next MEDIA | A TIVIT PROGRAMME

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Executive Summary

In this first Next Media programme deliverable we identify innovation and business drivers with impact on the media sector in the year 2020 and beyond. Furthermore, we outline a range of scenarios describing the media sector in 2020. Both drivers and scenarios form the basis for the next step, vision development, which will be documented in a separate deliverable.

In a world wide crowd sourcing approach 38 authors have contributed individual articles containing possible scenarios, from both industrial and academic viewpoints. In order to achieve holistic views of the future the authors were encouraged to ignore borders between media sectors and between media research areas.

The resulting 42 articles have been clustered into nine dimensions by nine expert editors with the goal to create concrete outlooks beyond the current trends in the media sector.

The first dimension, Social Values, addresses the social and societal effects of the combination of knowledge society on the one hand and the new socio-technological systems. A new phenomenon is being outlined, taking cocktail identities, “gamification” and the increasing use of humanoids into account.

In the second dimension, Social Media, the empathy is on developments towards real-time use. Two further dimensions deal with users and audiences in 2020: at first, their behaviour is analysed, then the interfaces which they use, and through which the media industry interacts with them. Interfaces and navigation will “learn” much from gaming, whereas (3D) TV will still have a co-existence next to a ubiquity of other, mainly digital media interfaces.

The first two dimensions together with User and Audience Behaviour and Interfaces are re-evaluated from a Media Content point of view in dimension five. Added to that in dimension six, Professional Journalism is investigated, with the conclusion that today’s professional quality journalists may become a rare species by 2020.

In Gaming, dimension seven, we strongly emphasize two converging trends: “gamification” of the real world as well as games going “real” which will lead to a Google Earth follow-up usable for immersive reality experiences on an intertwined social-real-game level.

Dimension eight, Media Companies and Their Features, clearly forecasts smaller professional units, focussed on editorial publishing and knowledge service provision, complemented by freelancers and citizen journalists. New roles for professionals will emerge, but views diverge on their nature.

The last dimension, Technology, gathers technologies and tools not yet addressed in the first dimensions. Here, we highlight ubiquitous broadband wireless “real world” web access, e-devices turning from readers to informers and a whole gamut of automated tools for planning and editing. Last not least the printing press “goes magazine”.

The nine dimensions are complemented and re-analysed in the Business Concepts chapter, emphasising the system approach, and complemented with innovation drivers for research until 2020. The key message is that advertisers in 2020 will insist on better value (i.e. measurable ad performance), which threatens traditional media concepts serving too large, unspecified audience segments.

In the final chapter, we suggest worst and best case scenarios and the example scenario of the Finnish industry, “Human Media”. These scenarios have been used for SWOT analyses and for a media sector vision 2020.

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1 Introduction

Worldwide, the media sector is looking for new business opportunities as its current business models are more and more infringed by new market participants, such as Facebook, Twitter or eBay. In the Finnish media sector a new large scale media research programme named Next Media has been launched to establish a concerted research effort from 2010 to 2013. While research for the first year has been defined, a coherent research vision for the next three years is missing, in spite of earlier efforts (Finnmedia 2009 and Various Authors 2009).

The Next Media task *Visio2020* aims to define a vision from which *long term* objectives for research can be derived. The vision is both aimed to provide industrial guidance as well as to adjust the Media related research, starting 2011 and later, including new Next Media projects.

1.1 Brief Summary of the State of the Art

The media sector in Finland carried out a massive strategic work lead by Finnmedia (Viestinnän Keskusliitto) in 2009. The results of the work are reported in the report "Viestintäalasta voittaja" (in English: "Making the media sector a winner", Finnmedia 2009). It condenses the future challenges of the media sector into three action points: 1. media companies should deepen understanding of customers; 2. the media sector should be the pace setter of product and service development; and 3. a dynamic and agile business partner. In addition, the report lists essential change factors relating to user behaviour, radical change in advertising and in business environment and to the urgent need to networking and innovation.

The Helsingin Sanomat Foundation and the Päivälehti Museum in 2009 asked expert visions for newspapers until 2050. Questions and visions along with other similar material has been utilised in this task as background material.

On EU level, *NEM* (2009), the European Technology Platform on Networked and Electronic Media is an ongoing EU initiative. Its main research topics resemble those of the Next Media programme: content creation, distribution, content presentation, metadata, underlying technologies, media applications and business models. However, NEM is restricted to digital media while Next Media covers digital and conventional media, as well as further genres, and emphasises also journalistic, creative and organisational issues.

As we recognize the information and knowledge society with its broad use of social media in all forms as main innovation driver of the media sector it is also worth looking into the development of the Internet at large:

On EU level there are several new reports available addressing the future internet (EIFFEL Think Tank 2009), ICT (National ICT Research Directors Working Group on Future Internet 2009 and European Commission 2009) and the information society (EU Information Society Technologies Advisory Group - ISTAG 2009). Currently, the closest media related research objective is "Networked Media and 3D Internet" (Objective 1.5 of the FP7 ICT Work Programme 2009-2010).

See chapter Literature for more articles, books and further studies on relevant issues.

1.2 Scope

This document is targeted at executives, managers, media professionals and researchers who are interested in a long term view of the Finnish media sector.

Its content concerns (Finnish) media industry and media research in the broadest sense.

1.3 Objectives

As a first step, the future innovation drivers of the media sector need to be identified. Concurrently, scenarios are to be outlined, describing the media situation in the year 2020.

For both drivers and scenarios, the detailed objectives are

- as many as possible viewpoints need to be gathered and taken into account, also and especially addressing developments on the fringes of the media sector. Both academia and industry shall contribute
- holistic views of the future shall not be limited by borders within media sectors and by borders of media research areas
- drivers and scenarios need to be future oriented. They must not be short or mid term extrapolations (trends) of what we know for sure.

The next objective is to identify innovation drivers that can be used for technological breakthroughs combined with radically new meanings.

Last not least the content of this deliverable needs to prepare the Next Media community to develop – in a later task step – a media research vision 2020 and a roadmaps necessary to achieve the vision.

1.4 Approach

The underlying methodology for identifying the most significant drivers is based on qualitative, interpretive research (Remenyi, Williams, Money & Swartz 1998; Matthyssens & Vandenbempt 2003).

First, in a researchers' workshop we identified nine 'dimensions', into which we could classify possible innovation drivers and scenarios. They are presented in chapter 2.

The next step was to create future scenarios as such. In the second researchers' workshop we created trigger questions (see appendix 1) to stimulate our contributors. As we wanted to explore as many viewpoints as possible, a crowd sourcing approach was chosen. About 300 possible contributors from both academia and industry worldwide were invited via e-mail to submit their input.

Within six weeks 38 volunteers, 31 from within the media sector and seven from adjacent areas, such as ICT, futures research, design and humanities, developed 42 possible views. These typically consist of one or two A4 pages.

We, a team of nine editors, used content analysis to integrate these contributions, defining converging and diverging views per dimension. A saturation point per dimension was reached after a certain amount of inputs. Saturation means that new contributions do not deviate from the envelope of the existing contributions. The focus on the analysis was on the long term future (2020). Scenarios were not meant to be short or mid term extrapolations (trends) of what we already know for certain. If possible, a narrative has been constructed per dimension.

The version 1.0 of this deliverable, containing the nine dimensions and a further one, Markets and Media Landscape was published internally as an input for the first vision workshop with the Finnish media industry.

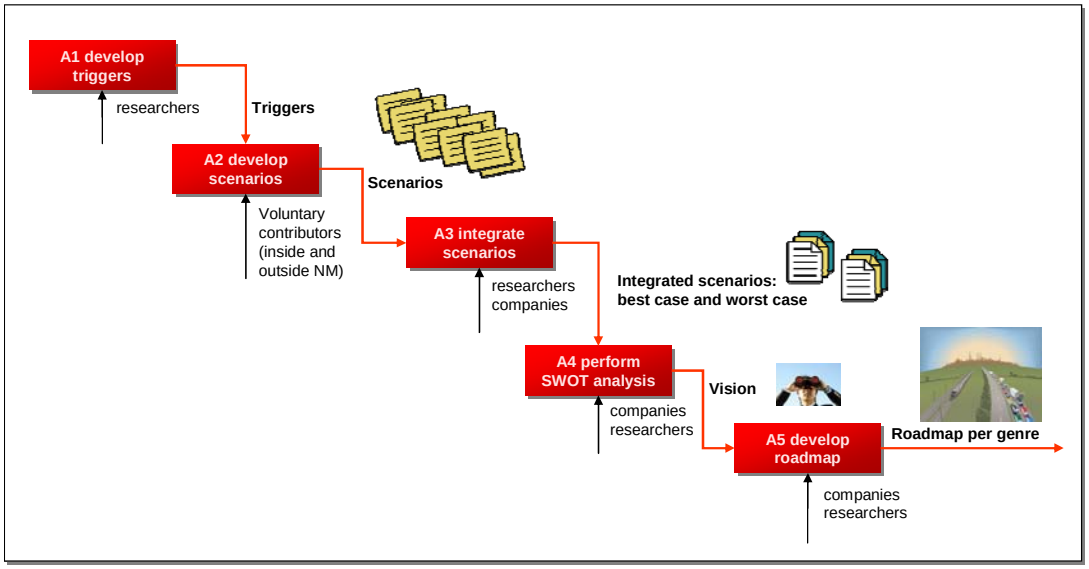

Figure 1. Research process

Version 2 of this deliverable has been updated with the following:

The nine dimensions are complemented and re-analysed in the Business Concepts chapter 3, integrating a research paper by Giesecke and Immonen (2010).

Key innovation drivers per dimension have been identified as following:

First by prioritising through a questionnaire distributed to Finnish media industry members. Complementary, in a separate workshop with academia, we have identified the most important research drivers until 2020, clustered by media genre. Finally, in the concluding vision workshop (Finnish media and academia) the drivers have been prioritised by e-voting again. The chapter 4 documents this final result.

In the final chapter 5, we document the outcome of the first vision workshop with the Finnish media industry. Worst and best case scenarios and one example of a desirable scenario of the industry, “Human Media”, were created in this workshop. These scenarios are to be used for SWOT analyses and for a Finnish media sector vision 2020.

2 Media Scenario Dimensions 2020

The following nine dimensions are the basis for the next chapters 3, 4 and 5. In all the three chapters the dimensions are used to create and illustrate integrated views: on business concepts, innovation drivers and integrated scenarios.

For each dimension the editors have gathered key drivers and their explanations and a list of individual key scenario authors, whose articles we recommend to read along with the dimension.

2.1 Social Values

By Raphael Giesecke

Key innovation drivers	Key scenarios by
1. Cognisance – mastering the information overflow 2. Togetherness – belonging to 'trusted', influential networks 3. Acknowledged virtual human relations – managing ICT-mediated identities in social interaction	Giesecke Jones Li Nordenstreng Pienaar Trappel Valaskivi

This section provides the general context for the eight more specific dimensions. We recommend to read as well the complementary article on the future domination of generation Y and Milleniums (*Goodman*) in section 2.3 User and Audience Behaviour.

2.1.1 Knowledge Strongest Key to Power and Success

By 2020 an expected two Billion humans and a similar amount of sensors of things (in the IoT – Internet of Things) will produce digital data (some as information) at least once a day. Already today there are plenty of initiatives to aggregate information to knowledge, mainly by putting information into relevant context. There are claims that the *knowledge society* has been achieved already in Europe, soon accompanied by an *Internet of knowledge* (EIFFEL 2009).

Our data indicates that in 2020 knowledge as such is regarded as one of the most important professional assets and social values of an individual. Thus competition for the 'true' sources of knowledge will be intense (*Li*). Due to the sheer volume of new information people rely more on their personal networks (personal socio-graphs) and on recommendations within shared socio-graphs (friends of friends) to find *relevant* information. Thus, similar to intellectual *property*, there will be a change in intellectual *capital* which includes not only human capital, but also structural capital (bridging people inside with people outside) and relational capital (the extended network or ecosystem) (Bontis 1998; Nahapiet & Ghoshal 1998).

Still, much information retrieval will be based on search (*Pienaar*), and consequently the public will want free access to news sites (*Koponen*). The EU has already put forward the notion of 'free movement of knowledge' (available to all, no matter where it is situated) as a fifth freedom (*FInES 2010*). Digital literacy and broadband access have been declared essential to successful living in Europe and the US (*Nadel*). One author (*Jones*) even does no longer see a role for IP as knowledge itself has been commoditised.

The business perspective on knowledge is that in 2020, competition will be about who is most effective at sharing content with the audience that matters most (*Jones*).

Knowledge?

Know-how (*taito* in Finnish) is a skill or competence, an ability to act.

Knowledge (*tietämys/tieto*) is meaningful, "embodied" (person, culture or organisation) or encoded information put in context, dependent on time and space.

Information (*tieto/informaatio*) covers a range of concepts from interpreted signals to knowledge artefacts. Information has value if it is unique and useful to someone.

Nonaka et al. (2000) also distinguish between **explicit** and **tacit knowledge** and describe **knowledge conversion** processes.

Knowledge processes **in media** have been described by Kivinen, Immonen, Giesecke (2010).

2.1.2 Networks and Networking as Intrinsic Values

Both in 2010 and in 2020 people connect based on shared mindsets, lifestyles and business interests (*Pienaar*). However, the dynamics in the networks will grow exponentially. What in 2010 is referred to as 'status update', will be – partially automated – become in 2020 a more and more dynamic (ultimately real-time) stream of information, including information per person in the network, about the location (real or virtual), others present (real or virtual), subject of activity, expected duration, and finally, the reasoning: *why are you at that place, for what purpose*? Additionally, all available recommendation systems will be interlinked to this, as to provide dynamic recommendations.

The reason behind this is simply that people trust and learn more from their socio-graphs (*Pienaar*). *Tolvanen* even assumes that people cultivate personal networks as a hobby, and that the importance of something is defined by trusted peers. Moreover people actively store their memories (micro-histories) for their network (*Tiainen*).

In a culminated scenario, beyond 2020, people indeed identify themselves less by nationality, profession or class status and more by their position in networks. Social success is measured by the size and the quality of personal networks, as well as the 'value' (recommendations, updates, 'competences' etc.) that individuals add to the respective network. These networks will cover activities in professional, private, real, virtual and public life, respectively.

If this scenario (most likely for younger generations) will materialise, it will certainly create counter movements (at least 'anti real-time', 'anti big-brother' initiatives), based on traditional values of human relations (*Tolvanen, Giesecke*).

2.1.3 More Sharing, Participation and Collaboration

As networks as such are a highly regarded social value by 2020, people will be even more motivated to use them. Sharing, participation and collaboration has started already. Community building and – as a consequence of the preference of 'sharing' versus 'owning' – communal ownership will increase (*Cruickshank*).

Regarding sharing, privacy will remain the biggest issue: privacy is still a very important (social) value in 2020, however views on publicity vs. privacy may differ between generations. People want to control how they interact and remain in control of publicity vs. privacy of the content they generate. This continues to pose challenges to those who own personal content. People will remain strict about private information not being mixed up. Still, more personalisation and control of media content are welcome (*Pienaar*).

Regarding collaboration, some people may even become citizen editors and publishers (*Valtonen*). In a business context, we see increasingly 'flat' social interactions and structures. This implies new forms of ICT-enabled collaboration outside hierarchical structures and controlled media, of which *open innovation, collective intelligence* and *agile organisations* are examples. The social culture in 2020 is more participative as well as more collaborative (*FInES 2010*). Community building increases, as people are looking for more collective perspectives to the world (*Valaskivi*)

2.1.4 Amalgamation of Physical and Digital

By 2020 portable *cocktail identities* allow and facilitate the expression of multi-faceted (virtual) personalities (*Jones*).

