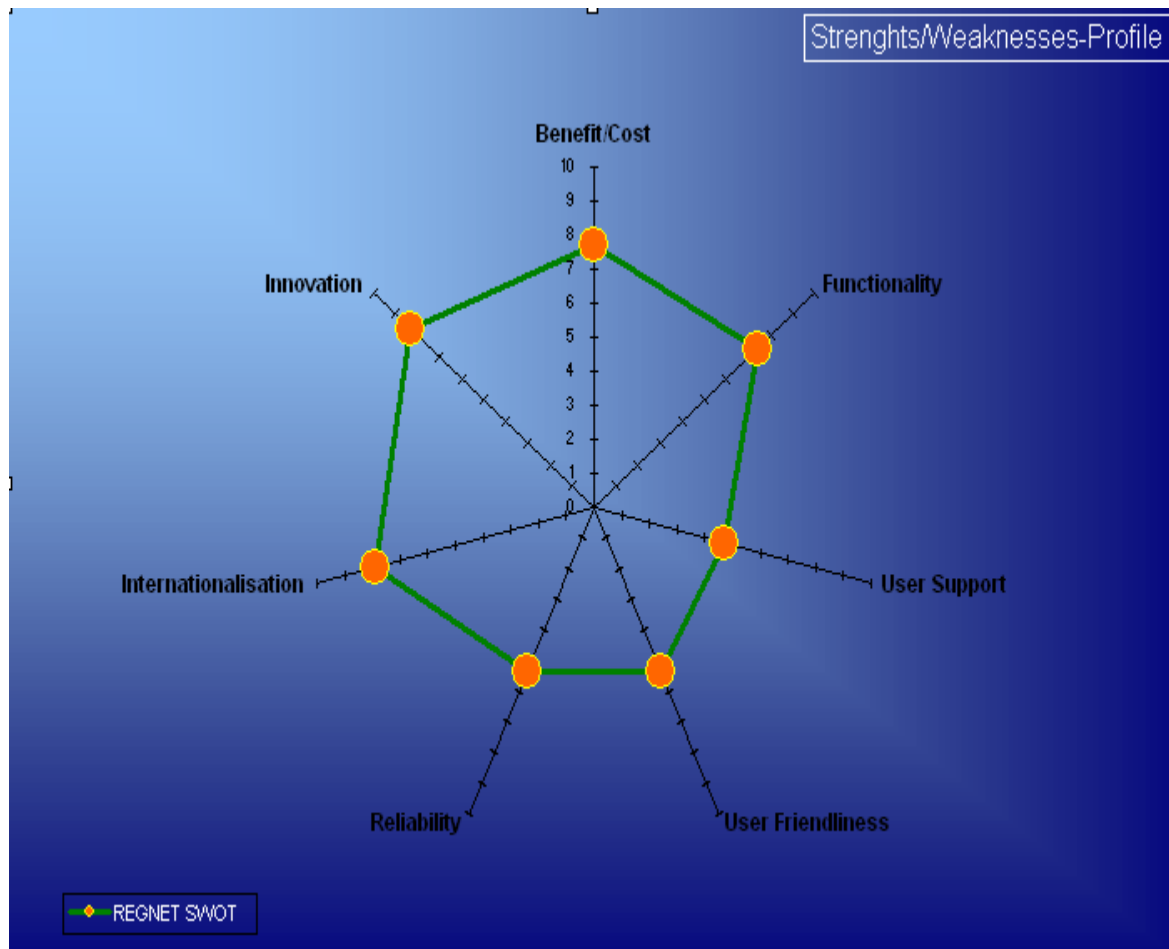


Figure 50: SWOT Analysis- Strengths/Weaknesses Profile

5.1.2 Opportunities and threats

Strengthening small cultural heritage institutions (8.33)

Looking at Europe's memory institutions from the viewpoint of their awareness of new technologies, we are confronted with a wide spectrum with regards to the adoption and exploitation of the benefits information and communication technologies offer to these organisations. On the one end, there are the pioneer institutions and early adopters of information technologies among libraries, archives and museums. These institutions have a clear plan for digitising their collections and spearhead market development by thinking of innovative ways of how to better exploit their digital collections also commercially on the World Wide Web. On the other end of the spectrum, we find mostly small archives, libraries and museums, which are neither aware of the new technologies and their possibilities nor do they possess the financial as well as human resources to actively participate in the new development.

