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Session 2: Changes in Communication

Mobile Devices and Infostreams: A Challenge for Websites

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1 A look ahead

A look into the future of online information behaviour suggests that:

1.1
Mobile devices will become the main means for access to information when travelling, at work or even at home. And for 2013, their use is expected to outstrip that of desktop devices.

A few background statistics:
http://data.worldbank.org/topic/infrastructure
http://www.thinkwithgoogle.com/mobileplanet/de/

1.2
Online users are following with decreasing loyalty one or several thematic websites. They focus on information aggregators such as news portals (and not statistics portals - despite their wide range of topics) and information streams with personalised filtering.

The information stream is being followed with ever better tools, tools that encompass the most diverse information sources using different technologies. These include RSS feeds and APIs on websites, databases and social media sites, as well as search engines which themselves use intelligent and user-friendly filters.

These tools can be configured to suit current individual interests.

As background information, here are the comments of three web observers:

Mathew Ingram from 25. June 2012 in Gigaom.com: http://gigaom.com/2012/06/25/why-the-nyt-flipboard-deal-is-a-smart-move/

“People discover content differently now…. Growing numbers of readers and news consumers no longer simply go to the home page of a newspaper and read it or subscribe

through a single provider's app. They get their news through aggregators like Google News and Flipboard or through Twitter links, Facebook and a variety of other methods. A survey by the Pew Center found that almost as many people use aggregators as consume news directly from a news source or get to it via a search engine."

And David Gelernter (lifestreams.com) in Wired of 02.01.13:
http://www.wired.com/opinion/2013/02/the-end-of-the-web-computers-and-search-as-we-know-it/

"… today, the most important function of the internet is to deliver the *latest* information, to tell us what's happening right *now*. That's why so many time-based structures have emerged in the cybersphere: to satisfy the need for the newest data. Whether tweet or timeline, all are time-ordered streams designed to tell you what's new.… By adding together every timestream on the net — including the private lifestreams that are just beginning to emerge — into a single flood of data, we get the **worldstream**: a way to picture the cybersphere as a whole. No one can see the whole worldstream, because much of the information flowing through it is private. But everyone can see part of it.?

And finally Derrick Harris from 7. February 2013 also in Gigaom.com:
http://gigaom.com/2013/02/07/the-future-of-search-is-gravitational-content-will-come-to-you/

"Call it 'anticipatory computing,' or 'information gravitation' or whatever you want, but it appears the future of search isn't search at all. Rather, next-generation applications will surface the information we need when we need it — whether we know we need it or not. ..."

Tools that enable customised access to infostreams are, for example:

Squirro https://squirro.com/
netvibes http://www.netvibes.com/en
Flipboard http://flipboard.com/
Google Currents https://www.google.com/producer/currents etc.

If users find what they are looking for in a stream, they may then look for further information. Users must be able to find this information quickly and in mobile format; access to the detailed information should be simple. Traditional websites but also specific apps can come into their own here; in the interests of the information provider they should be easily identifiable as sources of information.

Traditional websites, specific apps and even print publications have a role to play as niche products with added value for specific user groups with specific interests.

1.3
The search was and still is a key tool for obtaining targeted information.

But the character of the search is changing. Results are less and less likely to be just links or indications to documents found. Increasingly often the information found is displayed directly. Thanks to semantically enabled data sources and relative search engines, answers to

questions asked are shown directly in the results without having to click further to find the source of the information.

Here are some relevant statistical facts:

Analysis of hits on the Swiss Statistics Portal www.statistik.ch, run by the Federal Statistical Office, shows that roughly 66 percent of all hits come from search engines or, to be more precise, from Google.

And the trend towards semantically assisted searches shows that: Some 12 percent or 369,254,196 of 3,005,629,093 parsed URLs are semantically enhanced, either by means of microformats, RDFa or microdata (http://webdatacommons.org/, Situation August 2012); according to Yahoo! research it could be as high as a third.

Mobiles, infostreams and searches – three pillars of online information behaviour that are emerging today and will intensify in future.

Information providers should already be anticipating the consequences today.

2 Current state of statistical dissemination

The traditional, navigable websites of statistical institutions remain fundamental to the dissemination of statistics today. Databases with interactive, customisable queries have also been added as well as visualisation – which has become a focal point in recent years – both in static and interactive form.

Mobile services are becoming increasingly important in the information services of statistics institutions, often in the shape of additional websites or more rarely as responsive design of the original website.