Multi tasking as practiced by the younger generations already merges concurrently the real (home, work, phone call) and virtual (web, TV). People who are used to multi tasking will not likely get rid of this habit.

Boundless surfing blurs physical and digital borders between sites, (virtual) places, groups and communities (*Kirjonen*).

Better immersion narrows the gap between physical and digital: information is presented in real-time modus in a way in which real persons, real places and real news play important roles. The users will interact with this information in the same way as they interact today in a multi-player online role play game.

Knowledge sharing and other serious activities will be facilitated by game-like interaction (see figure 2, Gaming dimension and *Kuikkaniemi*).

Figure 2. "The wall", courtesy GP wiki

Care robots (developed as solutions for the diminishing population and problems of an ageing society) are the first evidence for human-like behaving things. This will change our perceptions of what is 'human' and what is not (*Valaskivi*).

Due to lack of better wording and as hyper-real is already associated with Baudrillard, we label this amalgamation phenomenon between physical and digital *(Cruickshank) Über-Reality*.

Two authors are cautious about such phenomena: *Nadel* emphasizes that humans are affected to artefacts and their monetary value and *Pienaar* indicates that people's values, mindsets and lifestyles may not change much due to the increasingly connected digital media world. Additionally, she points to the difference between [perceived, real, suggested…] needs and mindset.

However *Rautiainen* takes an integrative view, noting that [amalgamation phenomenon between physical and digital] does not replace the behavioural needs and patterns in the real world. He emphasizes the opportunities for intermediary technology helping people to enrich interactions also in the real world, e.g. by direct interpersonal (i.e. with people co-located) computing.

In the end the question remains, whether the technologically possible is actually desirable from a social value point of view? (*von Stamm*)

2.1.5 Politics, Globalisation, Crises and Beliefs

Regarding politics, In the most positive 2020 scenario, on EU level, social cohesion and inclusion is being fostered and unemployment tackled. Openness to new ideas and solutions, based on knowledge and powered by intellectual capital has been achieved (*FInES 2010*).

Herkman integrates this partially in his statement that the power of international alliances, such as EU, NATO and WTO keeps growing. Then, however, he locates growing power also to [global] business corporations. This causes new nationalist

movements against cultural globalisation. Thus national cultures and languages will still affect remarkably on media content and consumption. In a final, pessimistic view, *Herkman* assumes that official politics will recede from individual citizens and political decisions are made by small political elites.

As a client-side counterpart there are new ways for customers to be organized and accumulating better negotiation power, see, e.g., http://carrotmob.org (*FInES 2010*)

However, the challenges of unequal distribution of wealth, education, access to media, [water], nutrition and freedom of expression around the globe remain (*Valaskivi*). That means that many (local) crises will have emerged by 2020. More disruptive change is rooted in social processes (such as terrorism), (nature) disasters and large scale failures (e.g. financial market collapse) (*Trappel*)

In a crisis situation, people use their favourite channels also for sharing their feelings and information (*Väätäjä*). Complementary, crisis situations support quality journalism: people in a crisis have a compelling need for reliable information on economy, environment and society. Individuals feel [and behave] as human beings and social animals with existential needs – not as citizens fulfilling grand designs of democracy (*Nordenstreng*). Last not least crises cause escapism as well: people just want to flee their misery, at least for a couple of hours. Thus media needs to offer alternative (interactive) worlds also and even increasingly so in times of crises.

Whereas *Pienaar* assumes that people will interact and search for content that fits their lifestyle, *Valaskivi* indicates that the importance and visibility of religions will without doubt grow because of the new questions about human collectivism and relationship with machines. Media has in many ways replaced various functions of religion (starting in the 19th century) and will even more act as a place and space of religious acts and rituals.

An interesting approach is *Li*'s "walled garden" 2020 scenario. The walled garden contains the mainstream of beliefs and "content". People align themselves with a "package" of beliefs which fits their social values [or "lifestyle"] and seems suitable. Within this package, there is an assumed freedom of life, making the question about control (e.g. of content and narratives) superfluous. As – within one package – there is no belief in alternative narratives, all the abundance of self organisation and interest groups, social networks and communities is limited to the individuals' reality defined by the content of the very same package.

2.2 Social Media

By Asta Bäck, Katri Grenman and Esa Sirkkunen

Key innovation drivers	Key scenarios by
1. Semantic knowledge in semantic profiles 2. Identity management through profiling oneself toward different audiences 3. Expressing social activity and interest through internet Other key drivers are mentioned in the social values dimension above.	Cruickshank Heikniemi Inkinen, Jones Kirjonen, Li Pienaar Rautiainen Saarela Sirkkunen Tolvanen Trappel Valtonen

Social media has been a hype term for many years already. According to the authors, this is not a trend that will blow over; on the contrary, in the future all media will be even more social.

Social life will be penetrated by communication technologies, which will be better integrated in day-to-day procedures. When these technologies occasionally fail, they will paralyze public life considerably. On the other hand, personal computers have traditionally distracted people from face-to-face interaction. The next phenomenon that will attract users in is the devices, applications and services that allow humans to enhance their face-to-face social interaction much better than the traditional devices. Device interaction will be designed to minimize any distractions during interpersonal contact. (*Trappel, Rautiainen*)

One scenario includes a “second world” where people are connected everywhere and all the time. All media is also in that world, but there are no limits that necessitate the separation of one media from another. Almost the only need you will have to satisfy in the physical world will be eating, since the virtual world will cater for your needs and enable you to e.g. travel, feel and spend time with your friends at your computer or any other connected device. (*Kirjonen*)

Tools will accommodate for the new social experience. Web clients will have native support for social annotations. Feeds will become more visible in everyday life through integration with entertainment devices and home appliances. Social media will not remain tied to the computer; it will penetrate everyday life in general [i.e. people will not particularly associate it to computers anymore]. (*Heikniemi*)

There has been a social or communicative element in the internet early on with discussion forums and bulletin boards. What we refer to as social media distinguishes itself from the earlier applications in several ways. The most important new features are visible, permanent profiles and networks between users, sharing various kinds of media and content and collaborative creative activities. Most social media applications have all these three elements, but they have varying emphasis on these different aspects.

In order to envision the future development opportunities, it is important to look at these three areas in detail and separately from each others.

2.2.1 Profiles and networks

Profiles and networks are increasingly important in 2020. The profile may also contain information of personal interests, and can be used for personalisation if the user wants it to be used like that (*Valtonen, Saarela, Sirkkunen*).

Who owns users' profiles and networks and who may benefit financially from them will have to be solved by 2020. Giving users control over their profiles and how and where they are used can be the basis for business models. But also, views are expressed that privacy is not so much of importance in the future (*Li*).

Several different alternatives can be seen relating to profiles. Instead of a single profile linked to one's real identity, we can foresee many alternative identities or personae that a person may have and the user may select the most suitable one for any particular case (*Jones*).

The advances in semantic web technologies are important in relation to profiles. If and when the profile is semantic and with more semantic knowledge, knowledge bases and media resources available, it will be possible to help users in finding relevant information. Combining the opportunities of semantic web technologies and social networks give opportunities to building highly relevant, personal services (*Tolvanen, Pienaar, Heikniemi*).

A practical aspect of identity management is being able to log into different services with one user account. Linking profiles and single access in an easy and user controllable way will be the key. (*Heikniemi*)

The networking opportunities will have significant impact on the society as a whole. Also, competition for attention will be fierce for all who want attention, be they individuals, causes, companies or media producers,

2.2.2 Sharing and commenting

Sharing benefits from users' networks. Information overflow is the key challenge. The task for the future developers is to create new tools to browse, collect and manage all shared and available content.

Users have already become accustomed to expressing their opinions by commenting or in a shorter format by rating, tagging or just indicating that they like what they share. These kinds of interaction opportunities are becoming the norm everywhere. In the future, it will be difficult to say, which applications are social media applications and which are not, because these interaction opportunities are utilised everywhere, and people can link their activities to their web presence in social media applications.

Micro actions have potential for wider applications than what we currently see. Indicating trust, agreement and disagreement could be expressed easily with micro actions, and this gives potential to add more semantics and understanding to what is presented on the web (*Heikniemi*).

2.2.3 Co-creation

The third characteristic feature of social media is to enable self-organising, creative activities. The motivation to participate in this kind of activities is driven by reward opportunities – interesting work and objectives, care for community, fun, recognition, connection, improvement, competition, incentives, knowledge exchange, influence and collaboration (see http://www.doyouknowco.nl).

Co-creation is not only used in social media but will be one of the ways through which media companies will produce content in the future.

2.2.4 Real-time social media

The ease of use and interaction has lead to what is called real-time web (*Inkinen*). Instead of sharing past experiences, people tell what they are doing or thinking at the moment, or even what they are planning to do. Developing applications that let people express themselves in issues that are of interest to the service provider, or to develop analysis methods to understand the communication in certain topics are opportunities for future development work.

This ubiquitous sharing and connection leads to the expectation of being continuously able to be aware of people and things that matter. As the amount of available information is so huge, there is no way people can process this by personally going through all content and data sources. Rather, we'll see various applications that shift through all the data and analyse it in order to draw each user's attention to the issues that matter to him or her most at any particular time. (*Valtonen, Cruickshank*)

During the last years, there have been many expectations attached to location related services, including social media services with location information. Location information has even more privacy issues than web-based information, so the expectation is that successful location related applications will be very much in user control. Also, the number of people that users will be willing to share they location with will be smaller than in their online communication networks. Popular location based services have mixed elements from games to sharing location data. Also, looking at tweets with location information, even on real location with the help of augmented reality applications are examples of how mixing different kind of applications and technologies create new, appealing services.

2.2.5 Potential success factors in developing social media applications

Opportunities in developing successful social media services lie in giving users control over their data, but privacy remains a challenge even when sites want to support it. Successful business models may be found in respecting users and letting them be in control of their own data by paying for control and privacy.

Another key area is helping users to manage data and content overflow, offering awareness services that help in staying aware of personally important issues with minimal effort and aggregating and visualising views of the world from different perspectives. Users should also be helped in creating and maintaining contacts and communicating – these are basic human needs and there is always interest in services supporting this. Creating personalised advertising services that provide people with

useful information and help in one's personal life in non-intrusive ways is also important.

Building real-time social media applications to enhance concurrent experiences either in one location or over distance are also crucial for the success. Equally important is adding the social aspect to media consumption even though people may consume media at different times and channels – seeing which of your friends have seen a particular show/film and/or making recommendations based on friends' opinions. Recommending in different kind of applications be they of professional or private nature is one of the key features of successful social media applications.

In 2020, it will be difficult to say, what is a social media application and what is not, because users will be visibly present in most media applications, and the "social aspect" has become an element of real-life, location based applications as well.

2.3 User and Audience Behaviour

By Merja Helle

Key innovation drivers	Key scenarios by
1. While the baby boomers are still significant in numbers, generation Y and millenniums dominate the cutting edge media field and will not likely return to any earlier, narrower, meanings of media 2. Quality media will be demanded as much as today but users co-create more content than today 3. Users engage automatic search robots and knowledge curators, but also allow packaged, 'walled garden' media	Goodman Jones Koponen Kuikkaniemi Li Nylund Pienaar

In 2020 audiences has become an old fashioned term associated with previous marketing based research on targeting specific demographic groups for advertising. Therefore in this section I prefer to use the term media *users*. This does not mean that understanding audiences is not important any more. On the contrary understanding the media use of people, their needs, preferences and everyday practices in engaging with different kinds of media is central for the media field and industry. This is agreed upon by all the commentators touching the issue.

Media users in 2020 are not passive recipients of mass media messages but media users also participate in production of media content and influence it with their active media choices.

Understanding the identities and everyday practices of media users has become crucial and old mass media based media companies are in trouble. Media users do not consist of persons with one stable identity or demographic groups based on fixed income or a place of living. People have control over their media choices and media use and also turn towards their personal interests and trusted friends or sources of information, entertainment or social networking.

People now have cocktail identities – an amalgam of different faces to the world that they effortlessly slip in and out of during the day as they travel their 'youniverse'.

People's cocktail identities consequentially means the end of focused targeting of products and services and a switch to providing a palette of options through which consumer can proactively navigate as they wish, driven by whichever identity (and personality) they fancied adopting. (*Jones*)

2.3.1 Fragmented media use

Media use is fragmented and user preferences can be almost contradictory as media users control their media use and choose what media to use and whom to trust. The idea of freedom of choose for media consumers is seen as a positive thing by many but there is also a darker side as some of the people drop off the cultural and social mainstream because they cannot afford or know how to use digital devices and content.

Understanding different kinds of media users and user groups and networks has become the core of any successful business model and the information is also kept secret inside media companies.

There are different groups of users, no group fits one model. According to *Nylund* in 2020 an emerging set of new values for media use are emerging. This subculture is described by Paul H. Ray and Sherry Ruth Andersson who see it as one of three dominating consumer groups in U.S. They are called the Cultural Creatives. 26 percent of the adults in the U.S. – 50 million people – subscribed to these values some years ago. The cultural creatives reject conventional western lifestyle. They are disenchanted with "owning more stuff", materialism, greed, me-firstism, status display, glaring social inequalities. They are critical of almost every big institution in modern society, including media, corporations and government. They reject narrow analysis and are sick of fragmentary and superficial glosses in the media that don't depict what they see, or explain what they know from their own direct experiences. (*Nylund*)

Instead, they value authenticity and direct personal experience. They like whole process learning, rather than narrow intellectual approaches. They are concerned about the condition of our global ecology and the well-being of our planet. Both men and women among cultural creatives embrace what are usually designated "women's issues" and "women's values". (*Nylund*)

According to *Nylund* cultural creatives are a big challenge for the media industry because they want services that are based on the same critical and analytic word view that they are sharing.

One of the central issues and also of most diverging viewpoints regarding year 2020 concerns the motivation and freedom of choice of media users. A less rosy picture of freedom of media choice is presented by Li with her concept of "walled gardens" in which global conglomerates and national governments offer media content packages most suitable for people's values and preferences. These media packages are predetermined although and illusion of choice may exist.

The gatekeepers – those who control the interfaces – will have near-absolute authority over the content that is available. What is available is also what people rely upon to go about with their daily life and what organizations rely upon to go about with their daily operation. "Walled gardens" will become so pervasive and so vast that they constitute the full reality for almost everyone in the "civilized world". Trust and privacy issues at the beginning of the 21st century have become quaint relics of the past. "

Certainly, there will be pockets of contents and activities outside the walled gardens, perpetrated by self-styled revolutionaries, dissenters, social dropouts and the like. These will be tolerated so long as they pose no risk to the legitimacy of the mainstream", claims Li

2.3.2 From demographic factors to generational mindsets

The authors' focus in predicting future media use and user behaviour seems to be on digital gadgets and content. However it seems that magazines have survived best the onslaught of digital reading as they have had a close and friendly relationship with the readers and their interests and life worlds.

There is however a remarkable lack of comments and methods about how media users could be researched and their media practices understood in a detailed way, entwined within their everyday life worlds.

The criticism against using only marketing research based methods that rely on detailed demographic data of media users is widely accepted. Demographic factors based on present marketing research will not explain user behaviours or determine who the audiences and users are. Instead the media should focus on generational mindsets writes *Goodman* (and *Pienaar*), especially when dealing with use of social media.

According to Goodman a generation' mindset is created by the social circumstances they were raised within their youth. This mindset never changes throughout their adult life. Each generation brings its own technology with them throughout their life cycle. Technology of one generation does not change the mindset of another. In 2020 there will be two generations - Generation - Y and Milleniums - whose media habits are dominating the media field.

Generation-Y uses text messaging as their mainstream communication, giving cell phones and PDA's a new dimension. Texting is used for personal communication and business. This generation does not use much email, just text. In 2020 Generation-Y will be 26 - 43 years old. Millenniums are fully engaged in texting, Twitter and SMS, as is Generation-Y. They are fully integrated and comfortable with touch screens, mobile media and entertainment. This generation has the least direct personal contact with people when compared to other generations. By 2020 Milleniums will be 11-25 years old and they will have worldwide impact on society.