Cultural Tourism (7.67)

Cultural Tourism is one of our bigger and clearer Opportunities. The collaboration with other related domains, such as restaurants, shops, Hotel and Catering Industry and tour operators and Travel Agencies will permit to have access to a wider market. Regional bodies and City Council can join us too. Cross Borders Initiatives (collaboration between countries) are also of great interest. This combination of domains will lead to a more complete and demanded offer.

**Spending money in culture (7.33)**

In lots European Countries there are acquisitive people from a range of age (in their 50s) interested in spending money in culture. This group of people is on the increase; life expectancy is also higher. They are successful professional, who are about to retire, and who have a lot of time and money to spend in leisure things, like culture. This is one of our target market and potential final users.

Increasing Internet User (7.00)

In some European countries internet users is still increasing while in some other the number is already very high, meaning lots of potential customers. On the other hand, the number of PC sold is not so important as in the last years.

Wireless Technologies (WAP, PDA...)(6.67)

New features are coming out every day in mobile phones (sound, video...). The speed of them is getting better. This market is increasing at the moment, and advances in the latest technologies are being constantly updated and required (Bluetooth, GPRS, wireless, WAP). The possibility of reaching a fully interactive navigation must be followed. An on the spot personalised interactive connection will be integrated when possible. The size of the screen can become a problem; quality for images will then have to be taken into consideration. Batteries can also provoke problems.

Investment in Pieces of Art (6.00)

The investment in Pieces of Art is an actual reality due to the actual decreasing investment in bonus, shares... Pieces of arts become an important alternative. Nevertheless, it also has some risk involved as no one can predict the future tendency. Nowadays there is an actual boom.

The “haves” and the “not-to-haves” (4.00)

The introduction of a system that is partly aimed at the new technologies and terminal can have as a consequence an increase in the existing gap between the “haves” and the “not-to-haves”. The proposal to overcome this possible threat is the installation of kiosk, public terminal in related places (churches, libraries, and galleries...)

Following all the opportunities (3.67)

The major threat concerning this factor is the Niche Market (small market with not so many customers, but very specialised, modest in some things but brilliant in some others). Big companies can become also a threat. Due to the wide range of existing technologies, we cannot be updated with all of them at the same rhythm of more dedicated or bigger companies.

Trust in Internet payment procedures (2.33)

It is commonly known that there is not trust in Internet Payment Procedures. This can be exemplified by the recently hacks of databases. Consequently, this is still considered as dangerous and not trustworthy. The necessity to have a secure and updated protocol is essential. There is also another threat in this area; this is the internal threats within the personnel. Unfortunately, this can never be avoided and will always remain a threat.

Competitors (2.33)

Competitor can come from different branches, very specialised and advanced. The classical competitors are very big companies, that are coming from the field of collection management system, that have a established clientele while we are looking for new. We take small museums and those who are willing to participate and so, we have more difficulty than them in spreading our market.

See D6 in order to find an analysis of competitors.

