TWINNING CONTRACT

Support to the State and Entity Statistical Institutions, phase V Bosnia-Herzegovina

MISSION REPORT

on

Promotion of Dissemination

Component no 3.3
Activity no 3.3.5

Mission carried out by
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Statistics Denmark
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List of Abbreviations

BHAS	Agency for Statistics of Bosnia and Herzegovina
FIS	Institute for Statistics of Federation of Bosnia and Herzegovina
RSIS	Institute for Statistics of Republika Srpska
ToR	Terms of Reference
RTA	Resident Twinning Adviser

1. General comments

This mission report was prepared within the Twinning Project „Support to the State and Entity Statitstical Institutions, phase V". It was the fifth mission to be devoted to dissemination within Component 3.3 of the project. The main topic of this mission was to look into user interaction.

The consultants would like to express their thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Bosnia-Herzegovina, and which highly facilitated the work of the consultant.

The views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, BHAS, FIS, RSIS or Statistics Denmark.

The activities in this mission were dedicated to understanding user behaviour and to testing of usability. As a background for the usability testing lies the principles of user-friendliness mentioned in the principles of dissemination described in the previous mission 3.3.4:

Communication with users is conducted with the purpose of understanding their needs. Development of user-friendliness is based on surveys of user satisfaction. The user satisfaction is monitored on a regular basis and is systematically followed up.

Users should be able to find as easily as possible all relevant information about statistics, including information about release times, revisions, final data and errors.

Data on the use of statistics (e.g. evaluation of downloads and subscribers of reports) are analyzed to support priority setting and user consultation and to improve the website.

Visualising statistics often creates a better understanding of the data that what can be shown in tables, text or databases. Visualisation of the data should be made out of the interest of the users.

As such it must be stressed that systems for dissemination must be developed in dialog with the users and that all dissemination systems should be tested in order to assess how they meet the needs of our users.

The concrete activities of the mission were:

- Orientation / briefing on usability and usability test
  Development of test cases
- Testing of current websites using the "test cases" and usertesting.com
- Analysis of test results
- Preparations of re-test
- Analysis of user behavior data on current websites
- Analysis of usability / accessibility of current websites

The mission took place in 4 days. Due to the short time of the mission the experts find that the discussions were constructive.

The tests performed in this activity gave the dissemination staff / web masters some clear guidelines to how the internet dissemination can be improved. Some of the "clues" can be described as low hanging fruits and can easily be implemented if time and resources are available. The results of the tests are available as 12 video sequences. Four sequences for each of the statistical institutes in Bosnia and Herzegovina.

2. Assessment and results

You must understand your users to improve dissemination
As defined in the ToR for activity 3.3.5 the purpose of the mission was to support the BiH statisticians in improving their web sites by creating a better of understanding of user needs and users behavior when looking for statistics. These issues can be investigated by analysis of web site statistics (often described as web metrics) and through testing of user behavior.

In general all dissemination strategies should support systematics work on user requirements and how statistical dissemination products are best improved.

The tests performed in this activity gives the dissemination staff / web masters some clear guidelines to how the internet dissemination can be improved. Some of the "clues" can be described as low hanging fruits and can easily be implemented if time and resources are available. Others are more difficult and will require significant changes to the current web sites.

The current available web statistics in BiH was discussed and Statistics Denmark's use of Google Analytic was used to demonstrate how web metrics can be used to give better understanding of users and their requirements.

The test
During the mission the participants together with the Statistics Denmark representatives developed 4 questions representative of searches / tasks that users seeks to accomplish on the 3 web sites found in the Statistical System in Bosnia and Herzegovina.

These websites are:
http://www.fzs.ba/ (Federation)
http://www.bhas.ba/ (Agency)
http://www.rzs.rs.ba/ (Republika Srpska)

The following tasks were decided by the participants to be representative of user behavior.

http://www.bhas.ba/ (Agency)
Find latest data on net earnings. -Find the same data from the previous year.
Find information about the structure of the statistical system in the Federation of Bosnia Herzegovina.
How to obtain the Statistical Yearbook? – and what other publications can I get and how?
Which publications are going to be released in June 2013?

http://www.fzs.ba/ (Federation)
Find latest data on net earnings. -Find the same data from the previous year.
Find information about the structure of the statistical system in Bosnia Herzegovina.
Find the methodology papers / information on national accounts.
What are the comments on latest press conferences?

http://www.rzs.rs.ba/ (Republika Srpska)
Find latest data on average salary. -Find the same data from the previous year.
Find information about the structure of the statistical system in Republic Srpska.
How to obtain the Statistical Yearbook? – and what other publications can I get and how?
Which publications are going to be released in June 2013?
How many tourists arrived in Republika Srpska in March 2013?