It is very important to understand the mindset of each generation. Thus media needs to speak to them in their respective own generational language. It is not meaningful to appeal to a demographic age group. *(Goodman)*

Kuikkaniemi states that in 2020 general media consumption statistics do not serve any more advertisement measurement purpose (advertisement impact is calculated case by case) and for this reason media companies do not share their knowledge about media behaviour and penetration. We will have less and less general information about how people consume media, and what is popular or not. Making general statements is hard. Continuous research on media consumption is important.

Measuring media use experience is important since it is not only the quantity of media consumption that is important, but the quality becomes more and more important parameter for content producers and for business operators. Primary way of measuring the behaviour is system metrics. We will have several companies profiling users based on system metrics. There might be also companies that do integration of profiling based on different systems. User data analysis expertise will be important issue. This is a major privacy issue, emphasizes *Kuikkaniemi*.

2.3.3 How people choose and consume content

The big question of how people will choose their media content is still on the table in 2020. Automatic retrieval of content via search robots fulfils some needs, some people turn to knowledge curators who choose and forward information, many are satisfied with "walled garden" content packages that fit and confirm the user's life system, many turn to friends and other trusted informants for interesting and trustworthy information.

Recommendations, contextuality, personal profiles, aggregators and activators are all utilized by media companies and media users to find relevant content for people's divergent interests.

Media users consume and demand different types of content. 24/7 news flow is just one part and interests a minority of media users, unless in time of crisis or global accidents. Local news is avidly consumed and discussed as well as content shared with friends and families, There is also interest in what *Koponen* calls slow content and slow platform media content. This means content used for identity creation and pleasure, more analytical and in- depth stories.

Media is used via different types of gadgets and also radio, TV, books and magazines still prevail as media channels. Text, sound, photographs and video complement each other on different platforms and more and more media content is consumed via mobile tools - smart phones, tablets or netbooks although there is a trend of smaller and smarter all-in-one media gadgets.

It still remains to be seen how much media users and especially which media users spend time in or with real-time/virtual/augmented media environments. The hype about new media technologies and their content taking a central place in people's lives has diminished and technological innovations have become a part of everyday life in some sense. The economic and political realities of our societies and the ways they influence our lives and media behaviour is of more concern to media researchers and media producers.

For example *Pienaar* wonders whether people really change their consumption and sharing of media based on technologies, platforms and services available at the time. There is more and more evidence that our social values, and not our demographics are the main contributor to how we consume media and socialize - whether in the physical, or virtual worlds. Our "social make-up" matters more than what most marketers and technologists seem to think.

For *Pienaar* it is clear that an in-depth understanding of the mindset or psychology of the users will become key to drive the most successful services. There is a difference between needs vs. mindset.

2.4 User and Audience Interfaces

By Raphael Giesecke, Ulf Lindqvist and Asta Bäck

Key innovation drivers	Key scenarios by
1. Better sensing leads to much higher situational awareness of (portable) devices. Their gadgets are aware of anything the user wants to stay up-to-date with 2. Awareness leads to more adaptive interfaces with, e.g., augmented reality in common use in mobile devices 3. Situational- and user adaptation leads to less intrusion, even if media interfaces are ubiquitous and media surrounds and accompanies people everywhere 4. The interface experience is much more seamless than today. E.g., navigation/surfing is more image based, more intuitive and less dependent on language and keywords	Eriksson Kuikkaniemi Lindqvist Saarela

2.4.1 Ubiquity of Aware and Adaptive Media Interfaces

Always On and Connected: in 2020 media will surround and accompany people everywhere. There is more outdoor media, as well as home and decoration media (up to interactive wallpapers), as well as various mobile gadgets and sensors that can be used to connect and stay connected. These gadgets will be aware of anything the user finds important to stay up-to-date with (*Kuikkaniemi, Cruickshank, Eriksson*).

Other sensors (e.g. measuring the user's bio-data) and real-time information about the local environment will lead to much higher situational awareness of (portable) devices and their interfaces.

In 2030 the main media interface may be a sort of advanced mobile iPOD (*Eriksson*) with high resolution and colour rendering which is easily connectable to other high-tech devices for multi-audiences. However a whole gamut of other devices will be available alongside (*Kuikkaniemi*).

The more these devices are aware of the user's situation, the more non-intrusive they will 'behave'. They will learning from past user behaviour and will reckon the needs for 'silence' vs. 'action'.

According to *Kuikkaniemi*, in 2020 digital billboards are a commodity. Some of these public displays are adaptive and interactive (indoors, walking areas), however especially large displays for drivers remain mostly passive and with static images due to safety reasons. Each display is a unique web-channel with real time web component and this way the advertisement is completely location aware. The link between public displays and the web can happen either with image recognition, geo-location links or just simple URI codes (*Kuikkaniemi*).

2.4.2 User Interface Experience

The main goal will be to make the user interface experience much more seamless than today. For instance navigation/surfing by 2020 is more image based, more intuitive and less dependent on language and keywords. The subject can be found by, e.g., a subject on the screen or by shooting a digital photo of a key component (*Lindqvist*). However the image based interface will not replace text completely (*Kuikkaniemi*).

Figure 3. Nokia user interface ”flat”

Game interfaces range from advanced sensors, voice and gesture recognition to the classic joystick. Stereoscopic interfaces are natural and an easily adopted option if needed but not a necessity (*Kuikkaniemi*). Many of these are used in non-game environments as well.

Figure 4. Nokia user interface “wrist”

Augmented reality technologies will find their way to the media products where information from the virtual world is to be combined with the visual information of the real world. This technology is already in use in some mobile handsets (*Valli*).

2.4.3 Specific Interfaces

B2B and Professionals’ Interfaces: companies will rely on broadband internet, with most communication being handled on advanced mobile devices, which can be connected wirelessly to wide screens and printers etc.

Hybrid Interfaces: media in 2020 is primarily a service consumed through a device which might be completely integrated to the content. Even “passive media” has always an interactive channel available (*Kuikkaniemi*). See also *Cruickshank* on ”digital paper”.

Libraries: a successful library in 2020 is at least an information integration and sharing centre (*Laukkanen*) and, following *Pienaar*, may even offer “personal virtual librarians”. They could answer questions such as “which person (profession) has found which book, and which article in the book, helpful, when addressing these (specified) research questions, in which context?” invluding an individualised bibliometric report.

2.4.4 Audiovisual Entertainment Interfaces

TV/Video

A general view among the authors is that already by 2015 we will have a mix of LD, HD and 3D televisions, but there will not be an all-over conversion to HD and neither 3D (*Cruickshank*). The difference between broadcast and streaming will disappear when some channels turn into department stores of brands (*Eriksson*). RSS feeds will be there, but also many other streaming technologies.

There will be a multitude of standards and modalities used in parallel. S3D is an addition, significant in high quality immersive video, gaming and data intensive collaboration (*Kuikkaniemi*).

There are different opinions among the authors regarding the convergence between television and net. While some experts (e.g. *Cruickshank*) expect everyone to consume TV by browsing and virtual interfaces, others expect the consumer to have 10-100 separate devices for media consumption, from advanced mobile pads with extremely high resolution and colour rendering and high-fidelity sound to large 3D home theatres with all modern reproduction features.

Programmes are still distributed both by public service companies and commercial channels in 2020. Many programmes are available via peer-to-peer (P2P) containing a lot of local and hyper-local content produced by amateurs, local companies and organisations.

Tolvanen's 2020's TV set will integrate ratings and recommendations from the network into the EPG view, based on recommendation engines, adding comments, ratings and related information.

Giving the control to the user might be analogous to selling intelligent 'remote controls' to a TV with a multitude of channels. Some users do not invest the energy to browse through channels to find interesting content. Thus the future 'remote control' vendors could provide the "tool" itself (e.g. software with a right to use license) or the "tool as a service" (right to use and access channels with personalized menu) (*Saarela*).

Audio

There are some analogue radios still in 2020 because people like them, but overall music and audio consumption will be spread. Download and streaming are both popular, along with mobile and car systems. Event audio streaming is common and discussion channels will be more popular than currently.

2.5 Media Content

By Katri Grenman

Key innovation drivers	Key scenarios by
1. Segmentation plays a key role and consequently the role of general, mass media is less significant by 2020. 2. In parallel, there will be a clear division between freely accessible standardized news information and paid for, high quality information services. 3. More services based on publicly available data, including maps and statistics of all kinds, appear.	Antikainen Bender Heikniemi Kuikkaniemi Lindqvist Sirkkunen Väliverronen

2.5.1 The Marketplace of Contents

According to some authors, the future will see gatekeepers to content, business and consumer markets, and these gatekeepers who control the interfaces will have near-absolute authority over the content that is available. Big hybrid companies will dominate the global commercial media industry. On the other hand, some views see that publishers, radio and TV companies and other players have an even smaller possibility to influence what gets shared through more open channels.

Universal connectivity, open source movements and pervasive free access could result in there being no role for IP in 2020. Competition would not base on owning content but rather on sharing it most effectively with the most important audience. (*Li, Jones, Sirkkunen*)

2.5.2 News and Newspapers

The year 2020 will see a clear-cut division between freely accessible standardized information and paid-for high quality informational services. This is not dependent on the medium that is used to transport this information. (*Trappel, Uskali*)

Most likely we will see a combination of professionals and amateurs delivering the news, with pro-am models used in content production and amateur journalists and photographers competing with professionals. The news content could be even 75% based on reader input. (*Lindqvist, Bender, Sirkkunen, Valtonen*)

The next change is what newspapers and news are all about. Newspapers may focus more on human interest stories and more on local than international or national news. Important stories are these that are not easily available elsewhere. People will pay for local content, and most of media will be localized for “deeper” reach and better integration of advertisements. (*Kuikkaniemi, Antikainen, Väliverronen*)

Content filtering will be a key issue. There is a need for methods for selecting, filtering, packaging and organizing the exponentially increasing amount of data that the next generation of mobile devices, interacting with their environment, will produce. The emergence of methods for selecting the information one wants or needs from the

overwhelming stream of content is going to be a rapidly growing business sector. In addition to filtering, personal media assistance could be offered as a service. Media houses could charge both for the service and for their premium content. (*Li, Heikniemi, Antikainen*)

2.5.3 Text

In 2020, text will not be completely replaced by visuals. However, the ways of consuming textual media will change. Media reading devices will be small, easy to carry and much easier to use than they are today. There will still be physical books, even in 2040, but they will be works of art for bibliophiles rather than material for mass consumption or communication. (*Kuikkaniemi, Cruickshank, Väliverronen*)

Magazines will still remain a strong media, but variety will increase. They will be available as different versions; print, online and mobile. Electronic publishing will diminish the overall consumption of printed newspapers, magazines and books. Most printing is done on demand, which will eliminate the need for large warehouses for printed material. (*Antikainen, Lindqvist*)

2.6 Professional Journalism

By Esa Sirkkunen

Key innovation drivers	Key scenarios by
1. Permanent journalist job positions will decrease while work opportunities as, e.g. independent "journalpreneurs" and within marketing and PR increase. 2. The pace of news work will increase, still. 3. Journalists will act as producers and facilitators, working in various professional-amateur constellations, mastering co-creation and crowd sourcing processes and supporting the audience in their knowledge processing and learning. 4. We will see more collaboratively made, iteratively built and open-ended story forms tailored for various media formats and displays.	Bender Cruickshank Dal Zotto Herkman Kuikkaniemi Nordenstreng Trappel Uskali Väliverronen

By the year 2020 professional journalism will not be vanishing away. One expert is even predicting that we'll be witnessing a renaissance in the near future - a turn from emotions and escapism back to quality journalism (*Nordenstreng*). On the other hand some others predict that the legacy of professional journalism is vanishing and that opinion and persuasion are making their way back to journalism (*Väliverronen*).

All in all we are going to still have professional journalists in 2020 but the number of them may be decreasing, even a lot (*Uskali*). The writers seem to agree that the economical problems of conventional media houses will continue and will lead to smaller organizations, smaller budgets, less steady jobs and more free lancers and amateur journalists taking part in the content production. The network environment emphasize the reputation building possibilities of individual journalists (*Cruickshank*) so there will be new possibilities to build a journalistic career outside the media companies and their steady pay cheques (see for example Aitamurto 2009).

The professional work process will change although journalists will still make, gather and publish the news. There are also various new tasks for journalists to master: they should manager the information flow, analyze it fast (*Cruickshank, Uskali*), tutor or guide the citizen journalists, develop the work in different professional-amateur constellations, initiante user generated content and crowdsourcing campaigns (*Kuikkaniemi*). On the other hand there is less time to concentrate on building single news stories. As a consolation journalists will have automated tools which will ease their work in information seeking and analyzing it (*Uskali, Väliverronen*). Journalism will lose its position as the main definer of what is newsworthy because there are so many other rivals in media sphere (*Väliverronen*). In order to keep up with the other forms fast evolving social media the co-operation with user-producers, knowing your audience more thoroughly is essential.

It is also evident that citizen journalism or any user generated content genre will not replace professional journalism as such (*Dal Zotto, Trappel*). But the differentiation process that has been going on for last few decades continues because the audience

segmented, specialized media formats are gaining more and more popularity (*Herkman*).

Covering local or hyperlocal issues are areas in which professional journalism can still have a major role. In European countries there is still need for journalism that is made in national languages (see OECD 2010).

Although there are pressures to concentrate on entertaining visual material our writers seem to think that the central position of text will endure (*Dal Zotto, Väliverronen*) as a core of professional, so called quality journalism. But we will see a wide variety of new journalistic genres in the future. First of all the collaborative or co-creative forms of media production will partially transform the ways stories are told in journalism - we will see more collaboratively made, iteratively built and open-ended story forms tailored for mobile devices, audio, web, print or public displays. For example live blogging (see Beckett 2010) is one of these new genres.

Figure 5. Value network map. Source: Holman 2009

In live blogging the crow-sourced material is mixed with quotes from journalists, governments and NGO's so that the reader/viewer has a stream of live narrative combined with access to non-linear data and commentary. Live blogging allows the reader to control the flow of news in a much more proactive way.

People are already now using their social networks and social networking technology to filter, assess, and react to news (Pew Internet 2010). One can foresee that journalists are becoming more like facilitators who are helping the audience in their active knowledge building process offering tools for collecting and contextualizing the given information. Journalistic services will develop towards learning environments in which the users can process and contextualize the information according their needs. Journalist will learn to use the full possibilities of hypertextuality by giving also source material to the user-readers in the spirit of open code (*Bender*).

There are also gloomy visions about the fate of journalism as we know it. The growing amount of different content resembling journalism - produced by bloggers, corporations, NGO's, advertising companies to name a few - expand the range of journalism so that the whole concept is in the danger of fading away.

2.7 Gaming

By Raphael Giesecke, Petri Vuorimaa and Jukka Häkkinen

Key innovation drivers	Key scenarios by
1. New gaming platforms and crowd sourcing enable faster development cycles and allow less risky revenue models 2. The Real World Takes On Games Logic • game style interaction and game style user interfaces are in use in education and work • interfaces recognize voice and gestures, new sensors enable biofeedback 3. Games Discover The Real World • virtual & mirror worlds and augmented reality merge • games take the reality as such as their "playground" • people wear game devices in real life, casually • "e-Earth" serves as federated, digital game platform	Kuikkaniemi Laukkanen

2.7.1 New Gaming Platforms Shake The Industry

While game development has been focused on game consoles and PCs, recently smart mobile devices have become ubiquitous. At the same time social media, especially Facebook, has become a widely available software platform for games. Consequently a viral market for (massively) multiplayer online (role-playing) games has emerged.