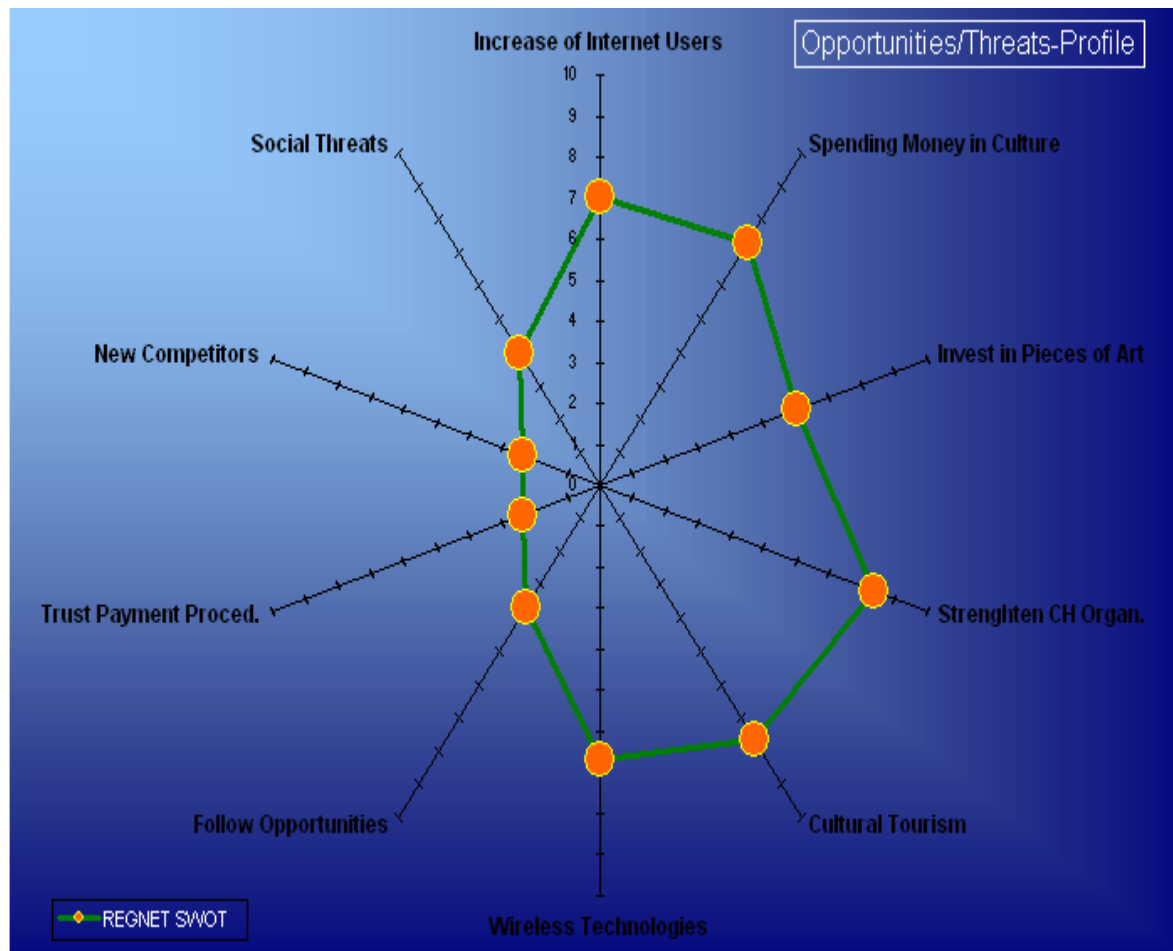


Figure 51: SWOT Analysis- Opportunities /Threats Profile

5.2 Scenario of the constituting parts for CSC financial planning

This section describes a series of elements involved in setting up scenarios for the financial planning of the Cultural Service Centre. We would also like to suggest a further look at D6. There we can find some figures of more mature competitors that could be used as basis for the evaluation result

On a general basis we already can identify the following areas:

Costs:

- Installation of the technical infrastructure (depreciation period of 2 years)
- Buying external licences (e.g. e-Publishing)
- Obtaining internal licences (between CSC partners)
- Telecommunication lines (Internet)
- Personnel
- Maintenance
- Logistics (premises, material)



- Research efforts

Income:

- Membership fees
- Licences of sold REGNET modules (E-Business module)
- Granting internal licences (between CSC partners)
- Dedicated projects (e.g. virtual exhibition)
- Services on technical, content, editorial issues (consultancy on topic maps, thematic approach, domain specific copy writing and translations)
- Hosting and housing of Cultural Heritage related systems
- Maintenance (e.g. 12-15 %)
- Workshops
- Training
- Percentage on e-Shop turn over
- Sponsoring

Depending on the specific strategy of every single CSC, this scenario can largely vary and take completely different directions from one CSC to another.

