



## **“Think-Tank 1 Meeting Notes”**

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## Abstract

Notes taken during and following the Chorus+ "Exploring the Future of Mobile Search" workshop and Think Tank roundtable discussion held during the CTTE conference in Ghent on June 9<sup>th</sup> 2010.

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## 1 Roundtable panel, moderators and other participants

Name	First name	Initials <sup>1</sup>	Organization	Roundtable participant
Anania	Loretta		EC	Left at end of presentations.
Annafari	Mohammad Tsani		Chalmers University of Technology	
Barani	Bernard		European Commission	Left at end of presentations.
Breuss-Schneeweis	Philipp		Mobilizy GmbH	Workshop Speaker & TT Invitee
Casey	Thomas		Aalto University	
Cheron	Philippe	<b>PC</b>	YACAST	TT Invitee
Cotet	Radu		FUNDP	
Daoust	Francois	<b>FD</b>	W3C/ERCIM	Workshop Speaker & TT Invitee
De Coninck	Franky		Telenet Nv	
Deleu	Johannes		Ghent University/IBBT	
Demeester	Thomas		Ghent University/IBBT	
Donders	Jef		Ghent University/IBBT	
Frank	Jakob		Vienna University of Technology	Chorus+ partner
Freiling	Guido		T-Mobile Netherlands BV	
Geurts	Joost		INRIA	Chorus+ partner
Gomez-Barroso	Jose Luis	<b>JLBG</b>	UNED - Universidad Nacional de Educacion a Distancia	Workshop Speaker & TT Invitee
Gouraud	Henri	<b>HG</b>	Chorus	Chorus+ partner
Hammainen	Heikki		Aalto University	
Ives	Stephen	<b>SI</b>	Taptu Ltd	Workshop Speaker & TT Invitee
Kaario	Juha	<b>JK</b>	Varaani Works	Workshop Speaker & TT Invitee
Church	Karen	<b>KC</b>	Telefonica Research	Workshop Speaker & TT Invitee
Lidy	Thomas	<b>LT</b>	Vienna University of Technology	Chorus+ partner
Bacigalupo	Margherita	<b>MB</b>	Institute for Prospective Technological Studies (IPTS), Joint Research Centre (JRC), European Commission	Chorus+ partner
Jones	Matt	<b>MJ</b>	FIT LAB	Workshop Speaker & TT Invitee
Nikolopoulos	Spiros		Centre for Research & Technology Hellas	Chorus+ partner

<sup>1</sup> For roundtable participants only.

Nikolov	Stavri	<b>SN</b>	Institute for Prospective Technological Studies (IPTS), Joint Research Centre (JRC), European Commission	Chorus+ partner
Plu	Michel	<b>MP</b>	France Telecom	Workshop Speaker & TT Invitee
Point	Jean-Charles	<b>JCP</b>	JCP-Consult	Chorus+ partner
Salz	Peggy	<b>PAS</b>	MSearchGroove	Workshop Speaker & TT Invitee
Sasaki	Tsutomu		InfoCom	
Scokaert	Pierre	<b>PS</b>	AB Phone	Workshop Speaker & TT Invitee
Srinuan	Pratompong		Chalmers University of Technology	
Stragier	Jeroen		IBBT-MICT-Ugent	
Treu	Georg	<b>GT</b>	Aloqa	Workshop Speaker & TT Invitee
Van Audenhove	Leo		IBBT-SMIT-VUB	
Van Den Wouwer	Dirk		Televic RAIL	
Van der Linden	Pieter	<b>PvdL</b>	Technicolor	Chorus+ partner
Vanhouwaert	Erik		UGent	
Vidmar	Luka		MOBITEL D.D.	
Wauters	Tim		Ghent University/IBBT	
Welling	Ilari			
Wilmet	Michèle		JCP-Consult	Chorus+ partner

## 2 Roundtable discussion

For introducing the roundtable, **MB** presented the preliminary results of the study conducted by IPTS in April/May 2010. The online survey was completed by 54 respondents (out of 150 people invited to take part). Profile of the respondents is mainly academic and industry mobile search experts.

Some initial findings from the survey:

- The majority of the respondents consider that Mobile Search is taking off
- The major challenge to Mobile Search is considered to be of economic nature
- Nevertheless to 50% of the respondents also consider that technology remains a major challenge for Mobile Search
- The majority of the respondents agree that Mobile search differs from PC based.
- Nearly 50% of the respondents consider that location based services is only one aspect of Mobile Search.
- 78% of the respondents consider that the main technology bricks are already there.
- Geo-location, novel interfaces and 4G and beyond mobile communication networks are seen as the most important technologies in the current landscape.