Traditionally, game development has taken months or even years and the development costs for console games have been enormous. Since only few games are successful, the risk for investment loss has been very high. In contrast, the new platforms have enabled much faster development cycles: small game houses can develop so called indie (i.e. independent) games crowd sourced and market the games themselves using viral marketing. End users play the games either using web browsers or mobile applications.

Kojima (2010), the creator of the Metal Gear Solid game series, has predicted that game consoles will become obsolete in the future. This is still speculation, but in 2020 games will definitely use the cloud approach, both for development and platform. The user interfaces will still use web technology and games will be most often played on mobile phones. And generation Y and Milleniums favour anyway digital, online content instead of visiting retail shops to purchase their media.

According to Chang (2010) the main advantage of what he calls *Gaming 2.0* is that it makes games frictionless, ubiquitous, social, and service-oriented.

The revenue models consequently shift from "pay for game" or even "pay for console" to "pay for resources/reward points". All Zynga games (Farmville, MafiaWars etc.) are based on this. The model is well researched and successfully applied outside the games world within most customer loyalty programmes (shops, airlines, hotels etc.): one can always (slowly) earn points but often it is more convenient to buy them. Note also that there are generally no entry fees, and invitations by friends are commonplace.

The industrial implications are that the traditional division into big publishers, who fund and market the games, and smaller game houses, who develop the games, will vanish. The big publishers and their funding power will be simply needed much less in 2020.

2.7.2 The Real World Takes On Games Logic

By 2020 political discourse, group working, simulations, decision-making and open innovation systems will all be influenced by lessons learnt from game design and game interaction. Educational content too will be augmented with playful interactivity, e.g. one can learn more energy efficient ways of driving or using household appliances by playing a real life game. Schell (2010) goes even further and says that our lives are becoming games. Game-like interfaces are simply more entertaining and rewarding to use than traditional computer user interfaces. Combined with social media people can compete with their friends in everyday life. For instance people can compete with their friends who has the smaller carbon footprint by, e.g., increasing their use of public transport.

Games as such will be conceptualized more widely than today through a wide variety of playful and interactive contents. Changes will also happen in video and book-like content, which will contain interactive components that are part of the original design and story. The diversity in games is also reflected in game interfaces, which vary from advanced sensors to voice and gesture recognition. The sensor systems will read various bio-signals more easily and comfortably and enable new types of game and interaction adaptations and biofeedback for increased self-awareness.

Important for the large media houses is that many aspects of *Gaming 2.0* can be transferred to music, TV, print journalism/magazines, and packaged media in general. If everything is a game, then media consumption is also a game that we play with our friends. This can be applied, for example, to Internet newspapers, by using again the reward mechanisms described in the sub section above, focussing on points for recommendations.

2.7.3 Games Discover The Real World

We assume that virtual worlds and mirror worlds, as well as augmented reality and *lifelogging* as outlined in the Metaverse Roadmap (Smart, Cascio & Paffendorf 2007) will ultimately merge. The reasons are the following:

New online games and virtual worlds will increasingly take the physical reality as such as their ‘playground’, e.g., a possible *Second Life*, *EVE online* or *WOW* follow-up will be located in real places. Real authors are quoted (e.g. in *Alan Wake*) and real brands are used already 2010.

The integration of real-time news into such games and worlds would lead to an even stronger connection to daily reality.

Additionally, game figures (avatars) can be rewarded if their owners prove that they did some meaningful task in the real world (e.g. supporting the poor or victims of real disasters).

This setting will be supported by devices allowing people to follow the game situation wherever they are (or move) through convincing augmented reality.

Consequently we assume that by 2030 (not yet 2020) Google Earth will be re-developed to assist such environments. Billions of sensors and millions of enthusiastic users will digitally mirror on distributed servers their local, physical environment until an 'e-Earth', a federated, digital, online and partially real-time model of the globe will be ready to serve as the ultimate immersive virtual, mirror *and* game platform.

One of the biggest challenges will be to manage large scale audience interaction so that individual participants will receive adequate feedback while the overall experience remains comprehensive.

Note the business opportunities for real word physical places such as cafés and shops displaying game situations online, in real-time. Customers will certainly visit places with much 'action' and many avatars around. We know already in 2010 that communities successfully attract tourists related to places used for movie sets. This will expand to game places.

Figure 6. Google Maps *pin edited into physical space. Source: Smart et al. 2007*

2.8 Media Companies and Their Features

By Stina Immonen

Key innovation drivers	Key scenarios by
1. Demand for service process thinking 2. Agility and flexibility towards different audiences 3. Capability to adapt new roles 4. Competence to utilise company external resources	Bender, Immonen Koponen Kuikkaniemi Pienaar Sirkkunen, Uskali

Media companies are always affected by their selected business models that shape the companies' core business processes and entire organisational systems, i.e. interrelations between technology in use; work tasks and processes; roles and competences of the personnel; and interaction between individuals inside and across the organisation. This chapter describes shortly company features that seem to be 1) inevitable regardless of the selected media business models either based on abundance or scarcity of something in interest of the customers, and 2) possible optional features. Note that we concentrate mostly on news media, as the scenario authors focussed on this area.

2.8.1 Fundamental Features

Knowledge work (e.g. Blackler 1995), done by company internal personnel and external content co-creators, is one of the media companies core processes. In its essence, knowledge work is needed to reduce the information chaos by applying ability to make and change theories, processes and rules in use. A typical media company has also knowledge assets that referring to Nonaka et al. (2000) are:

- Experiential knowledge assets: Tacit knowledge of workers – skills and know-how on individual level.
- Conceptual knowledge assets: Usually on company level, typically explicitly represented by the company brand, including the media- and overall design concept. They are articulated through images, symbols, fonts and language.
- Systemic knowledge assets: Documented explicit knowledge, within systems/databases/tools but also in manuals and IPRs. Ideally, systematised and packaged information about customers (including "the audience") and suppliers is available in this form as well. In our view, also the media product as such (e.g. online article) can be a systemic knowledge asset, if it is enriched by a sufficient amount of metadata, and stored in a database.
- Routine knowledge assets: This tacit knowledge is rather on organisational level, while being expressed by practices, day-to-day routines and the overall company culture. While being mostly practical, these assets also embrace the company's "story" and further background sharing.

Users and audience will demand professional knowledge services whatever interactive media is in use or however sovereign the users will be in accessing information. It is

unrealistic to delegate to search engines other than routine services. In high quality knowledge service provision all knowledge assets of a company need to be exploited.

The users will evaluate the quality of journalism by the experienced reliability, credibility, trustworthiness and transparency of the content production and editing processes (*Bender, Saarela, Väätäjä*). The common expectation is that there will always be a real demand for 'official' (trusted) news both for an elite audience willing to pay and for the masses expecting the content for free (see *Nordenstreng*).

Human editors, professional journalists, and other professionals will be needed for 'fine-tuning' the contents for different customer segments (*Bender, Cruickshank, Giesecke, Kuikkaniemi, Laukkanen, Li, Väliverronen*). Professionalism includes new types of roles that indicate also new types of interaction with the users and audience (*Goodman, Immonen, Jones, Kuikkaniemi, Pienaar, Uskali*). The roles of information gate keeper, filter and contextualiser are devoted to structuring information. Additionally needed roles are curator who will decide what content is made available; activator who will initiate user generated content and crowd sourcing campaigns; and customer intelligence officer who investigates the needs of the user and audience groups as well as customer groups. New skills and competences will be needed, such as the ability of making creative leaps in the analysis of information, ability to produce different types of journalism for different types of users and audience, and ability of creating stories and narratives around the subject in focus (*Cruickshank, Sirkkunen, Herkman, Nordenstreng*).

However, the number of permanently employed journalists and professionals in 2020 will be dramatically fewer than today (*Uskali, Nordenstreng*). Journalists will work mainly as self-employed freelancers with project type assignments (*Laukkanen, Nordenstreng*). Smaller organisational units set new requirements for permanent personnel. Since not everything can be done alone with a small staff, specialisation and scoping will take place alongside with networking and collaborating with other content providers, also with non-professionals (*Herkman, Immonen, Sirkkunen*). At the same time, the demand for multi-skilled journalists working mobile (and thus remote) without support of the 'home-base' work community will increase (*Sintonen*).

2.8.2 Optional Features

As sharing and consuming of contents takes place within user networks, company and product brands gradually lose significance for the users (*Saarela, Tolvanen*). This trend will be strengthened if the users will be technically and legislatively (no IPR regulations) more empowered to have access and control over the contents by their own. An additional view on brand is whether it is established around a company or individual content providers such as journalists, bloggers etc. This will have clear implications on the possible business models and thus service production processes of media companies.

Another feature deals with the nature of the content demanded in the future. Whereas one view emphasises that entertainment is taking over so called serious content, the other expects good quality, serious journalism to hold its position, even if only for 'elite' customers. In between is the third view supporting the idea that several different types of journalisms will co-exist. In an extreme view, new contents will not be professionally produced any more while the citizen generated content will be effectively re-used in the production.

2.9 Media Technology

By Olli Nurmi and Raphael Giesecke

Key innovation drivers	Key scenarios by
1. Cloud based media services become ubiquitous 2. Next generation of mobile devices appears • Most devices are portable • The first flexible 3D displays appear • A typical device knows its location, directions and its user's biometric information. 3. New professional news tools for planning, (mobile) editing, A/V recording and real time online publishing 4. Printing presses allow printing in various qualities – all between a typical tabloid format and a glossy magazine	Bender Cruickshank Kuikkaniemi Werfel

Note this dimension covers media technology related drivers which are not yet mentioned in the dimensions above.

2.9.1 Converging Networks Lead to Real World Web

In general, the capacity of networks will evolve. Also, mobile access to "rich" media content will be available nearly everywhere.

By 2020, different kinds of networks (wireless or wired, P2P or meshed) for different purposes (voice, video, data, control, etc.) have been homogenized and successfully share protocols and formats. This development started with the quality-of-service aspects. One example is identity-aware networks. In those networks, the communication infrastructure authenticates the user and uses this user data in accordance with the associated user profile. In this respect, the border between applications and communications is increasingly blurred (*FInES* 2010). The evolving semantic web, combining meaning with the structure of data is another early example (*Kuikkaniemi*).

Due to the fact that sensors and small devices are penetrating the daily life in all respects and that the correlating communication channels are spread mesh-like over the different domains, the real world communication is no longer distinct from the technical communication. This leads to wide-spanning and all-to-all-connecting networks, dubbed "Real World Web". They will take market share out of traditional broadcasting.

2.9.2 Visualization, Search and Interaction Technologies

Building on the convergence of real and virtual worlds (e.g. through augmented reality), suitable visualization and interaction means have been developed to help creating, modifying and analyzing complex information (data). These technologies will also enable the creation of new services from publicly available datasets, including maps and statistics of all sorts. Stereoscopic (3D) view is commonplace.

Search technologies will evolve essentially. In 2020 image based and voice search will be common place. Users feed image or voice samples as keys and the search engine calculates by advanced recognition technologies the content of the key and returns the most relevant results. This technology will be used to find content inside video material, too.

2.9.3 Devices Replacing Notebooks and Handsets

In a technology driven scenario, *Cruickshank* estimates that by 2015 mid-resolution colour ink "notebooks", folding like two thick postcards will be available. They would display all media. By 2020 these would be slimmer and rather inexpensive, available in a variety of sizes and resolutions with 3D displays. We expect that these devices would replace the currently known e-reading devices.

Mobile handsets, however, need to have much more functionalities in 2020. A typical device will thus know its location (the successor of GPS is built in), its direction, the user's heartbeat frequency, blood pressure and stress level. Additionally, to cope with augmented reality needs, it will constantly scan its environment.

Figure 7. Device study by Nokia

The combined device, integrating notebook and mobile handset, will most likely have a A5 to A4 size screen which can be curled. By 2030 these devices will be known as *iBrain* – as their computing and storage capacity will be used to inform and assist their users in a convenient way of "brain extension". This is assisted by nightly automated large scale Internet server downloads based on the user interests, which may encompass a Terabyte of data. These nightly downloads also help to keep the wireless data rates at daytimes sufficiently low.

2.9.4 Planning, Journalistic and Editorial Tools

Tools for automated planning of articles will be broader and smarter in 2020. The currently used tools by *Demand Media*, *AOL* and *Associated Content* scan the Internet already for interesting themes, search queries and competing content offers. Following a check whether the planned article can be complemented with ads an automated task description for a freelance journalist is created. In 2020, these tools might be expanded to be able to deal with contents of culture, economy and finally, news.

Tools for (citizen-based) journalism in 2020 will include mobile editing, as well as audio and video recording devices that are easy to use and capable of real time publishing in online services.

On editorial level there will be the first generation of automated tools to check the relevance and importance of news and validate the user generated news, along with auto-summarization, auto-headline generation and smart filtering tools.

2.9.5 Others Supportive Tools

Audience interaction and profiling

By 2020, tools to manage large scale audience interaction will allow individual participants to receives adequate feedback while keeping the overall experience comprehensive.

Receiver-driven consumption refers to profiling technologies that contain the information about the user preferences. These profiles can be either manually or automatically based on user activity and profile adaption. Profiles can be cumulated by collating information from different services to which a user has logged in.

Automatic Linking

Even in 2020, the inclusion of links for citation by-and-large remains a manual task. However a system for auto-generation of links within news articles has been developed in 1995 already. The links assist the contextualization of news by the inclusion of links to localized analogies (*Bender*). Thus there will be enormous pressure to develop this technology further.

Printing

Most 2020 printing presses have an integrated drying facility, allowing the printing of newspapers in various qualities – from standard formats to A3, brochure and magazine formats, including inserts. Combined with inline stitching and online trimming, a typical tabloid format can easily be converted into an A4 sized glossy magazine. (*Werfel*) We strongly expect that readers will want this magazine quality experience in case they need to *pay* for a newspaper.

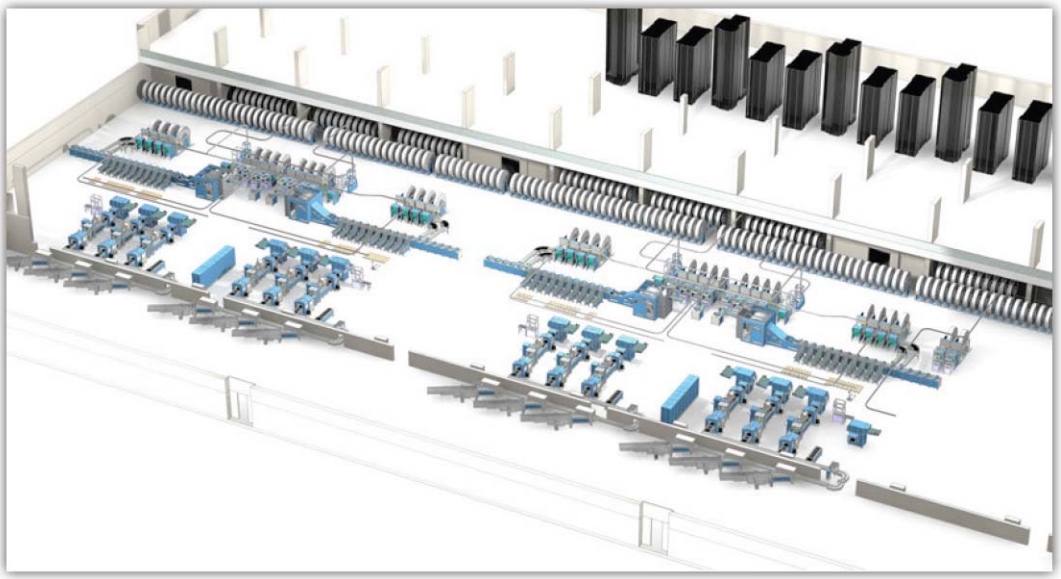

Figure 8. Integrated printing and packaging system. Source: Schur Wamac 2009

3 Business Concepts

By Stina Immonen and Seppo Leminen

Key innovation drivers	Key scenarios by
1. Dynamics of knowledge 2. General demand for intelligent customer information 3. Providing value-adding (total) services for users, audiences, and other customer groups	Goodman Koponen Kuikkaniemi Li, Nadel Pienaar Tolvanen

3.1 Context

We define the context of media business concept development as following:-

The media sector is a knowledge intensive business (Hipp 1999), using knowledge work in production (converting information into knowledge) while creating experiences and knowledge for users. See info-box in chapter 2.1.1 and chapter 2.8.