For each of the websites the tasks were completed on the English language part of the web sites by testers provided by www.usertesting.com a site dedicated to testing user friendliness of websites. The results are available as 12 video sequences. The videos were passed on to the participants on a USB-stick so they can be studied by relevant staff. The tests tell how users navigate and what they expect to find when clicking a link. The testers were instructed to only use the sites' navigation structure. They should not use the build in search function.

When testing it is important use detailed instructions to the persons who does the actual testing. If users are not specifically instructed to use the navigation, some users will use the build in search function and others may decide to user Google to locate the information they are asked to locate. That many users "skips" the intended navigation is of cause interesting information but it does not provide any specific new or relevant knowledge about the side being tested. However given available resources it is highly recommendable to test also the build in search functions in dedicated test although search engines can in fact be tested by web masters.

The three web sites are different in layout and in the way they structure and channel user navigation. However, some clear conclusions can be made and seemed relevant to all 3 websites. The http://www.rzs.rs.ba/ website has recently been re launched and is still waiting to be finalized.

Follow web site design conventions – language

On all the 3 websites, the test persons (like any foreign users) need to change to the English language part of the site. This is usually placed in the right upper corner and marked with icons representing either the English or the American flag. One website follows this conventions and users generally found the English language section more easily than on the other two sites.

Follow web site design conventions – navigation to front page

It's a convention on most web sites to navigate to the front page by clicking on the institutions logo which generally always appears in the top. One of the web sites follows this convention and some testers clearly demonstrated the advantage of this as they went easily back to the home page.

Follow web site design conventions – bread crumbs

Often bread crumbs are used to indicate were the user currently is in the navigational structure of the web sites. On all websites users from time to time lost their orientation and could not clearly identify were they were on the site. This lead the users to read unnecessary information or not-relevant information.

Follow web site design conventions – PDF documents / Size of

PDF documents have many advantages (print safe and layout consistent). However, all testers complained that the PDF documents were big and slow to load. So PDF documents can with advantage be broken up in to smaller documents that load easier. It is difficult to evaluate if load times are better in Bosnia-Herzegovina. But as all testers work from home and the tests are recorded on video they are all connected to the internet through high capacity connections. Also some testers indicated that the tested websites failed to load or loaded slowly.

Web metrics - improving search

It was demonstrated how web metrics can be used to obtain information on what types of information that are requested by users. Either through external search engines like Google or through the search engines integrated into the web sites. One of the sites in BiH refers users to google.com instead of using a dedicated search engine. Available web metrics from Denmark and BiH indicates that Google is the only relevant external search engine.

Web masters / dissemination staff should develop a clear concept of which pages they want users to arrive at when searching / looking for information. By example it was shown how specific search terms did not land users on the relevant parts of any of the 3 web sites. Here there is quite some room for improvement. Some searches where users would expect to find the latest data instead pointed to nearly 10 year old methodology documents. Various methods for directing users to specific pages were discussed. As mentioned earlier the most important way of improving web sites is for the web master to have a clear understanding of: "who the users are", "what they are looking for" and "what information they want their users to end up with".

CPI as an example

From web metrics it is generally known that many users are looking for information about the latest consumer price index. This information is available on all 3 web sites. However, when using Google to locate information about CPI for Bosnia and Herzegovina all 3 web sites perform badly, Google instead points users to external websites outside BiH. When searching the 3 websites in BiH with their own search engines users have more luck but are not pointed to the latest information. In one case users are pointed to a methodology document from 2005/2006. As a general guideline it can be assumed that most users looks for figures / data and not for methodologies or quality information (although that is important, too). External search engines like Google can relatively easy be directed to *not* index certain documents through the use of <no index, no follow> tags. Search results on Google are generally best improved by writing clear and concise web content describing the statistics using words / vocabulary common to most users.
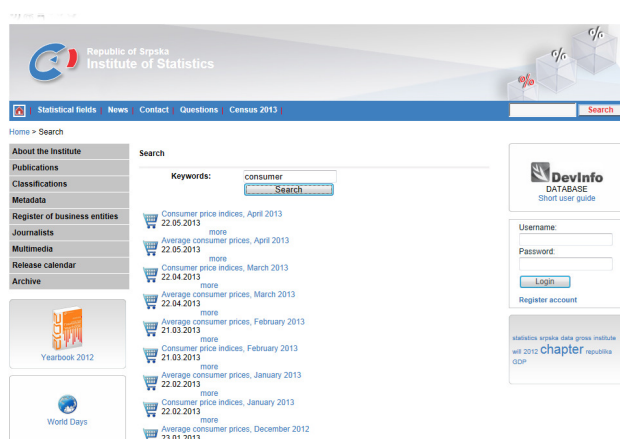