### 2.1 What is mobile search, and why is it different from PC search?

#### 2.1.1 The mobile phone a very personal device

**KC** restated that the mobile phone is probably the most personal and confidential device. She added that she could perfectly imagine lending her laptop to somebody, but would never do so with her mobile phone. **HG** added that “the device is always on, always with me”. Most attendants seemed to agree on these points.

Nevertheless **MJ** pointed out that in developing countries mobile phones are sometimes shared between many people. The situation of mobile phones used as “telephone booth” in developing countries has not been further investigated in the discussion.

#### 2.1.2 Mobility versus nomadicity

The discussion then concentrated on mobility. Several participants did state that nomadicity rather than mobility was the main goal of current mobile users. To our understanding this distinction points to the fact that use of mobile devices when users are actually moving is not that frequent. Nomadicity appears as a state of mind rather than a physical state of displacement. “Nomadic” people do use their mobile devices across various contexts of use.

**JK** stated that mobility is not only about a device but also about the situation of its users. “People use mobile applications while waiting in airports, or participating to workshops in Ghent....”.

Several participants agreed on these principles, though somebody then added that the actual usage of services and devices was rather unpredictable as it appears that lots of users use their mobile phone for search and other applications from their own home<sup>2</sup>.

The fact that the user is travelling or is away from home does not seem the sole criteria for characterizing mobile search. According to **PAS**, Mobile devices are a way for people to access the outside world and to connect to people. **JK** added that some users just use their phones because they do not have a PC.

According to this discussion the Mobile Device could be summarized as a mediaplatform which enables filtering and adapting content in relation to the activity at hand.

### 2.1.3 Geolocalization and multimodality are important differentiators

Several panelists mentioned geolocalization and multimodality as important differentiating features of Mobile Search.

### 2.1.4 The quest for an open mobile Internet

In addition to the consideration discussed above, several participants then confessed that in relation to outrageous roaming charges, they did not use mobile internet services when abroad.

This statement triggered a discussion on the need of an open mobile internet. In addition to the roaming charge problems, **PC** reported on bandwidth control on highly popular video sites, voice over IP filtering, and so forth. **MP** questioned whether mobile was developing into an open service or into a succession of walled gardens. **JLBG** advocated that in case Broadband Net neutrality policies were applied, they should be extended to Mobile. Nobody objected to this principle.

Furthermore, several panelists, including **MP**, suggested the EC should consider providing incentives for open mobile internet deployments.

### 2.1.5 What is specific about mobile search services

**HG**, who did throw up this subject, stated that from a technical standpoint the differences between mobile search and PC search could be summarized in two main points:

- **Geo localization**
  - o Search of geo tagged information
  - o Localization of devices
- **Interaction**
  - o Small screens and reduced keyboards

All the participants agreed with the importance of geolocalization, nevertheless in addition to the above technical criteria, several panelists did stress on important usage factors:

- In addition to the need for local responses, **SI** stressed the importance of information freshness. On tiny screens, information displayed should be localized and fresh.

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<sup>2</sup> Actually quite some TV shows use SMS feedback for games and polls, and several media companies are thought to be working on internet replacements for those services.

- According to **MJ** queries in Mobile and PC search are similar, but content responded should be different.
- **MP** added that users on the move want concrete answers to concrete questions. Most likely they are not in a mood for reading/viewing or listening to large documents.
- **PAS** came back on the “websnacking” principle introduced by **PS** and **ABphone** during the workshop presentations (see white paper on web). She believes that recommendation will be a very important differentiating factor in mobile search services. She predicts a move from an action-oriented search activity towards a recreational pastime.
- **PC** did also add that needs could differ from one device to another. He believes that search services should be aware of the particularities of the device and the situation of the users (for instance searching from a car GPS while driving versus searching from the mobile phone sitting in an airport lounge).

**SI** and **JK** also explained that the mobile should be considered as a new media platform using its own content ecosystem. Consequently they explain that the business ecosystem for mobile search differs from the PC one.

### 2.1.6 Privacy

The discussion on privacy mainly was triggered in relation to the use of social networks. Nevertheless we thought that this discussion did deserve a section on its own. More on social networks below.

**PS** explained that quite some important contextual information can be gathered from use of mobile phones. This statement and some other triggered a lively discussion on privacy. **SN** asked the group if they considered privacy should be regulated.