Neither user centric business models nor new technology promoting business models, nor simple combinations of these, will provide sufficient earning opportunities for the media sector. Instead, we propose to use a holistic, integrated system approach. Here, we assume that the combined (and optimised) value of the ecosystem of users, industry, ICT providers and further stakeholders needs to be taken into account.

The media sector as a whole (and not only in some selected parts, e.g., gaming) needs to progress towards new technologies and new meanings. We agree with Verganti (2010) that merging technological breakthroughs with radical innovation of meanings is a particularly effective type of innovation strategy. We also agree that a design-driven, i.e. integrated system approach would lead towards Verganti's technology epiphany (Fig. 9) and thus, towards a market leader position.

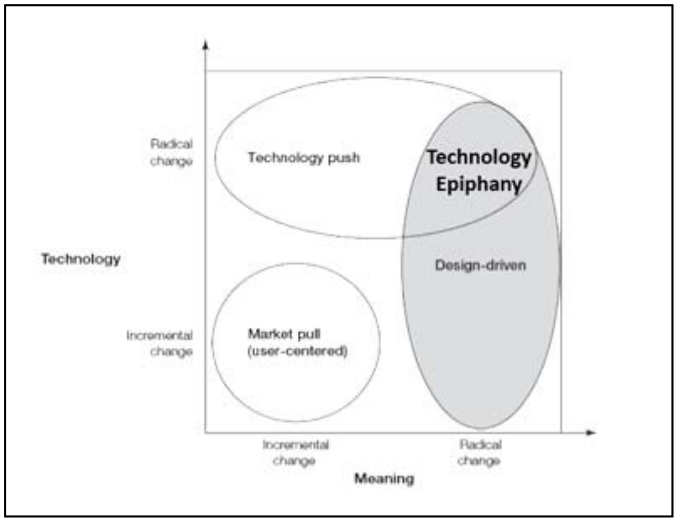

Figure 9. Verganti's technology epiphany

By business concepts we do not mean 'ready to implement' business models. Rather they are conceptual descriptions about potential business opportunities embedded with business drivers and earning logics. A business concept needs always to be locally

adjusted and implemented to a company-specific context which then makes it an operational business model.

According to Anderson (2009) the future, online economy is built on processing power, hard drive storage, and bandwidth. The costs of these elements trending toward zero very fast resemble an engine behind the new Free Economy. Thus, business models will be based on abundance, not on controlling scarcity. Anderson distinguishes three types of business concepts (or business models as he calls them): 1) direct cross subsidies - offering a product or service for free as an inducement to pay for something else, 2) three party markets - a third party pays for participating in a market created by free exchange, and 3) 'freemium' - offering a basic product/product for free but more value added component for a fee. This can be interpreted also in away that when offering something of very limited added value for a customer, the expectation for willingness to pay for that will also be rather low. Offering user experiences with new meaning provides possibilities for more radical changes in the business.

Combining Anderson's future business concept thinking together with Verganti's technology epiphany and our nine media scenario dimensions we can draw a map presented in Fig. 10. The upper right hand quadrant of the map illustrates the area where we expect most potential both for radical technological innovations and new meanings for the customers and consumers. We propose to use this map for developing more detailed business models, combining technological breakthroughs with radically new meanings in a system-based approach. We will focus our future research on these dimensions.

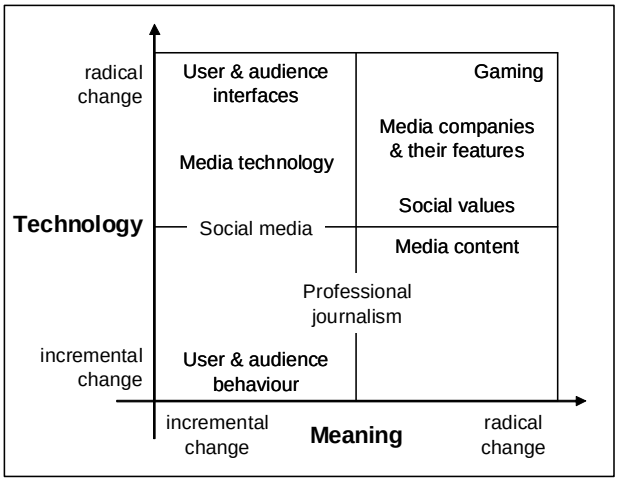

Figure 10. Map of Business Drivers Dimensions

3.2 Key Business Drivers

3.2.1 In Search for New Meaning: Utilising Customer Intelligence

Six types of core business concepts, representing a continuum from conventional, incremental business development to more radical, creative solutions, were extracted from the writings of *Antikainen, Eriksson, Goodman, Herkman, Jones, Kirjonen, Koponen, Kuikkaniemi, Li, Lindqvist, Nadel, Pienaar, Tolvanen, Trappel, Saarela, Sirkkunen and Valtonen*. These were 1) providing targeted professional and user generated content to targeted audiences, 2) versioning content especially for mobile devices, 3) selling user information to a third party, 4) facilitating user's identity creation and expression, 5) providing services both for end user (individual) and a third

party (another business or non-profit organisation), and 6) providing content dependent devices and virtual environments for creative media use.

The first logical step when developing content business is transforming the traditional media from mass media (same content for many) to user centred media (tailored content for individual needs). User and audience groups must be much more effectively and accurately segmented *(Goodman, Immonen, Tiainen).* Accordingly, also the content could be offered with augmented reality or specific user specified attributes such as relaxation, dramatic details etc. even in the genre of news and narrative reporting *(Lindqvist, Sirkkunen).*

Moreover, users and audience are expected to become more mobile, and maybe less consciously *consuming* media but rather *living* with media (*Kuikkaniemi, Lindqvist*). This leads towards more precise versioning of the content driven by the end user devices. These contain intelligent technologies that recognise the situation of the user (*Nadel, Uskali, Valli*).

Selling user information (*Herkman*) to a third party acknowledges the content as a means for gathering user and audience groups and valuable data about them, which can be merchandised further for various purposes, mainly for advertisers.

Facilitating users' identity creation and expression, for example by using their affiliation to brands, exploits the users' new social value – *you are what you share* (*Jones, Koponen, Pienaar*). Supporting identity building provides possibilities for new revenues. The natural extension of this is to offer also additional identity consulting products and services.

Taking service business opportunities seriously shakes the industry (and its staff) considerably. A service is intangible, and basically an experience for the user. When the quality or performance of a media service is expressed with attributes such as immersion, the service providers need to know about their customers much more than the traditional reader statistics (*Kuikkaniemi, Li, Valli*).

The most unconventional business concepts are those that are not content-centred, that concede the control to the user or to companies providing user interfaces and concentrate on devices, platforms and virtual environments, whether they be new hardware and software solutions or extended experience services for the customers (*Li, Saarela, Valli*). The core competence of media companies lies still firmly on their knowledge about their users and customers, and on the ability to gather this information. This knowledge will also attract collaboration partners outside of the media industry, which in turn facilitates the offering of extended services.

3.2.2 Earnings from Advertisers

Advertising has traditionally meant for media a most significant cash flow. Advertising impact and users' experiences are evaluated with demand for more reliable and accurate methods (*Kuikkaniemi, Lindqvist*). Advertising revenue losses are an evident consequence of being unable to provide value-adding services for the advertisers. Advertisers look for means to reach clearly defined target groups by using, e.g., the possibilities of social media.

Advertising is related also to the brands – and consequently on the capability to establish, maintain and capitalise on a brand. A brand is a platform to attract audience

and thus advertisers. Advertisers are nevertheless confronted with the new social or cultural value of 'word of mouth' or viral marketing. This is connected to user or audience behaviour relying on trustworthy informants. Here, media needs to take on an active role of educating advertisers about the media users and their attributes.

3.2.3 Earnings from Users and Audience

At least six different types of user payments were identified of contributions of *Koponen, Kuikkaniemi, Lindqvist, Pienaar, Tolvanen, Sirkkunen.* Ordered from most conventional payments to more creative they are: 1) traditional income from subscription fees, advertisements, copy sales, access fees, and even some type of media tax, 2) micropayment based on actual, real-time consumption of media, 3) payment for on demand hyper-local contents, 4) payment for desired attributes of the content such as 'lean-back and relax', 'dying to know more' etc., 5) payment for services such as filtering, organising, investigating information, and 6) payment only for the device or delivery platform for content receiving and sharing.

The user by 2020 is expecting to have more content for free. However, this trend can be complemented with micropayments (*Koponen*). Examples could be payment by number of clicks, uploaded files or of searches in archives. The first view is free but the more interesting, contextually tailored, content would need payment.

Adding local content to the information stream is, at least to a certain degree, also possible to being automated by using metadata. However, the more in depth in the locality we go, the more probable it is that also human, local knowledge is required. Locality or even hyper-locality offers chargeable value for the users. Combined with the micro-payments it would be possible to have targeted information just in the right time (occasion) and in the right place (*Kuikkaniemi, Sirkkunen*) .

A more refined earning model is based on payments connected to the desired attributes of the content (*Tolvanen, Sirkkunen*). This is already a familiar concept for customers when selecting a product for purchase, but still these payments could be developed more in line with the media experience that the mobile user is looking for in a particular moment and content.

Payment for attributes of the content is already very close to the idea of payment for the services (*Pienaar*). The first logical step seems to be to offer personal media assistance and content provision services. Media consumers will need guidance but also filtering of information and this is a clear service. We already discussed user identity creation as a service. Collecting and sharing revenues between different services and platforms will make the payment models for companies more complex, and as such this also represents a major opportunity for new technologies to emerge.

4 Key Innovation Drivers per Media Genre

By Raphael Giesecke and Olli Nurmi

One of the major ongoing discussions in the media industry is about the synergies between different media genres, and the best ways to make them visible and harness them in the most beneficial way.

Currently, researchers suggest that “traditional” media genres, especially news, may benefit when harnessing synergies from gaming and music industries. This is also our finding, at least for gaming, as shown in chapter 3.

But how can media genres be labelled, and what would be actually the innovation drivers per genre? Or does the whole industry amalgamate into a new state of being, which could be coined “future media”? We will focus in the following on the genres as defined in the Next Media programme plan:

1. **News and Information**: including online and offline media, and especially scientific and, broader, non-fictional books and magazines
2. **Education and Learning**: again in all forms, online and offline
3. **Entertainment and Games**: including music, TV, videos and also fictional books and magazines
4. **Community Media**, or social media: new media forms in which the main feature is strong interaction with users, their networks and communities
5. **Future Media**: all new media forms not mentioned above – including novel combinations of the above genres

The five tables below outline the innovation drivers with the most impact per genre. Note that in order to keep the tables short we concentrated on specific drivers per genre. Thus we advise to read the Future Media genre table additional to each of the four other tables, as it contains drivers also common for all genres.

We hope that these tables make the sometimes rather abstract innovation drivers as of chapter 2 and 3 more concrete, when read in the context of a specific genre.

The tables also illustrate that there is room for innovation in each of the genres, respectively – in that respect we do not foresee a “revolution” towards “future media”, but rather a slower, evolutionary path, with all genres evolving on their own as well.

Still, the most innovative genre is entertainment and games.

Dimension	Key Drivers: News and Information Genre
Social Values	• ICT-enabled collaboration: open innovation, collective intelligence and agile organisations • people rely on, trust & learn from their shared socio-graphs
Social Media	• co-creation is the means by which media companies produce most content • user profiles with more semantic knowledge
User & Audience Behaviour	• user-based tailored aggregation of content: media companies make use of recommendations, contextuality, personal profiles, aggregators & activators
User & Audience Interfaces	• intelligent personal agents, as in Apple's 1980's vision • people are "always on" and connected: media surrounds and accompanies people everywhere
Media Content	• fragmentation plays a key role and newspapers diminish • clear division between freely accessible news information and paid for high quality information services
Professional Journalism	• journalists need to manage the information flow, analyze it fast, tutor or guide the citizen journalist, develop the work in different professional-amateur constellations and initiate UGC and crowd sourcing campaigns
Gaming	• learning and persuasion through games • pervasive- and ad-games and playful interfaces • crowd sourcing
Media Companies & Their Features	• Professionals in media companies focus on gate keeping, filtering, contextualizing and community sense making instead of producing content. They have new roles such as "curator", "activator", "customer intelligence officer"
Media Technology	• mobile access to "rich" media content available nearly everywhere • new services from publicly available data
Business Concepts	• low protection of IPRs and the culture of sharing erode traditional earnings from ads, subscriptions and copy sales but premium access fees, service fees and a media tax combined with new adjusted payment methods exist. • business models through portfolios (i.e. scattered)

Dimension	Key Drivers: Learning and Education Genre
Social Values	• skills in information search are needed and developed • "media use" is subject of education
Social Media	• co-creation is the means by which media companies produce most content • co-learning develops further • life-long learning is supported by social media
User & Audience Behaviour	• workplace learning needs contextualised support • local learning support leads to media richness • most media use is based on personal profiles and ubiquitous media
User & Audience Interfaces	• libraries become information integration and sharing centres with personal, virtual librarians. • TV sets have integrated ratings and recommendations in the electronic program guide
Media Content	• [some] quality content is free for everyone to use, produced by e.g. top universities • digital content wins against printed versions
Professional Journalism	• journalism provides up-to-date content for history learning • wiki-based content production in learning projects (through journalists and UGC / crowd sourcing)
Gaming	• combination of evolution in new pedagogical methods (problem centred, project based learning) and new playful, multi-user interfaces and technologies
Media Companies & Their Features	• media companies select, filter, organise and package information for their customers only according to specific service requests • professional content editors concentrate on doing background research and increasing credibility by including links and original sources to the content
Media Technology	• portable learning devices (touch screen, eReading + 3D) • tele (virtual) presence • collaborative tools and shared workspaces
Business Concepts	• dynamics of knowledge create general demand for intelligent customer information • providing value-adding (total) services for users, audiences, and other customer groups • web of education services with certified information • life long learning "maintenance" book as a service for the learner

Dimension	Key Drivers: Entertainment and Games Genre
Social Values	• event/experience based entertainment and games • community created entertainment (e.g. Star Wreck) fulfils sense of belonging and experience • work becomes game-like as business systems have game interfaces whereas games become work-like through personal earnings from games: blur between work and fun
Social Media	• personalisation: semantic knowledge in semantic profiles • game element common in various application areas • social interaction connected to all entertainment
User & Audience Behaviour	• gaming will take time away from other forms of media use • users engage automatic search robots and knowledge curators, but also allow packaged, 'walled garden' media
User & Audience Interfaces	• augmented and virtual reality commonly used in mobile devices; searching of videos by voice & gesture recognition • game-like interfaces will become more popular for accessing serious content (e.g. in news games)
Media Content	• game like contents expand (see e.g. the "China game" by Amnesty International) • media contents are integrated into games and gaming (see, e.g. Newsgaming.com)
Professional Journalism	• professional journalists need to initiate user content co-creation and ultimately crowd sourcing campaigns • *see also "Media Content"*
Gaming	• multiple sub-markets – converge to other markets • all games online and [e.g. player status] updated • the real world takes on games logic and games discover the real world
Media Companies & Their Features	• demand for service process thinking • agility and flexibility towards different audiences • capability to adapt new roles • competence to utilise company external resources
Media Technology	• data transmission capacity rises • data collection from end user interaction • new portable devices (touch screen, eReading + 3D) • from application to services
Business Concepts	• dynamics of knowledge create general demand for intelligent customer information • providing value-adding (total) services for users, audiences, and other customer groups

Dimension	Key Drivers: Community Media Genre
Social Values	• people rely on, trust and learn more from their shared socio-graphs (friends of friends) and thus cultivate their personal networks (to find relevant information and recommendations)
Social Media	• recommending is one of the key features of social media applications • challenge to manage privacy and visibility at the same time
User & Audience Behaviour	• individualism versus strong ties (e.g. serving communities)
User & Audience Interfaces	• people are “always on” and connected: media surrounds and accompanies people everywhere
Media Content	• peer-to-peer recommendation dynamics
Professional Journalism	• the number of professional journalists decreases and there are more free lancers and other content providers • journalism will be more networked with citizens and their everyday life
Gaming	• bio-signal sensors enable new types of game and interaction adaptations and biofeedback • game style interaction in use in education, political discourse, group working, simulations & decision making
Media Companies & Their Features	• media companies select, filter, organise and package information for their customers according to specific service requests • professionals in media companies focus on gate keeping, filtering, contextualizing and community sense making instead of producing content. They have new roles such as “curator”, “activator”, “customer intelligence officer”
Media Technology	• new services from publicly available data, including maps and statistics of all kinds
Business Concepts	• advertisers demand performance measures for advertising efficiency and effectiveness from media • media consumers demand filtered information as a service.