However, in specialist discussions there is little evidence of increasing presence on infostreams. Discussions and actual implementation are much more focused on apps as a supplement to websites and on collaboration with partners who have a strong position in infostreams (such as Google Public Data). Equally difficult to ascertain is the improvement of searches through the semantic indexing of content.

3 What answers and actions for a forward-looking dissemination architecture?

What answers are needed to meet the changing conditions mentioned? How should a user-friendly service develop further in order to maintain, indeed improve, the presence and visibility of the statistical organisation? And where should these answers be given: in terms of content, presentation or the technical architecture?

3.1 Content

Nowadays, statistical websites – in particular those of individual countries as opposed to the aggregated websites of statistical organisations – tend to be visited as a matter of course by only a very small number of users. For this reason they cannot be compared with aggregated news portals or information streams.

But if the offer of statistical content in information streams and search engines is well-prepared (semantically), the function of statistics websites changes and they gain in importance - i.e. indirectly through links to the original website.

In this respect websites must be able to offer targeted, in-depth information and in particular also in mobile format.

This can happen in various ways:

1. A topic is briefly presented on the website with only the latest figures and news. A short summary for quick information retrieval and also for representation in information streams and news portals.
2. Further links to the website lead to more in-depth information such as interactive data queries, interactive visual presentations, information on methodology, special publications as well as the possibilities offered by social media.
3. The website, or specific (preferably browser-based) apps offer special and attractive services for selected target groups: these services are worth visiting again and again, providing unique value added.
   The strategic challenge for statistical organisation here is to find niches and to fill them with attractive, services adapted to the market. Such niches are: statistical reference works; didactic services for schools, journalists etc. for the use and interpretation of statistics; methodological information; specific analyses on current themes; and attractive presentations of the statistical organisation and its statistical mission.
4. In this context the role of traditional publications, often still in printed form, is changed. Such publications can provide coherent and consistent “storytelling” on individual topics and therefore fill important niches. From their static PDF format they become digital, interactive and dynamic electronic publications (ePubs, APPs), offering content and can still be (partially) printed (out) thus retaining their traditional “storytelling” or “book” character.

3.2 Presentation

“Mobile first” is becoming a strategic requirement for information providers. Online services must be easily navigable and legible on mobile devices with small screens. The most resource-efficient method is a responsive design that prepares the content depending on screen size thereby responding to the features of the connecting device.

The purely technical challenge must be backed up as far as content is concerned by a navigation architecture and page structure that works well on small screens too. The challenge of the slim website!

3.3 Technical architecture

The strategic requirement for information providers is that their information should be available for various channels and above all that it is suitable to information streams and up to date.

This requires a clear separation between content and presentation. Services get hold of information and present it in user-friendly form for various channels. This is made possible by using a consistent three-tier architecture model: Databases-Services-Presentation

As a concrete illustration, here is a look at the three-tier architecture as it is planned, amongst others, for the modernised online presence of the Swiss Statistics portal.

Existing databases are developed on the first tier and are given as much structural content as possible; on the second tier is a web service platform that presents content for different target groups and devices in various forms on the third tier. For example, graphs and text can be distributed for presentation via a service to a CMS, or a service can access a PX cube in the cubes database and extract a table and display it in HTML format, or a SPARQL query takes data from a triplestore for a table that is to be shown in an app or....

In this way the website is becoming a satellite (one of several); it is banished from its position as sun in the solar system and databases are taking its place.

This discussion also becomes one of three parts:

1. What do the databases look like? What is the best format for them? Are we ready for the semantic database format, the RDF-based data store?
2. What is the role of services that supply content from databases to the various devices? And using which technology?
3. What happens at presentation level? How much (as much as possible) can be presented on the basis of databases and services? How much metadata can be automatically supplied with data in order to improve the search and stream presence? Should RDFa, microdata or microformats be used? This discussion on standardised vocabulary has not yet really begun in the statistics community.

4 A conclusion

A mere redesign of traditional websites is no longer enough to meet the challenges of the increasing use of mobile devices, of infostreams and the search as a means of accessing the huge amount of information available online. More extensive adjustments are necessary to ensure content management that is non-redundant and independent of presentation, to make this available for many different media and devices and also to ensure, through semantic indexing that this content is used in search requests and infostreams.

Content is king and web services are the servants. Statistical information is becoming a service-based service.