5.3 Conclusions: 10 statements about REGNET

As conclusions, we are going to establish ten statements which aim is to reflect the actual situation of the system, highlighting its major advantages and the features where more work and effort is needed.

1. The REGNET-System as a whole turns out to be a usable system but it is not completely self-explaining
2. The System contains the basis issues and structures to reach a full international level. At this stage of the project this is only partly realised.
3. The System contains all the functionalities needed in a Cultural Heritage Environment. The market potential of some modules is not equal. Some of them will only reach full potential at a later stage.
4. The integration of the System provides a complete offer. Some integration is still missing but foreseen in the near future.
5. User Support is addressed but needs lots of improvement.
6. A lot of innovation has been included and as a consequence some instabilities in the system function could occur.
7. The tools on their own are competitive, specially when they are considered as a whole but every tool could be threatened by niche market players.
8. The REGNET-System shows evidence to address the Cultural Heritage domain. Nevertheless, additional effort should be carried out to make it more distinctive.
9. Cultural Heritage Institutions will benefit of lower total cost of ownership (TCO) when participating in the Cultural Service Centres (CSC).
10. Increasing spending on Cultural offers and goods will boost the business opportunities for CSCs.

1. The REGNET-System as a whole turns out to be a usable system but it is not completely self-explaining

The REGNET-System combines different tools that were developed by different technical partners.



After analysing the tests results, we can conclude that every tool implies a different level of complexity. To deal with this complexity several steps should be carried out as soon as possible. An on-line help, an user manual and a step-by-step interface are possible solutions that are being developed by the responsible technical partners and will be integrate in the near future. Nevertheless, the REGNET-System as a whole turns out to be a usable system

2. *The System contains the basis issues and structures to reach a full international level. At this stage of the project this is only partly realised.*

Internationalisation has been taken into account for the contents, the interface and the results of the tools. This is one of the most important factors as the system aims to be multilingual. Nowadays, we have 10 languages at the disposal of customers and most of the translations have already been done. However, not every translation has yet been integrated at this stage of the project.

3. *The System contains all the functionalities needed in a Cultural Heritage Environment. The market potential of some modules is not equal. Some of them will only reach full potential at a later stage*

Although we have lots of different tools and some of them are completely ready to use, other will reach their full potential once the development is finished.

4. *The integration of the System provides a complete offer. Some integration is still missing but foreseen in the near future*

The System includes different tools and different databases. A REGNET Broker has been developed to join two of the database systems and some links have been included make the navigation possible. However, the integration is not yet complete but foreseen in the near future.

5. *User Support is addressed but needs lots of improvement*

Technical Support for the final users is foreseen in order to provide a complete service of maintenance of the System. It is in need of much improvement as the CSCs are not fully operative yet.

6. *A lot of innovation has been included and as a consequence some instabilities in the system function could occur.*

One of the main characteristics of this System is that it includes very innovative techniques and tools and, as a consequence, until everything is properly tested, fixed and working under a regular basis it would not be possible to have a completely reliable system.

7. *The tools on their own are competitive, specially when they are considered as a whole but every tool could be threatened by niche market players.*

The system as a whole can be considered a very useful and complete product as it covers a huge range of facilities related to the Cultural Heritage. On the other hand, this generality can lead to a lost of details when referring to a concrete branch of the wide market we are trying to have access to.

8. *The REGNET-System shows evidence to address the Cultural Heritage domain. Nevertheless, additional effort should be carried out to make it more distinctive.*

In spite of the fact that all the contents of this system deal with Cultural Heritage, it is not very intuitive at a first sight that this is the final aim of this product. It is needed additional effort in order to improve the interface and, as a result, give it a more distinctive appearance.