Dimension	Key Drivers: Future Media Genre
Social Values	• cognisance – mastering the information overflow • togetherness – belonging to 'trusted', influential networks • acknowledged virtual human relations – managing ICT-mediated identities in social interaction • generation gaps – different needs and skills of different generations • rethinking legitimacy of user behaviour [for] data/information collection and analysis • more heterogeneous discussions and view points, e.g. climate change or "degrowth" approach
Social Media	• semantic knowledge in semantic profiles • identity management through profiling oneself toward different audiences • expressing social activity and interest through internet • discussion on who owns users' profiles and manages social media will rise • profile connected to financial info means easy payments • earning money through activities in social media • real world feeds to one's profile
User & Audience Behaviour	• adaptive media (mental-, emotional-, location aware, behavioural) • user based content recommendation • integrated 3D communication/consumption/collaboration environments
User & Audience Interfaces	• better sensing leads to much higher situational awareness of (portable) devices. Their gadgets are aware of anything the user wants to stay up-to-date with • awareness leads to more adaptive interfaces with, e.g., augmented reality in common use in mobile devices • situational- and user adaptation leads to less intrusion, even if media interfaces are ubiquitous and media surrounds and accompanies people everywhere • the interface experience is much more seamless than today. E.g., navigation/surfing is more image based, more intuitive and less dependent on language and keywords
	…continued on next page…

Dimension	Key Drivers: Future Media Genre
Media Content	• segmentation plays a key role and consequently the role of general, mass media is less significant by 2020 • clear division between freely accessible standardized news information and paid for, high quality information services • more services based on publicly available data, including maps and statistics of all kinds, appear • augmented reality, city services, 3D contents
Professional Journalism	• professional journalists analyse and explain the world
Gaming	• new gaming platforms and crowd sourcing enable faster development cycles and allow less risky revenue models • the real world takes on games logic with game style interaction and game style user interfaces in use in education and work • games discover the real world: virtual & mirror worlds and augmented reality merge; games take the reality as such as their “playground”; “e-Earth” serves as federated, digital game platform; people wear game devices in real life, casually
Media Companies & Their Features	• demand for service process thinking • agility and flexibility towards different audiences • capability to adapt new roles • competence to utilise company external resources
Media Technology	• most devices are portable • first new devices with flexible 3D displays appear • blurring border between applications & communications • from application to services • tools for (citizen) journalism include mobile editing, audio/video recording and real time online publishing • data transmission capacity rises • common mobile technology platform • data collection from end user interaction
Business Concepts	• dynamics of knowledge • general demand for intelligent customer information • providing value-adding (total) services for users, audiences, and other customer groups • crowd media: media consumed together, following the “public viewing” approach • personalised media: customised media, consumed alone

5 Integrated Scenarios

By Stina Immonen

5.1 Deriving Integrated Scenarios

We encourage the industry to derive their own scenarios for their own business areas or companies, using the nine dimensions above. Scenarios can be derived from using one, two or several dimensions at the same time as conceptual change drivers. We suggest to use the dimensions as a conceptual tool to facilitate the depiction of possible futures. Since building foresights is very demanding, and business environments for various industrial players are different, we suggest that individual media companies also create their respective own scenarios once they understood the shared vision.

The following integrated scenarios are one outcome of the vision workshop involving the Finnish media industry as a whole. In this context 'classic' media means news & information, education & learning, entertainment & games; whereas 'new' media means community media and future media, including "wildcard" ideas and projects. The most influential dimensions for creating these scenarios were Social Values, Media Content, Media Companies and Their Features and Media Technology.

5.2 Worst Case Scenario

5.2.1 'Classic' media

Consumers give up the choice of selecting, social media dominates and the willingness to pay for services disappears:

- 95 % of the population lives in city slums
- quality journalism is extinct
- non-quality content is free
- hyper-polarisation in 'owning' knowledge – the rich buy scarce knowledge
- the general knowledge level is very low
- politicians do not care about the nation's state in general knowledge
- 'wisdom economy' rules: '10 million hits in Google cannot be wrong'
- independent thinking disappears

5.2.2 'New' media

- the level of common knowledge is low
- the interest for community matters is low
- search robots are used to find relevant information and the importance of media brands is low

- the Finnish media industry is weak and owned by companies from abroad
- the number of media companies decreases
- while social media is the dominant form of media there are no business models
- advertisement sales is the only viable business model
- free information is dominant and quality journalism is only for elite products with limited numbers of users

5.3 Best Case Scenario

5.3.1 'Classic' media

The industry is able to redefine itself through user experience

- the media field is broad, with many actors and many channels in use
- credibility is the key driver for media consumption
- aesthetics are taken into account
- media is a part of furnishing
- consumers are known and they will be served individually
- interaction with consumers is on a high level
- on-demand journalism is performed according to consumers' true interests

5.3.2 'New' media

- contact to the customer is intimate and it is possible to get information about the users of the media products
- this close contact brings benefits to the customer (through e.g. loyalty programs)
- media products are generated together with the users
- generated information is important and relevant for the people in everyday situations
- there is a win-win situation for the commercial partners
- competition is about bringing the best user experience to the users
- media products and services are aesthetical and they can even be used as decoration element in people's homes
- commodity news are free but users are willing to pay for deeper information
- journalism is regarded as valuable by users
- access to information is flexible (no limitation to terminals, locations or time)
- it is possible to find and share relevant information easy

5.4 Scenario “Human Media”

The following is a positive example of an integrated scenario created within a workshop involving Finnish media industry.

Human Media in this context means that media is carrying a new – human – meaning for the consumers and users. In the following the new meaning is characterized by where, when, how and why human media is used and consumed.

5.4.1 Where

For conceptual illustration, new metaphors such as “media cafeteria” or “media shopping centre” were used, meaning 1) media is consumed in places where people want to spend their time, physically or virtually and 2) it is possible to pick casually whatever one wants. Following this logic, media is present also in public places and therefore is an essential part of city and society planning. Still, personalisation and privacy of media consumption is possible in these public spaces, following the consumer’s own choice.

5.4.2 When

Media use and offering is a seamless part of everyday life, context-aware and in synchronisation with the user’s needs. A large variety of different media services, channels and media (content) offering according to the “24/7 principle” allows the consumers to be in control of their own media consumption.

5.4.3 How

Media is ubiquitous in and through the consumer’s personal, mobile devices; and as design element at homes and public spaces using displays and other surfaces such as windows, tables, walls and floors or walk-through canvasses. The consumers personalise the interfaces according to their preferences including also printed media.

5.4.4 Why

Media is used for variety of reasons – learning and receiving information, entertainment and community building and participation. Media is supporting everyday life, offering relevant and context-dependent information for users’ needs. Last not least media empowers people to select the information they want to share with their network and communities.

6 Conclusions

The scope of this paper is extremely large. By conceptualising future media sector drivers and scenarios into nine dimensions we were able to collate data into logical sets. The data base is informative and useful for re-analysis. It has been developed by many international writers: 27 Finns and eleven authors from all continents.

However, while developing future business concepts, we need to maintain a delicate balance between speculation and conservatism. Speculation can be counterbalanced by, e.g., good reasoning and convincing narratives. Conservative views are mostly based on vague fears of the future. Academic research as such encourages a certain degree of conservatism, with its inevitable focus on the state of the art.

6.1 Findings

We assume (following *FInES* 2010, in contrast with Kumar 1995) that the social and societal effects of the combination of knowledge society on the one hand and the socio-technological systems developed by the global search machines and social media giants will shape the generation-Y and Millenium behaviour. The consequential phenomenon *Über-Reality* – the amalgamation of Physical and Digital – is an excellent opportunity for business models combining radical innovation of meanings with radical new technologies.

Gaming, especially as gamification will have a very large impact on all user and audience experiences in 2020. Also media and device interfaces will "learn" from gaming, including advanced bio-sensors, voice and gesture recognition, as well as 3D and consequently augmented reality. Still, the two dimensions Gaming and Technology can, and shall, be elaborated further.

Concerning media companies and the ways they will operate we confirm that the trends identified in Finnmedia's 2009 strategy paper will be valid in 2020, still. The key message is that advertisers in 2020 will insist on better value (i.e. measurable ad performance), and media companies will consist of smaller professional units, focussed on contextual knowledge provision and editorial publishing, complemented by freelancers and citizen journalists. This content business based on abundance inherently threatens the conventional model of high quality journalistic work.

Our main claim towards industry is that the business concepts in use have strong impact on core business processes and the entire organisational system with its technology, work tasks and processes, as well as personnel and their roles and competences. Moreover, business concepts not based on scarcity and control of information will challenge the traditional view on leadership and management of media companies.

Anderson (2009) describes some key features of abundance management that call for determined organisational development actions. For instance, managing abundance will allow everything if not explicitly forbidden, decision-making is bottom-up, profit plans will be figured out only while doing business and organisational structures are self-emerging. Here, media companies will need to become more agile and flexible than ever before.

Our concluding suggestion to the media sector is to focus on business concepts based on a system approach. These should be developed by establishing and nurturing network relations with key stakeholders, users and audience, and (advertisement) customers. This approach may combine new technologies and new meanings into a truly innovative business epiphany.

6.2 Next Steps

6.2.1 SWOT Analysis of Media Scenarios 2020

The Media Scenarios 2020 have been analysed by applying the SWOT (Strengths, Weaknesses, Opportunities, Threats) method in workgroups consisting of various stakeholders in the media sector, including industrial players and academia.

These analyses will be developed by the Visio 2020 integration group into a vision, which in turn will be the basis for the roadmap process. This work will be documented in a new deliverable “Media Vision 2020”.

6.2.2 Vision Roadmap Development

Roadmaps describe visually the strategy that is needed in order to achieve the vision. Various media genre vision roadmaps will be constructed in workshops.

The roadmaps shall outline the most promising levers (mechanisms) to achieve the positive scenario, and how to avoid the worst scenario.

6.2.3 Nurturing the newly established network

The international component, alongside with a – smaller – outside of media component has significantly risen the creativity and novelty level of this document. Thus we recommend to keep and nurture this newly established network of people interested in the media future. Network members should be invited to Next Media dissemination events and generally encouraged to deliver speeches and presentations, or even lectures and courses, in Finland. This would lead to an even broader cultural and scientific enrichment of media research in Finland.

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Appendices

Appendix 1: Individual Scenario Contributions

Appendix 2: Trigger Questions and Claims

See annex document

next MEDIA | A TIVIT PROGRAMME

Aalto University
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Annex: Individual Scenario Contributions Trigger Questions and Claims

Authors 38 experts – see next page

Version 2. Public

Helsinki, 17 September 2010

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1 Appendices

1.1 Appendix 1: Individual Scenario Contributions

In (Finnish) alphabetical order. Note that v and w are treated the same and ä and ö follow z.

1.1.1 Antikainen, Hannele, VTT

Ideas for Visio2020, 27.4.2010

- The role of IT will be much bigger than today, however in everyday life and in consuming media, technology will be even more in the background. Most people have a possibility to be always online.
- Computers and media devices are almost as easy to use as paper-based publications and they have replaced paper especially among younger generations, aged under 45 (today's 35 years old).
- Electronic publishing has diminished the consumption of printed newspapers, magazines, and books by 10 – 30 % depending on how easy, how cheap and how engaging it is to use reading devices.
- Paper still has a strong position when publishing a lot of text, high quality pictures or content that is reused, or when portability is important.
- Reading on paper is still very popular among those who have time, e.g. senior citizens, even more popular than today, because senior citizens are healthier than today.
- Most printing is based on demand, no more warehousing of printed products.
- Warehousing is in digital format. On-demand products can be automatically ordered, but they are more expensive than their electronic counterparts.
- Outdoor advertising has migrated to screens or intelligent screens.
- Computers, and media and reading devices are voice-operated, touch operation has replaced current mouse-driven systems. Hence, these devices are in many cases easier to use than paper.
- Media reading devices are small, easy to carry and much easier to use than today. They are cheap and affordable, and more like small powerful computers with a quality display than flexible electronic paper.
- A natural part of our social life is digital.
- Most web applications are still free for users, but Google and other players are actively looking for new ways to charge users, since the growth of search advertising has slowed down and the prices are decreasing, because of an oversupply of advertising space.
- The number of big online content players is smaller than today.
- Newspapers focus more on human interest, and on local news than on international or national news.
- The newspaper business is smaller than today.
- USG is a natural part of newspaper.
- Weekend editions of newspapers are still doing well in urban areas.
- Media advertising in Finland is similar to that in other Western countries, i.e. printed media, especially newspapers, have lost its current leading position

- Websites are used whenever action is urged or required.
- Internet is a huge warehouse for information and content. Semantic search finally works efficiently with less attention to technology.
- Personal media assistance will be offered as a service (JJ Kasvi), media houses charge for the service and their premium content.
- E-commerce is an option to stores and markets, it has decreased the role of traditional media in advertising. TV and newspapers still have their role as mass media.
- Advertisers are able to reach their target groups easily, because of intermedia currency and services.

1.1.2 Bender, Walter

The Culture of the Link

Walter Bender
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"The context for human development is always a culture, never an isolated technology." – Seymour Papert [1]

Due to the success of projects such as the Wikipedia, there is much speculation about the role that crowdsourcing[2]—or, as Marlow described it in [3], the "Rule of Many"—will have on the future of journalism. The citizen journalist, posting a video to YouTube, and the amateur pundit, with her blog, have become part of our news culture.

But will the "mob", loosely organized through social-networking technologies, render obsolete the professional editor and journalist? Unlikely. A Columbia Journalism Review study [4] finds that there are too few amateurs willing to tackle the less glamorous tasks of editing, as described by Gruhl [5] and Driscoll [6].* Nonetheless, the culture of news has been changed forever and for the good by the plurality of voices, however raw, that are being heard on the Internet.

There are other extrapolations we can make from the on-line world that might serve as harbingers of the future of Journalism. Again using the Wikipedia as an example, an often overlooked feature is the aggressive use of links: not only is internal cross-referencing between articles the norm, but there is an expectation that every statement of fact will include a citation. Links to original source materials are plentiful. The Wikipedia has built-in affordances to help reinforce this obsession: the {{citation needed}} template—{{cr}} for short—is trivial to insert [7] and hard to ignore. Success of the Wikipedia is not just an open editorial policy, it is a culture.

