

The future media landscape in the Future Internet

(1) What use case and scenario in your area would you consider the most appropriate and representative one for large-scale experimentation with the Future Internet platform to be built starting from 2013?

Way back in time, opinions were primarily formed in discussion groups. Happenings were revealed through the 'word of mouth'. People came to know what was happening in their immediate or greater neighbourhood by discussing with their friends and colleagues. But things have changed. Societies grew larger and larger, associations to groups (of private or professional nature, or based on particular interests) became looser and, at the same time, increased in number. Physical proximity to peers and friends lost in importance, while, at the same time, digital connectivity partly replaced this. All this also had profound implications for journalism and journalists. While, in the old days, journalists were the ones who would unearth and report about what was 'happening' and report it in the media, this power partly shifted to individuals who were not trained journalists. This also resulted in a loss of power for media groups who no longer were the only forces that controlled public opinion and were the only ones to decide what was worth being reported and what was not.

Can or should there be a way back to how things were "in the old days"?

New media is giving the power of speech and opinion-forming back to citizens and individuals. More and more people are reporting, blogging and tweeting. This poses the following question: Can we gain access to what is widely circulated as social postings, without relying only on what media groups think is worth providing?

One problem is that the scales are different today. An individual alone cannot digest what the community is offering. Hundreds of new blogs are appearing every day. Hundreds of thousands of pictures and videos are uploaded every minute. Millions of tweets are posted while you are reading these lines. Even though you are unlikely to find most of what is being published on a particular topic, the information on what is happening **is out there**; and a great variety of views are expressed, undiluted, from first hand sources.

Many sides have their say in this 'big bang' of opinion sharing. Views are coming from everywhere, in a multitude of facets: truth and lies, pros and cons, genuine and fake. **The truth is out there, but can we discover it?**

The challenge is to deal with the massive amounts of information in text, images, audio and video, and try to discover the truth. We have to analyse tweets and buzzes to find out what people are talking about; cluster pictures and videos that are being posted to figure out what supporting evidence is provided to what people are claiming that is happening. And we have to present all the results in a way that helps us to come closer to the truth, also using personal judgement.

The puzzle is there, but the evolution towards the Future Internet intensifies both the problem and the opportunities for solving it. In an evolving **Internet of Services, Things, Mobility and Trust** we need to:

- ❖ discover what is really happening in the world by examining what ordinary people say is happening. We have to be able to connect reported events with visual proof and opinions around them, taking into consideration the credibility of sources without violating basic privacy rules.
- ❖ discover what ordinary people think of so-called ordinary things: we need to be able to analyse public opinion on e.g. products, people and brands and connect possibly related happenings and events, being able to 'filter out the noise' originating from propaganda or viral marketing practices.

(2) What innovative Internet functionality and technologies would you consider important for your suggested use case and scenario?

As described in the above scenario the most critical technologies necessary for the realisation of the described aims relate mostly to the **advanced real time processing capabilities handling huge volume of data**. Particularly we may refer to:

- semantic multimedia analysis, primarily based on textual information and complementarily based on image and video analysis
- clustering of multimedia content based on identified themes and events
- analysis of sentiments expressed in documented opinions
- automatic cross-checking of information between textual information and visual testimonies
- source profiling based on reputation and automatic cross-checking among many testimonies

(3) Which of the identified functionalities would you expect the Future Internet core technology platform to deliver to support your and other usage area scenarios?

All the functionalities mentioned in the above question are important to support the described use case and other similar scenarios which depend on the discovery of truth in testimonies delivered through multimedia content. The adoption of standards is also necessary, such as W3C's recommendation "Protocol for Web Description Resources (POWDER)" that defines a mechanism to describe and discover Web resources.

(4) What kind of experimentation environment would you consider necessary for broad large scale testing of the platform to be developed in your use area? What would be needed to experiment new services and applications cutting across use areas (services and application mash-up) and building a new services and application ecosystem around the prototype implementations of the platform?

The availability and access to huge datasets of testimonials produced in real time is crucial for the experimentation on methods and technologies necessary for tackling the above mentioned scenario. On-line platforms like YouTube and tweeter already exist to provide real-time access to such data but long term availability of such information will be necessary to test upon and create ground truth datasets against which a variety of methods will be tested. For most of these problems there already exists a large variety of services and algorithms which could be tuned and tested against each other and towards similar applications, creating an ecosystem of credibility analysis methods.

(5) How do you see the potential role of your organisation in the FI-PPP, in the context of Usage areas taking a prominent role in the Initiative, to ensure an appropriate application driven approach?

ATC, established in 1987, is an International IT solutions & services provider. The company specializes in Solutions and Services for the Media Industry i.e. International News Agencies, Press Media Groups and focused Publishers. In the course of its evolution, ATC has continuously focused in adopting novel technologies and at present provides advanced Web 2.0 and Mobile CMS solutions. Covering the demands for complete publishing systems, ATC developed its own range of products now available in the English, French, Arabic, Spanish, Polish, Russian, Portuguese and Greek language. This suite of applications (NewsAsset) incorporates 15 years of expertise from different business models and benefits from the company's participation in international technology development projects under the EU auspices. ATC currently collaborates with clients in the US, the UK, Russia, Poland, Portugal, Ukraine, Romania, Bulgaria, Cyprus, Serbia and the Arab Peninsula. Through this experience and commercial involvement in the market of media, ATC can play a prominent role in the 'Content' area of the Future Internet initiative, involving the media industry both from the technology and user-needs viewpoints.

NCSR "DEMOKRITOS" is the largest self-governing research organization, under the supervision of the General Secretariat for Research and Technology of the Greek Government. NCSR'D' participates in this position paper with the Software and Knowledge Engineering Laboratory (SKEL, www.iit.demokritos.gr/skel) and the Computational Intelligence Laboratory (CIL, www.iit.demokritos.gr/cil) of its Institute of Informatics and Telecommunications. These two groups have long experience in State of the Art research in the area of semantic multimedia analysis with established work in 'understanding' and classifying the information found both in textual and visual content.

Deutsche Welle is Germany's international public service broadcaster, founded in 1953. In over 55 years DW has gained its reputation as a trusted and reliable source of information by providing high-quality programmes,

multimedia content and services in 30 languages to a worldwide audience. The content focus is on news, information and background analysis. In addition to supplying traditional distribution channels (radio, television and online) DW is now offering a range of multiplatform content and services: from on-demand audio and video to iPhone applications, Twitter feeds, made-for-mobile services, social media applications and audio-visual podcasts, to name but a few. As part of its multiplatform strategy DW is keen to be involved in the Future Internet initiative as this is in line with the organisation's goals and its overall strategy: to continuously improve user experiences; provide relevant content that matters to DW's target audiences; make it easier for existing and new users to find the DW content that is relevant to them; reach users on the platforms of their choice via the most suited distribution method; and do all this in a qualitative way that is as cost-efficient as possible. Achieving these goals requires numerous changes to established practices, such as, among others, the adaptation of DW's content production processes and procedures, the handling of media assets (metadata issues), the interaction with its users and new forms of digital aggregation and distribution.

CONTACT

Nikos Sarris, ATC SA, n.sarris@atc.gr

Vangelis Karkaletsis, National Centre of Scientific Research "DEMOKRITOS", vangelis@iit.demokritos.gr

Jochen Spangenberg, Innovation Projects, Deutsche Welle, jochen.spangenberg@dw-world.de