http://www.rzs.rs.ba/user/search/?query=consumer is a nice example of how users react. As the word CPI is not found in the index pages a search for CPI gives no results. "Price index" a spelling that many users outside the statistical world will use also comes up dry as the term used on the web site is "indices". So here the web site can easily be improved by adding terms more in line with the words used by most users.

Accessibility – FLASH

When studying the web metrics from a given side webmasters can get an indication of which browsers that the website users are using. A specially interesting metric, is the number of mobile devices and the number of users using FLASH. Only specific versions of Andriod supports FLASH on most other

devices the functionality will not be available. At www.dst.dk this challenges applies to about15per cent of all users.

In the illustration below (right),it is shown how FLASH is used to create the top navigation on the http://www.bhas.ba/index.php?lang=en (Agency web site). To the left the page is shown as it appears on iPad or other browsers / platforms incompatible with FLASH. Users of non FLASH platforms will miss important navigation features.
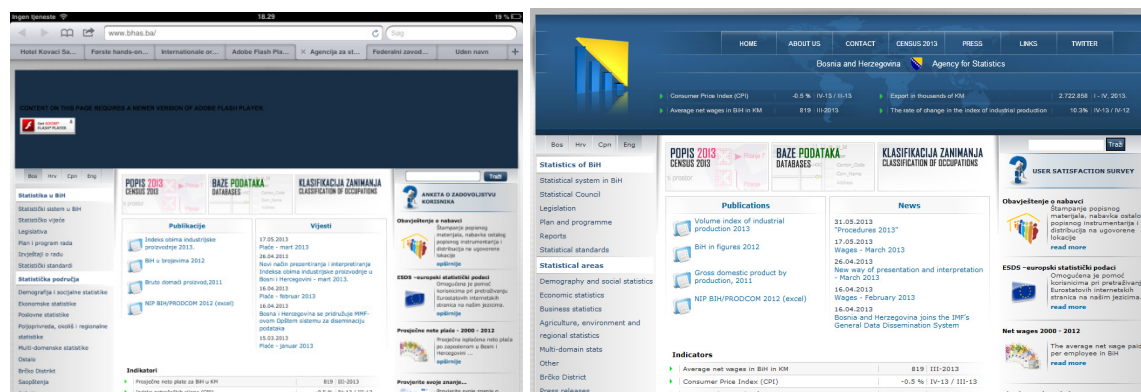
The FLASH problem can be solved in different ways. One strategy as by the Federation (http://www.fzs.ba/) is simply to avoid the use of FLASH. Alternatively the web site can be designed / programmed so that users not having FLASH are presented with an alternative version that contains all the navigational elements. The last solution is clearly the most technical complex and most expensive. Some user friendliness experts also argue that is important to provide all users with the same experience and content to avoid misunderstandings. The web site of http://www.rzs.rs.ba/ also uses FLASH to display an interactive graph, but this is less problematic as the graphs holds no information that the users cannot find through the normal navigation.

Accessibility – Browser differences

Some years ago the Microsoft Internet Explorer totally dominated the browser market. Today it is, however, necessary to recognize that users use many different web browsers and that these interpret / display the code differently. An example of this is provided by
http://www.rzs.rs.ba - > *Publications -> Releases*
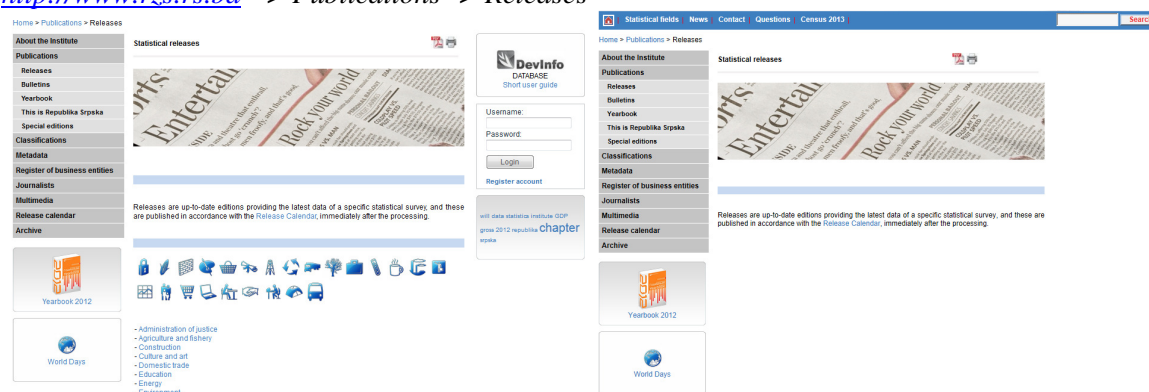
At the left the page http://www.rzs.rs.ba/front/category/316/?left_mi=292&add=292 is displayed in Firefox and at the right the page is displayed in Microsoft Internet Explorer. In Internet Explorer the interesting / important part of the page content is not shown. In this case it is due to a minor error in the coding of the page. But the consequence is that up to 50 per cent (dst.dk user statistics) will not be able to use the web site as it is intended. To avoid this type of problems it is extremely important that the web team / web master from time to time tests the site in all relevant browsers. The list of relevant browsers changes over time and can easily be deduced from the web metrics.