"The {{citation needed}} template aims to promote accountable discourse." — Wikipedia

This focus on verification is perhaps rooted in the Free (Libre) Software movement.[citation needed] "Show me the code" is the mantra of the movement, because seeing is not just believing, it is the best and most ready form of accountability. Further, it serves as the mechanism by which the community become prolific.[citation needed]

The inclusion of links for citation by-and-large remains a manual task. However, it is possible to automate some of the work. In 1995, Sara Elo developed a system of auto-generation of links within news articles [8]. Her PLUM† system provided contextualization of news by the inclusion of links to localized analogies, e.g., "Due to the earthquake in Concepción, Chile 33000 people were displaced from their homes [This is as if everyone in Tampere over the age of 65 were homeless]". While PLUM lacks editorial judgment about which links were of most interest, it automates the task of writing the explanatory text and generating applicable insert graphics. The "human" editor is freed from those mechanical tasks and as a consequence has more time to dedicate to deciding which links enhance the narrative.

Yet another role for the link is to refer the reader to original source material. A long-standing pet peeve of mine is that most of the material gathered by a journalist during an interview never makes it into the story. It is trivial to include the entirety of an interview in a link. This does not deter the journalist from cherry-picking sound bites, but provides the reader opportunity to dig deeper into the context in which the quote was extracted. (Only once in my career have I ever convinced a journalist to include an entire interview as background—Kudos to Wade Roush [9].)

But access to original source data has even more potential. A recent decision by the Massachusettes Department of Transportation to allow the public access to mass-transit route and schedule information has resulted in a plethora of community-developed data-driven applications [10]. By making it easier for their readers to access original source material, a news organization will undoubtedly launch a culture of activism around these assets, enriching their community and keeping them more relevant and connected to their communities.

Alan Kay once quipped that "technology is anything invented after you were born." The link is no longer technology—it is part of our culture. To remain significant in 2020, news organizations need to embrace the culture of the link.

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* In the Wikipedia, which does not have the pressure of a "news cycle", editing is the norm.
† Peace, love and understanding machine

1.1.3 Cruickshank, Leon, Lancaster University UK

Next Media 2020 Scenarios

Social Values

Digital media is going to disappear, not because of a return to the physical per se, but as we move towards a truly ubiquitous computing environment the difference between physical and digital will dissolve. In the 80's Baudrillard would call this the hyppereal. E ink will allow digital postcards to be scribbled with a pen and 'posted' (either physically or digitally), and can arrive on the doormat via either route with writing intact.

Communal ownership will only be a partial model, much will be open to a community, but equally pornography will always function as a guilty pleasure, this element of transgression will mean that it will fundamentally never be open.

Technology

By 2015 those willing to pay will have mid-resolution colour e ink 'notebooks' that fold like 2 thick postcards to fit into a jacket pocket this will display all media and provide a stable input surface (we will not see roll out screens except perhaps built into clothes). By 2020, there will be slimmer and very inexpensive versions available in a variety of sizes and resolutions with 3d displays emerging.

Even in 2040 we will still have physical books in the way we still have painting and sculpture but they will be artworks for the bibliophile rather than mass consumption or communication. The quality and accessibility of these e Ink displays will allow the internet to dissolve (become more abstract), as the interface to access information becomes intelligent and customable.

Pro-Journalism

I think (perhaps controversially), that there will still be a significant role for the investigative pro-journalist in 2020. Some of this will be the conventional activities seen now, but the mass of data available will necessitate approaches that draw together (filter), but also and vitally, interpreting and making creative leaps in the analysis of data to reveal the hidden picture, story or scandal. These analysis skills will become core to journalism skills (to an extent these seeds are already growing today).

We will increasingly see the rise of pro-journalists who use reputation (as well as/ in the place of currency), as a measure of success. Reputation will increasingly equal credibility and could even determine access to communities. Where elite groups of communicators exchange information with peers ar the same level of reputation.

User and audience interface

2015 will have a mixed economy of low, high def and some 3D TVs, there will never be switch over to all high-def TV broadcast (the only thing that could force everyone to abandon low-deff TV) as TV migrates to IP distribution low def services will spring up to cater for the non-adopters. The difference between 'broadcast' and streamed will be disappearing for many users with 'channels' becoming like department stores, with a recognisable brand and some predictable content, but also a place for serendipity.

They are also a place to meet, have a conversation over a coffee (discussing a common viewing or mailing recommendations). By 2020 everyone is consuming TV by browsing and most are using virtual interfaces that learn (from biometric sensors in their personal information appliances), what elements of a show will be semantically meaningful to them and use these as thumbnails to assist 3D virtual browsing, selection and editing.

Beyond 2020 people will be able to mix narratives and elements of programs to meet their tastes in a semi autonomous way.

1.1.4 Dal Zotto, Cinzia, University of Neuchâtel, Switzerland

Cinzia Dal Zotto
Professor
University of Neuchâtel, Switzerland
Academy of Journalism and Media

Professional Journalism

By 2020 professional journalists will have to become more acquainted with management. They will have to not only accept the rules of business but above all to understand them and to match them with their own ethical standards and their mission of information messengers. If media cannot sustain themselves as businesses they will not be able to fulfill their mission.

There will be journalists who work more and more independently and sell their work to newspapers or other media, or who directly post and sell their news online. This will be the case first of all because journalists want to be independent, they don't want to be told what to do, but also because newspapers cannot afford to employ as many journalists as they do today. The competition in the media market is forcing them to cut costs and shrink, and outsourcing to professionals is cheaper. However, this way, independent journalists will represent a business themselves and will have to obey the business rules.

Journalists will have to understand that money and therefore profitable business is not bad. Money allows you to allocate it where you want and you can decide to allocate it to help other people and/or to produce quality and trustworthy information. Without money you have no choice.

Citizen journalism will be normally integrated in the journalistic work in the future. However they will not represent the main part of information media. The problem being the trustworthiness of their inputs, the control of which requires time and money, as well as the fact that professional journalistic work needs to be compensated.

I don't think that it is desirable to have intelligent programs able to scan the digital sphere and produce real time news reports on demand. At least it is not desirable to have only this type of information channel because this would mean that a big part of the population won't be able to inform themselves, because of lack of time or lack of money or lack of access to digital platforms or lack of interest. People need to be exposed to news as well. On the other hand behind this type of automatic reports there is always the work of professional journalists.

The substitution of written text with audiovisual supports for journalistic work is not desirable either as it only brings to less information and less knowledge. You can say much more though written text than you can transmit with audiovisual media. Furthermore written text allows you to concentrate more on the content instead of on the visual image. By eliminating efforts to get information we only create a more ignorant and lazy population. Unfortunately this seems to be the trend, however I think we should work against it.

1.1.5 Eriksson, Jörgen, Helsinki Metropolia University of Applied Sciences

Helsinki Metropolia UAS Mobile Application Lab. 23.4.2010

Next Media Visio2020 Scenarios

Time jump from 2010 to 2020 is comparable to time jump from 2000 to 2010. So it means that first weak proof-of-concepts and pilots from 2000 are now in everyday use e.g. Mobile Internet, Mobile Location based Services.

This day's first pilots are Apple's "digital department store". This pilot has solved the payment process and micro payment, authentication and digital rights management. Reliable downloading has been solved as well as upgrading, when needed.

Apples handsets iPhone, iPad even iPod are supporting the same infrastructure. These handsets offers the best user interface and user experience that money can buy. Also user support via iTunes workstation program is superior achievement how to make things easy for ordinary citizens.

I believe that Apple has created a full-scale pilot how newspapers, magazines, books and other digitalized media products will be sold in 2010.

The whole story is the system, not a particular part of it.

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23.4.2010

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1.1.6 Giesecke, Raphael, Aalto University School of Science and Technology

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Social Media – Opium for The People?

"Mum, Antti is a strange boy! He is not on Facebook, he does not tweet, and what is worst: he does not even have a mobile phone!". Minna was nine years old when she started marginalizing Antti, in 2009. Antti's parents were not much educated. They didn't do that much. Their focal point in life was the TV in their small Espoo flat. In 2010 they finally bought a cheap Nokia handset for Antti. Too late.

In 2013 neighbours called police for the first time because of Antti. They were frightened. Until 2017 there were a dozen or so "incidents" involving Antti. He became an outsider, a loner, a looser.

Until in 2018 he founded the "Digiton" ("anti-digital") party. With their slogan "Social Media – Opium for The People?" Digiton stood against all electronics. And especially against the internet in all its forms. Digiton instantly gained voters throughout the whole of Finland, including many small entrepreneurs coming from the Centre party, some Greens and a few voters of the True Finns. What united these people were their negative experiences with the immense social pressure created by social network machines following Facebook. Minna – for instance – needed to update her status next to always when she moved a little. If she walked from the office to the canteen, that was fine, as her social status notifier had learned quickly that these specific locations are "office" and "canteen". However, once when she went to a library ("a freaky idea", as she labelled it), after five minutes the first "friend requests" arrived, asking her to update: "where the heck are you, and what are you doing there?". Most of her "friends" she had never met, but all the 389 of them seemed to care so much about her. They always wanted to know where she is and what she does. And more importantly: whom one should meet, and whom not. So in her three "e-devices", one of which she always wore, the simple "connect and report" button, was always switched "on". Of course. All her friends would get suspicious if not. And they all behaved the same.

The Digiton community is a little different. Many members and voters work with their hands, especially in service professions. Surprisingly many are art professionals. Digiton established within few years three model communities in which butcheries, bakeries, shoe-makers and small speciality shops can be found on main street. Many people stopped shopping in the internet for food as for the first time since the 1990s they enjoy hand-prepared food without industrial ingredients. Many feel positively freaked that they are allowed to touch fabrics and other products – and even test the product before buying.

One main factor behind the quick rise of the Digiton party is a certain Finnish media company. In hindsight, they got it right already by joining two Tekes research programmes, but the road to success was bumpy. Effectively, the organisation changed only when, after 20 years of heavy losses, the investors finally asked for a complete revision of the company, involving a dedicated effort on organisational development. The new strategy focussed on values and new services. The values where build around traditional editorial ethics, rather complementing them, not changing the core moral standards. The main focus however, was the aggressive takeover of service niches in the Finnish market. Most of these niches were

dominated by “global players”, who offered a rather basic service level while raking in high premiums. Only by applying local knowledge, joint with a trusted brand, this Finnish media company succeeded to offer a much better tailored range of services, satisfying real human needs, contrary to “suggestive” needs. And they had many services on offer, which the Digitons consider non-digital.

The Digitons themselves are aware that their favourite news are printed locally by some entrepreneurs as a second source of income. They also know that the content varies even from one street to the other – not to mention the variation between cities. What they found hard to accept is that the whole publishing process is completely digital. Until they where shown in practice how happy journalists and editors are when routine tasks can be done completely automated – so that humans can concentrate on the intelligent work.

And in the end Digitons can inform themselves very well by reading papers and discussing them. Not online. But by having a chat at the baker’s, meeting a friend in the butcher’s, and visiting the library around the corner. And of course they can interact with the local journalist: her office is on main street as well. She is new in this company, but she is so much happier now. Her name is… Minna.

In 2025 an in-depth research study has been completed. Of all results, the largest difference is between Digiton voters and these of other parties. Of the others, 85% of all subjects feel constantly under pressure and stressed. Many define their “comfort zone” as very small. They wish to stay within their friend’s circles, in their (virtual) communities and they are generally afraid of meeting strangers. 56% of all respondents do not leave home after dark and 34% will not travel alone to a place which is not known in e-Earth. Digitons, however seem to have a longing for true interaction between humans, using as many as possible of their five human senses, not only eyes and ears. They are open to strangers, have travelled privately to remote countries, and met and befriended many locals. They have a relaxed attitude, a relaxed concept of time (even if they are not often late), and they learn fast. The most stunning result is, that Digitons have a concentration span of up to two hours. None of the others exceeded 48 minutes.

Of course there has been lengthy debate whether Digitons could exist without the others, the “always online” persons. And the clear and frank answer is: no. Still, Digitons have a share of one third of the population now, in 2030. And most of them are quite happy. Especially Antti and Minna, since they married in 2028. In the end they thus updated the core values of the Digiton party, and defined a new mission: Foster friendship and the sense of community beyond fun. Pursue joy and happiness in concrete everyday life. Provide comfort for those in need. Respect love and promote partnership stability.

You can read it on their brand new website…

1.1.7 Goodman, Phil

Social Media and Generations

Are you ready for the Challenge?

The majority of the people that utilize social media are from Generation-Y (16-33 years old in 2010). If one is looking to see how social media will evolve by 2020, Generation-Y will remain the dominate user.

A generation' mindset is created by the social circumstances they were raised with in their youth. This mindset never changes throughout their adult life.

Each generation brings its own technology with them throughout their life cycle.

> **Baby Boomers** were raised with telephone, radio and television. It was this generation that created the Internet, but they were not the one that made it grow.
>
> **Generation - X** is the generation that expanded the Internet, email and made cell phones a way of life.
>
> **Generation - Y** uses text messaging as their mainstream communication, giving cell phones and PDA's a new dimension. Texting is used for personal communication and business. This generation does not use much email, just text. The average age of a text messenger is 28 years.
>
> **Millenniums** are fully engaged in texting, Twitter and SMS, as is Gen-Y. They are fully integrated and comfortable with touch screens, mobile media and entertainment. This generation has the least direct personal contact with people (when compared to other generations). By the year 2020 this will have worldwide impact on society.

Technology of one generation does not change the mindset of another. The significance of each generation aging 10 years is that their comfort level and use of technology stays the same. It does not change during a lifetime. Each generation may use new technology, but remain more comfortable using technology that they were raised with during their youth.

Here are the generations by age:

2010	**2020**
Boomers	
46-64 years	56-74 years
Generation - X	
34-45 years	44-55 years
Generation - Y	
16-33 years	26-43 years
Millenniums	
1-15 years	11-25 years

In 2020, social media will be perceived differently by each generation, as it is now. That is why it is very important to understand the mindset of each generation in order to effectively communicate with them.

A generation's mindset never changes as they age. In humans, the most significant changes mentally and physically happen between 12-17 years of age. This sets the stage for their mindset and does not change for the rest of their lives. An individual's mindset has nothing to do with their personality. It is all about the influences of their peer group, in their youth and continuing throughout their lifetime.

If you do not tune-in to the mindset of a generation, and speak to them in their generational language, communication and resulting comprehension will become stagnant. Stop using demographic age groups. Appealing to a demographic age group will result in your message being "tuned-out" forever.

The only way social media will turn out to be a powerful media, with big returns for marketing and advertising will be to address each mindset differently. Until this happens, social media will stay social for family and friends, and it will not be the powerful marketing or advertising vehicle marketers want you to believe.

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1.1.8 Heikniemi, Jouni

Vision 2020: Social Media Site Futures

Jouni Heikniemi, Sininen Meteoriitti Oy

In 2020, social features have become omnipresent – even natively non-interactive sites support social media concepts such as sharing, rating and commenting. At the same time, the users have found it extremely hard to maintain their social graph in multiple services. The confusion already present in simultaneous use of several social sites becomes even more stressing, as the importance of the media – and thus also the importance of the correctness of your graph - grows.

Users will want to keep their various networks (friends, colleagues, relatives) apart. Currently, this is accomplished by using several sites. As the sites mimic each other and reach essential feature parity, there will be less incentive to use several sites. Also, sites will not be satisfied with owning just one slice of a user's life; they want it all.

This situation could lead to a natural monopoly with a single large Social Media site – one like Facebook now. However, privacy concerns, cultural differences et cetera make it unlikely for a single site to succeed globally across all user groups. At any rate, there will be far fewer sites to register on, and far more sites using this registration as a basis for their own functionality. It is likely that even competing social media operators will co-operate to allow limited sharing of user information.