According to studies cited by **PAS**, Privacy is not seen as an issue by young people (12-25y range). **PvdL** objected that he believes that teens are concerned by privacy, defined as a means to protect against parental intrusion.

**MP** stated that the privacy problem was currently underestimated. According to him, people have not yet realized the potential trouble resulting from current and future services. He added that this situation has actually brought concrete opportunities for mobile, such as local data and local filtering capabilities. He was rather skeptical about a regulatory approach: “There is not much you can do against people disclosing their information”.

**PvdL** objected that he hoped that the mobile services operators would refrain from making the situation even worse than it is already today (for instance by not using, storing or disclosing localization data).

It appeared that the assistance did not really raise a consensus on the importance of the threat and the possible mitigation actions. Therefore, after having noted the importance of the point, the moderators invited the participants to move on towards other subjects.

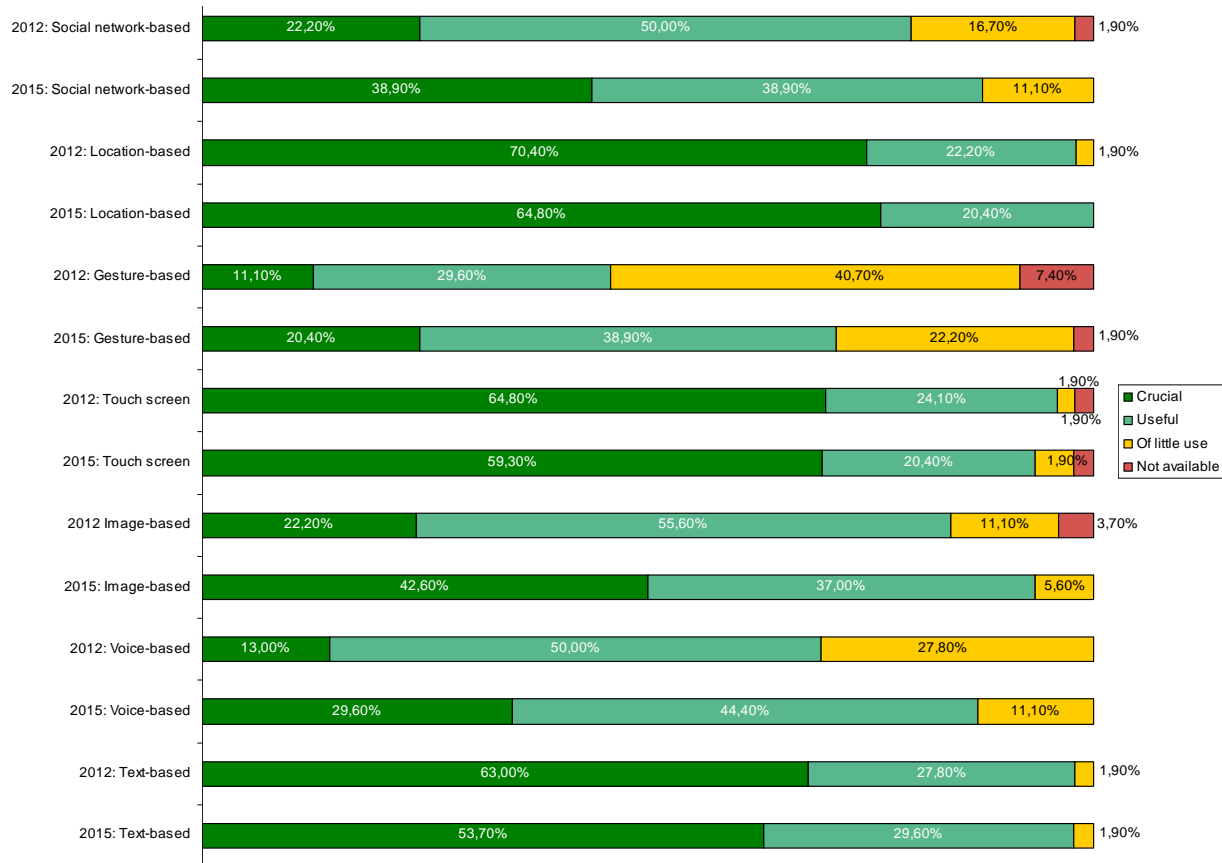
## 2.2 What are the key technologies for Mobile Search (if Any)?