Accessibility – Remember to validate

The use of technically correct HTML coding of the websites generally ensures the best browser compatibility. But perhaps but more important the use of valid coding also ensures that screen reads work correctly (for the reading impaired) and that search robots index the site in an orderly way.
It is recommendable often to use a tool like *validator.w3.org* to ensure that the site is presented to browsers (and users) in a technical correct way. Although it is extremely difficult for dissemination / webmaster to decide which errors that must be corrected and which can be ignored it can be demanded by external suppliers of web services that their products validate without errors.

3. Conclusions and recommendations

User testing

The experience with using the on-line testing facility "usertesting.com" shows that the testers who involve themselves in this job to a great extent belongs to the user category we often refer to as "tourists"- meaning inexperienced in relation to the subject (statistics). The challenge finding the statistics asked for in the tasks is caused partly by the terminology used by the statistical organisations partly by the structure of the sites. The navigation did not seem logical to all testers. Among other things were mentioned a need for more links (or clearly marked links), hierarchy in the grouping of statistics, less overwhelming site (lots of text and links), some short explanation to the statistical themes and databases.

It is recommended that similar testing is carried out in the institutions as "think-aloud-tests" – and then with experienced users.

The think aloud test contains of 3-5 testers and two observers who do not interfere in the solution of the tasks. They observe while the tester speaks out loudly what he thinks and expects from the site.

After the task is ended (solved or not) the tester is interviewed about the exercise. The exercise could work like this:

1) Define a set of tasks (3-5). It should be decided when a task is considered solved correctly. A maximum time of 4-5 minutes per task should be set.
2) The tester is introduced to the task, where to start- to use search or not etc.
3) The observers take notes of the exercise, but do not help or talk to the tester during the test.
4) Interview the tester about difficulties etc.

Like from the on-line testing conclusions on what to change on the site in order to improve the usability should be listed.

Web statistics and find-ability

Web statistics, for instance like Google Analytics, produces lots of useful information about the users and their equipment: which browsers should the site work against, what resolution are used, which search terms are common. This is information the institutions should look into.

The Federation already produce a useful report on these issues. It is recommended that Srpska and Agency will do the same.

We realised through the user-testing that users had difficulties in finding the data they looked for. Also when it comes to search difficulties arose. The experts recommend that each page is given a title

starting with the most important concept, i.e. CPI followed by the country and/or organisation name. This will bring the page higher in Google when users search.

It is moreover recommended to give older, archived documents the "noindex, nofollow " meta information. Thus it will not be indexed by Google and not "disturb" users from getting the more relevant information.

It is recommended that the institutions look at the 20-30 most search terms on their web sites and decides where they would expect the users get the best information for that search term.

4. Next Mission

The next mission in component 3.3 is currently expected to be conducted in July 2013. It will be dedicated to additional training on training on PC-Axis / PX-Web / PX-Edit in order to support the implementation of an output database in Bosnia and Herzegovina. The mission will again be conducted by Ellemose Jensen and Wulff.