9. *Cultural Heritage Institutions will benefit of lower total cost of ownership (TCO) when participating in the Cultural Service Centres (CSC).*

One of the major advantages that a Cultural Heritage Institute can find in our product is the possibility to have access to a very innovative and complete tool. Otherwise, the cost involved in the developing of a similar system by their own would be too high to be implemented. Participating in one of our CSC will increase the competitiveness of the Institutions at a relative low cost.

10. *Increasing spending on Cultural offers and goods will boost the business opportunities for CSCs.*

As it was mentioned when talking about the opportunities in the SWOT analysis the increasing spending on Cultural offers and goods represents a great economical chance to our System, as it



supplies a complete product to meet these new needs.

Table 19:REGNET- 10 Statements

5.4 Recommendations

The following recommendations are based on the conclusions set in the previous section and the opportunities and threats already identified and analysed. Knowing the actual status of the system and the probable evolution of the market, we could set these recommendations which should be taken into account when establishing future strategies for the improvement of the product:

1. To increase the usability of the System.
2. Promote the Product as much as possible
3. To continue working with Open Source Technologies.
4. To focus attention on the integration of the different modules.
5. Avoiding the relative lack of reliability by debugging the System.
6. To work on developing more specialised modules.
7. CSCs should start working on their own as soon as possible.

1. To increase the usability of the System

More specifically:

- Integrate internationalisation
- Add a complete on-line help
- Development a step-by-step interface
- Users manual
- Integration between the modules

Technicals are already working on all these features and they will be integrated in the future.

2. Promote the Product as much as possible

In order to increase the number of customers and to reach to a wider market, CSCs should work hard on promoting the System, focusing on the Regional Institutions, as they could be the major potential customers. They are the one who can take more advantages of this kind of System.

3. To continue working with Open Source Technologies

The Using of Open Sources technologies seems to be the tendency. Most European Companies and Governments are including these kinds of technologies in their Systems. We are already using ASP (Application Service Providing), PHP...

New technologies that are about to appear in the market should be taken into account. This will have as a direct consequence the possibility to continue offering the best technology at the lowest cost, which is one of our most important values.

4. To focus attention on the integration of the different modules.

Despite of the fact that the system is composed by different and independent modules, additional effort should be made in integrating these modules in order to be able to sell the system as a whole, as if it was just one product.

As it has been previously mentioned, some modules are already integrate and after registration at the Ontology, the data introduced is shared with other modules, simplifying the process to the customer.

Visual integration should also be taken into account and links to different parts of the system are essential to provide an easier and clearer way of working.

**5. Avoiding the relative lack of reliability by debugging the System.**

Although the instability is due to the rate of innovation included, it is very important for a customer to have a reliable system, and so a further debugging is needed.

This debugging can and should start by following the suggestions and comments of the validation phases. This is a very valuable input as it is the opinion of the final users what is at stake.

Furthermore, after analysing the validation documents, we can conclude that the most demanded improvement of the system as a whole as a kind of on-line help. This will sort many of the actual problems reported of the Regnet Site.

6. To work on developing more specialised modules.

In order to cover the niche market with our product, more work is needed to develop more specialised modules to meet the needs of this kind of customers.

CSC should provide this kind of personalised products. E-Publishing products and services can work as a first approach and, in the future, more examples of these materials should also be available to the customers, enriching the offer and so attracting more Regional Institutions.

Not following this recommendation will lead to an important lost of customers and commercial possibilities.

7. CSCs should start working on their own as soon as possible.

Nowadays, the CSCs that have appeared as a consequence of the REGNET project are associated to CSC Austria. Therefore, CSCs should start operating on their own as soon as possible. This will suppose a more rapid introduction of the System in the market.

Furthermore it will allow the system to work on a regular basis and so to offer the Regnet functionalities to a real customer. This will also allow to study how the system works on every day situations.

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Appendix I – Usability testing questionnaires