**MB** introduced the subject. She highlighted the results of the survey conducted by IPTS. She restated that the grant majority of respondents considered technology not to be the main



bottleneck in deploying services. Most respondents considered that the most important technology bricks were already there. Several panelists, including **MJ** objected to that. Some bricks are still missing, and several bricks need significant improvement.

**MB** then showed a slide on “interface usefulness” featuring the main functions of current and future services (slide is shown below).



This slide triggered some initial reactions such as:

- **JK** mentioned touch screens as a "must have" enabler.
- **GT** considered that Social Search was underrated.
- **MJ** stated that the question of indoor positioning was not resolved and therefore geolocalization could not be considered as a resolved issue.
- **MJ** added that gestures interfaces appeared strategic and predicted that massive innovation could be expected in this sector.
- **PC** added that image based search services are expected to increase in importance.

Reality Mining was also mentioned in relation to proximity interfaces (<http://reality.media.mit.edu/>) and the possibility to collect machine-sensed environmental data pertaining to human social behavior.

## 2.2.1 Use of social networks

The participants agreed that social networking is one of the most important opportunities for innovation in search services and the main service differentiator. Nevertheless several panelists questioned the link between social networking and mobile. Participants agreed that

social search does apply both<sup>3</sup> to desktop and to mobile based on context. According to **JK** though, localization is definitely an attribute of mobile devices “You have to be mobile to be searched”.

Several panelists then did also stress some of the issues of social networks. One important is the economic model. **MP** reported on subscribers quitting Facebook (e.g. <http://www.quitfacebookday.com/>) because of data exploitation plans implemented by the company.

The discussion on social networks then moved towards the privacy protection area, which was highlighted above.

*It should be noted that the next ThinkTank organized by Chorus+ at ACM multimedia (Florence October 27<sup>th</sup>) concerns specifically the social networks.*

### 2.2.2 Voice interfaces

Quite some discussion took place on the subject of voice interfaces. The panelists were rather skeptical about the usefulness of voice interfaces and dialogues:

- **SI:** Accuracy remains a problem
- **PAS:** People tend to be reluctant to talk to a machine
- **MJ:** Voice based interface are difficult because of the lack of dialogue
- **PC:** Voice in cars does not work because of the lack of dialogue
- **PC:** Main issue is to force people to speak the same way in various situations
- **PS:** voice is not happening in the PC. Nevertheless voice based interface on mobile may prove particularly crucial for developing countries, where entering a text-based query is not an option due to the illiteracy of large parts of the population

### 2.2.3 Image interfaces

Surprisingly the debate did address only marginally this issue. **MP** stated that sometimes if you don't know how to describe with words it might be easier to search with a picture (a picture may be worth a thousand words). **MP** did also mention image input in relation to translation (see below). He suggested using OCR on images taken with mobile phones for translating foreign billboard and traffic signs.

**PC** did also mention the capacity to use pictures taken with the mobile phone to link with news, websites and so forth.

As of this TT panel no definitive conclusions were reached on the subject.

*The moderators suggest reassessing this over the next few years, for instance by putting it as side question for a future Chorus+ workshop or Thinktank session. Possibly the perceived importance of these technologies may raise over the next months and years once some initial concrete implementations has been achieved.*

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<sup>3</sup> The moderators believe that social search and recommendation may also apply to a range of other services, including future TV, Radio, ...

## 2.2.4 Text interfaces

MP stressed the importance of adapting search to mobile keyboards. He explained that people do not use the mobile keyboard as the desktop one. He also mentioned the need to adapt the search indexing mechanisms to SMS type of text.

## 2.2.5 Augmented reality

Globally augmented reality is seen by several panelists as an enabler for advanced new interfaces. PvdL mentioned the demonstrator by Tokyu he saw in Japan combining augmented reality with twitter on recommendation of physical outlets.

The AR subject did not trigger much additional discussion. The consensus seems to be the subject is important. The lack of discussion may point to the fact that actual large scale implementations may be rather remote (middle/end of the decade rather than beginning ?)

*Concerning this topic, depending on the state of maturation of the technology, it may make sense to readdress the Augmented Reality in a future TT to reassess its potential application in the Mobile Search area.*

## 2.2.6 Translation

The moderators probed the audience on the subject of Translation technologies for mobile search applications. None of the panelists supported translation as an important technology for Mobile. Translation was seen as a marginal non mainstream need. Several panelists challenged the fact that automatic translation was important anyway.

*The moderators suggest reassessing this over the next few years, for instance by putting it as side question for a future Chorus+ workshop or Thinktank session. Possibly if the technology matures the perceived importance may raise also.*