Annex 1. Terms of Reference

Dissemination
28th May 2013 to 31th May 2013
Terms of Reference - Activity 3.3.5
EU Twinning Project BA 08-IB-FI-03
Agency for Statistics of BiH
Zelenih beretki 26, Sarajevo

Component 1 Business Statistics
       1.1. Statistical Business Register
       1.2. Structural Business Statistics
       1.3. Construction Statistics
       1.4. Retail Trade Statistics
       1.5. Tourism Statistics
Component 2 Extended Household Budget Survey
Component 3 Institutional Capacity
       3.1. Long term strategy
       3.2. Metadata and classification system development
       3.3. Promotion of dissemination

Benchmarks
A) Staff trained in electronic dissemination by 8th project quarter

B) Comprehensive training of the staff

C) Planning for the building of a comprehensive dissemination database

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3.3.5 Interactions with Users

Background:

The activities in component 3.3 Promotion of Dissemination are designed to achieve the following four goals:

- Preparation of dissemination strategy – including revision policy
- Preparation of development plan concerning data publication on the web site
- Comprehensive training of the staff
- Planning for the building of a comprehensive dissemination database

Web sites have developed into the primary dissemination channel for statistics. In the European Code of Practice for statistics electronic dissemination is recognized as having priority over printed media.

The purpose of activity 3.3.5 Interactions with Users is therefore to generate recommendations on how the websites used for dissemination in Bosnia and Herzegovina can be improved. The recommendations will be based on analysis and testing of the websites based on the recommendations and principles covered in activity 3.3.2 *European best practices in dissemination* (June 2012 by Ellemose Jensen & Wulff).

During the mission test cases displaying typical interactions between users and the websites will be developed. The test cases will be tested using usertesting.com and if possible using real test persons.

Activities to be undertaken in preparation for the mission

In order to understand the users and their interactions with the current web sites it is necessary to have access empirical to data on user behavior. This can be gain either through the use of software like Google Analytics or through analysis of the raw log files generated by the webservers. The participants are therefore requested to make sure that data on user behavior can be made available to the consultants. Preferably log files for at least 30 days should be sent to consultants by email or other means no later than 17 May.

- Make log files available for analysis
- Alternatively install an analytical tool like Google Analytics or an alternative tool like piwik (see www.piwick.org)
- Arrange for users to be available for participation in testing

The expected activities are:

- Orientation / briefing on usability and usability test
- Development of test cases
- Testing of current websites using the "test cases" and usertesting.com
- Testing of current websites using the "test cases" and volunteers for thinking aloud testing
- Analysis of test results
- Preparations of re-test
- Analysis of user behavior data on current websites
- Analysis of usability / accessibility of current websites
- WAI compliance
- Analysis of "find ability" of current websites

Expected output

Through testing of the current websites, a mission report with recommendations for improvements will be prepared. The recommendations will focus on usability and compliance with relevant international guidelines.

Test reports / videos from usertesting.com
Reports from think aloud testing
Recommendations for WAI compliance
Recommendations for changes to web sites based on mark up validation test

Annex 2. Persons met

<u>Experts</u>

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Haris Imamovic, Interpreter

Agenda / Time schedule

All times are tentative and subject to change

Time	Activity	Purpose	Required participants
Tuesday 9:00-10:30	Briefing on usability testing (awu)	Briefing on methods for usability testing	
Tuesday 10.30-10.45	Coffee break		
Tuesday 10.45-12.00		Briefing continued	
Tuesday 12.00-13.15	Lunch Break		
Tuesday 13:15-14:30	Development of test cases	Definition of test cases / tasks that users often performs on web sites	
Tuesday 14.30-14.45	Coffee break		
Tuesday 14.45-16.00	Development of test cases continued	Develop relevant test of issues that can be submitted to usertesting.com. Test to be committed at end of working day	
Wednesday 09:00-10.30	Analysis of test results	What can be learned from the tests committed the day before?	
Wednesday 10.30-10.45	Coffee break		
Wednesday 10.45-12.00	Re-test	Adjustments of test- if results shows a need for immediate retest	
Wednesday 12.00-13.15	Lunch Break		
Wednesday 13:15-14.30	Reading web logs (jej)	What can be learned from the use of the websites?	
Wednesday 14.30-14.45	Coffee break		
Wednesday 14:45-16.0	List of potential changes do to log analysis	Preparation of recommendations for website development based on reading the log files	
Thursday 09:00-10:30	WAI compliance (jej)	WAI compliance?	
Thursday 10.30-10.45	Coffee break		
Thursday 10.45-12.00	List of potential changes do to WAI compliance	Recommendations for changes in order to achieve better WAI compliance	
Thursday 12.00-13.15	Lunch Break		
Thursday 13.15 -14.30	Actual activities		
Thursday 14.30 – 14.45	Coffee break		
Thursday 14.45 – 16.00	Actual activities		
Friday 09.00- 12.00	Final report – Signing final report		