Naturally, the concept of **user identity** will be of key importance. The current APIs will mature, providing a mixture of the OpenID philosophy and the practical programmability as currently available with Facebook APIs and Windows Live. As claims-based authentication matures, it is even possible for governments to make authenticity claims for these IDs, i.e. verifying a Facebook account as being in possession of a particular real-life person.

Microactions as the primary contribution mechanism

Social media sites such as Facebook will keep their users. However, as the sites will grow more and more integrated with other sites and services, the actual social media site will see a dip in page impressions.

Facebook's attempt at pushing a Like button to every site on the Internet is a prime example of promoting *microactions*: in-context, fast ways to interact with your social network. While the "like" functionality will suffice for most consumers, we will also see the rise of similar verbs: "trust", "agree" and "disagree" will be popular amongst more analytic contributors. Also, implicit content rating – perhaps not by 1-5 stars, but rather through *attributes* such as with the comment rating on Slashdot ("Funny", "Insightful", "Interesting", and "Informative") – will become a crucial way to filter all media.

The microaction functionality may exist on the pages themselves, but there will also be an increasing amount of users surfing the web with clients that have native support for social annotations. The operations such as liking, ranking and sharing are embedded in the browser frame. Data storage is centralized, perhaps slightly alike what was discussed in W3C's Annotea specification from the 1990's.

The preceding methods cover the key use cases for contributing to your social network. *Following* the network can be done in a variety of ways. First, the user's environment will

contain tools to follow your friends' life. Activity feeds will show up on desktops and mobile devices. Integration with entertainment devices and home appliances (TV, gaming consoles etc.) will bring the feeds more visible in your everyday life – social media will not be just something you do while sitting at the computer.

Second, if the user really wants an intensive splurge into his social neighborhood's status, she can either open a client application or log into a web site that will grant her an overall view of all her contacts – or a more close-up view of one. This sort of service will look much like Facebook today, although with more flexible privacy controls and far more information sources.

Third, the activities of the social graph will be present in context. For example, when looking at a web page, a user might see their networks' rating of the resource as well as suggestions automatically gathered from the network. Again, such information could be displayed by the browser UI itself, and support for these features would require little or nothing from the web site. A similar paradigm is also applicable outside the web; a 2020's TV set will integrate ratings and recommendations from the network into the EPG view.

Social media and information search

The rise of suggestions based on social media will reduce the need to sift through large quantities of content for gold nuggets of information. Also, since search can be prioritized based on the network's findings, the user's social graph provides an effective filter against noise.

However, it is unlikely for this to suffice. Browsing will still be necessary when working outside the scope of your network's combined competency – or when intentionally searching for another point of view. In such cases, the social tools will also have to be able to adopt different perspectives – which could be published as partial views from a given network, giving rise to interesting new business and sharing models.

For example, an organization against tobacco use might publish – possibly for a fee – their "knowledge graph", i.e. their verified experts' ratings and findings on a certain category of resources (for example, research papers on tobacco health effects). The client tools would allow any user to include this separate social fragment into their browsing/searching environment. While users wouldn't receive personal status updates from the contributors of such opinions, they would be able to "view the world through others' eyes".

Social media data operators could also publish such knowledge sets per sufficiently large population group. For example, a user could view a particular topic through the filter of young Finnish users, and then examine the same field as rated by Frenchmen over 50 years of age. This way, the social media toolset would also act as a tool for social research.

As implied above, all this will require a reinforced and formalized concept of trust, both on a resource and the information producer level. While a user could simply click "Trust" on a web page, he or she should also be able to declare trust in a certain individual, perhaps limited by subject field. For example, while you might make a declaration for trusting your colleagues as new media experts, you wouldn't necessary vouch for each other's opinions on politics or food.

Such trust networks, perhaps augmented by official metadata (such as "This person has worked as an MP for the Finnish Coalition Party"), also play a crucial role in applying media criticism. This will be increasingly important as the social network also subjects a user to all sorts of biases. In the future, the trust context of the page could be expressly stated by client

tools (“This page is mostly trusted by your colleagues, but not liked by your friends. The author has generally known connections to the tobacco industry.”).

1.1.9 Herkman, Juha, University of Helsinki

Slow but significant motion

Juha Herkman, Docent, Dr.Soc.Sc.

Since I represent a perspective of academic research my scenario is rather careful than enthusiastic. Ten years is quite a brief period in media history, and it is hard to believe that revolutionary changes would happen by the year 2020. However, there are remarkable changes going on at the moment among media branches and technologies and in the long run these changes will be perhaps more significant than we can now foresee. The 2050 situation will be much different than in 2020.

Historical conjuncture of international politics, global economy and possible crises will affect more on national media contexts than technological developments or consumer behavior. I will therefore design my scenario in relation to so-called normal conditions of living, excluding large-scale wars and confrontations between nations or cultures, total collapse of world economy or global eco-catastrophe from the scenario. Nevertheless these threats have also real effects on media content and economy even though confronting them in near future would not be in our immediate horizon.

The popularity of internet-based social media will increase among interpersonal and community communication even though new trendy software and programs come and go. Facebook is probably passé in 2020, but some other application has taken its place. However, the popularity of network communication does not mean that mass media have become extinct. The same is true with games, which are more popular than ever: not everyone wants to be all the time interactive or play games. On the contrary, network communication and gaming fulfill different functions than traditional mass media or entertainment industry. Good stories and narratives will raise their heads again and “passive” forms of reading and watching will still have significant markets.

National cultures and languages will still affect remarkably on media content and consumption, which is today seen in statistics concerning the most popular web-pages, television programs or music. There might even raise new kind of nationalist movements that resist not only immigration but also cultural globalization. Official politics will recede from individual citizens and political decisions are made by small political elites. The divide between grass root activism and institutional politics will increase, and the power of international allies such as EU, NATO, WTO as well as business corporations keeps growing.

The role of generalist media decreases and the role of audience segmented special media increases. This strengthens ambiguously the network of large cross-media corporations and small enterprises. Unexpectedly small, strongly specified non stock market media firms can flourish if they have found a well defined market segment of their own. When telecom and new media tech markets become saturated as traditional media markets have done before, they try to find new growth from content businesses (cf. News Co. vs. Google). This

confronts “old” and “new” media in a way that leads to downfalls and mergers. Consumers will get tired of constant renewing of communications formats, standards and equipments, and technological divergence will slow down.

1.1.10 Immonen, Stina, Aalto University School of Science and Technology

MEDIA COMPANIES MUST LEARN TO KNOW THEIR END-CUSTOMERS

My claim for the future media companies is simple. Media companies, whatever media genres they represent, will justify their existence and succeed to make profits only by satisfying their customers’ existing service demands and by creating markets for new service needs.

This claim confronts most media companies with a new set of organizational requirements that they more or less have been neglecting, at least in the most traditional sectors of media, namely in mass communication.

Magazines are maybe a candidate for a positive exception of the rule. Magazine companies have learned to offer versatile service experiences for their target audiences. The content is especially tailored for the readers who are known to be interested in the brand and theme of the magazine. The end-customer (the reader) usually consumes this service during certain, often carefully chosen moment. Particular service needs of the reader such as need for information or relaxation but also a need to kill some time guide the decision when she will consume the actual service. This is supported by the simple, user-friendly and “mobile” packaging of the service. Magazines have developed their concepts according to their implied readers and direct feedback from their actual readers. A magazine provides the end-customers’ a sense of community by offering the subscribers exclusive extended services, e.g. internet communities, reader trips and other special offers designed for the readers. A magazine that does not sell itself is soon abolished.

What has went wrong for the others in mass media? For fulfilling the service demand and providing a service experience, a media company needs to know its end-customers so well that they can design a service that fits to the customers’ needs. Does it strike odd that having been a subscriber for a newspaper for more than 30 years, not once have I recognized any attempts from the media company to try to reach me in purpose to ask some feedback from me? TV or radio has not done any better even if they also receive my annual license fee. More odd is that the loyal customers have been hanging on for so long but not anymore, now they just keep on fleeing.

The remedies? It is not end-user device driven neither pure productivity increase with lean production processes, multi-skilled in-house personnel or freelancers and technically efficient editorial systems. As the first step, media companies are forced to create and maintain their competence on how to integrate advanced customer intelligence into their service development and production processes. Since this knowledge is not inherent inside the company they need to create tasks and roles by which customer-sensitive information flows will be gathered, analyzed and implemented for the future service development. This implies immediate and systematic two-way interaction with the customers. Media companies not willing to learn about their customers will keep on declining.

To ensure the uniform and high level quality of the service experience media companies need personnel's commitment to these criteria. The core assets of a media company are then the knowledge about customer needs and the knowledge how to satisfy these needs. This knowledge can not be outsourced. As the second step, to preserve, nurture and increase these core assets the companies need to sustain personnel who are motivated and actively contributing to these assets. Media companies that keep on out-sourcing their core processes and assets (e.g. producing high-quality journalistic services, managing customer intelligence) for sake of cost-reductions will fail.

End-customers' service needs will become more complex because of the simple fact of the internet with its easy access to information and entertainment. The end-customers themselves are more capable than ever before to configure their media usage totally beyond the reach of the traditional media companies. As the third step, media companies need to become proactive service integrators around whom a network of local and global collaborative partners will take form. Maintaining and developing network relationships require leadership across organizational borders and genuine will to achieve mutual benefits. For media companies this implies organizational learning and development towards flexibility in knowledge exchange and process development with their partners. New tasks and roles in network management and leadership are required. Media companies trying to satisfy customer needs with full spectrum only by their own are very likely to fail.

As the final step, media companies must take a more active position in creating markets for new services. This requires own product and service development, close communication with the customers, local communities and other relevant stake holders and capability to recognize their service needs. For example, it is not a sustainable business idea to produce excellent, high quality journalism, be it in printed form or in the web, if the customers can not find it and consume it. Media companies not able to engage their customers to their brand and to their services will just slowly die away.

1.1.11 Inkinen, Sam, Media scholar, writer, futures researcher

Dr. Sam Inkinen
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Näkemyksiä median ja teknologian tulevaisuudesta (Next Media 2020)

Yksi avainhaaste kohdistuu siihen, miten tulevaisuuteen kurkottava pioneeriasenne ja luova innovaatiohenki yhdistetään kriittiseen harkintaan, historialliseen ymmärrykseen sekä kestävän kehityksen (*sustainability*) periaatteisiin. Erilaisten *skenaarioiden* ja *roadmapien* merkitystä on korostettu viime vuosien keskustelussa ja päätöksenteossa. Skenaarioilla pyritään hahmottamaan tulevaisuuden epävarmuuksia ja mahdollisuuksia, jotta voitaisiin varautua niihin sekä huomioida kriittiset tekijät ja tärkeät näkökulmat päätöksenteossa.

Olennaista on myös median tulevaisuuden ja digitaalisten ekosysteemien yhteydessä kysyä, mitkä teknologiset innovaatiot tekevät lähivuosina läpimurron. *Ubiquitous Computing* (lyhyemmin *UbiComp*) eli kaikkialla läsnä oleva ja ympärillemme huomaamattomasti levittäytyvä tietotekniikka (jota voidaan kutsua myös *everywareksi*) on todennäköisesti keskeisessä asemassa. Tietotekniikan pienentyessä anturit ja mikroprosessori levittäytyvät vähitellen kaikkialle: kotiin, työpaikoille, julkisiin tiloihin, kahvinkeittimeen, auton kojelautaan, saunan kiukaaseen…

Selvältä myös näyttää, että uudenlaiset, aikaisempaa kehittyneemmät ja ominaisuuksiltaan mullistavat käyttöliittymät vaikuttavat olennaisella tavalla niin digitaalisen viestintäteknologian kuin laajemmin yhteiskunnan, liike-elämän ja kaupunkikulttuurin käytäntöihin. Näitä asioita on oivaltavasti esitellyt muun muassa Adam Greenfield teoksessaan *Everyware. The Dawning Age of Ubiquitous Computing* (2006).

Toisaalta kaupunkisuunnittelijat visioivat uudenlaisia teknourbaaneja tiloja ja toimintoja, joissa arkkitehtuuri, design, media ja teknologia kohtaavat uusilla, luovilla tavoilla. Esimerkiksi tieteiskirjailija ja teknologiavisionääri Bruce Sterling on kuvannut *spime*-käsitteen avulla esineitä, joissa on mukana teknologista ”älyä” ja jotka ovat aktiivisessa vuorovaikutuksessa ympäristönsä kanssa. Ehkäpä jo ylihuomenna löydämme kadonneen kännykkämme tai kalenterimme kysymällä asiaa Googlen tapaiselta hakumoottorilta…

Ubiikin ohella toinen keskeinen iskusana on *hybridimedia* eli tietoliikenteen, elektronisen median ja paperin yhdistyminen. On esitetty, että Suomen kansantalouden seuraava dynaaminen veturi voisi kyteä juuri hybridimediassa. Kysymys olisi näin suomalaisen metsäklusterin, paperiteollisuuden ja digitaalista teknologiaa koskevan osaamisen jalostamisesta uudenlaisiksi palveluiksi ja liiketaloudellisiksi innovaatioiksi.

Kolmas lähivuosina merkitystään lisäävä ”draiveri” voisi olla *semanttinen web* eli ”merkitysten Internet”, joka mahdollistaa merkityksen ja rakenteen yhdistämisen. World Wide Webin kehittäjänä tunnettu Tim Berners-Lee mainitaan usein myös semanttisen webin isänä. Kysymys onkin tavallaan www:n laajennuksesta.

Mainitsemisen arvoinen tässä yhteydessä on David Weinbergerin teos *Everything is*

Miscellaneous. The Power of the New Digital Disorder (2007). Semanttisen webin pitäisi ratkoa lähivuosina juuri informaation hallintaan, löytymiseen ja keskinäiskytkentöihin liittyviä ongelmia. Avainhaasteena on hyppy uuvuttavista datamassoista kehittyneempiin rakenteisiin ja kokonaisuuksiin. Olennaista on tiedon kontekseja eli viitekehyksiä, käsitejärjestelmiä sekä informaation välisiä asiayhteyksiä koskevan semanttisen älyn kehittyminen.

Tällä kaikella on vaikutuksensa niin digitaalisia ekosysteemejä ja digimediakulttuuria koskevaan tutkimus- ja kehitystyöhön kuin liike-elämän prosesseihin: yrityksen tietopääoman (*intellectual capital*) hallintaan, yhteisötyökalujen (*collaborative work*) kehittämiseen sekä johtamisjärjestelmien (*knowledge management*) käytäntöihin.

Helikopteriperspektiivin ja laaja-alaisen panoraamakatseen tärkeys on myös huomisen yhteiskunnassa sekä talouden ja kulttuurin prosesseissa ilmeinen. Lähivuosien kymmenen ICT-kulttuurin keskeistä trendiä voidaan kiteyttää seuraavasti:[1]

- **Real-time –** reaaliaikaisuus luo uusia yhteisöllisyyden ja organisoitumisen muotoja vaikuttaen moniin teknologisen kehityksen reunaehtoihin ja liiketoiminnan käytäntöihin.
- **Avoimuus** – aikamme avainsanoja ovat jo ennestään ”open source”, ”open innovation” ja ”crowdsourcing”. Toimivien rajapintojen, avoimuuden sekä eri järjestelmien välisten yhteyksien ja kytkentöjen merkitys korostuu. Internetin yksi suuri mahdollisuus on tiedonsiirron ja rajapintojen standardointi.
- **On demand** – mediasisältö ja verkkopalvelut halutaan käyttöön itselle sopivalla hetkellä – usein *juuri nyt* sekä mahdollisimman helposti ja edullisesti.
- **Multichannel** – sisältö ja palvelut halutaan saataville kaikkialla ja eri media-ympäristöissä: kotitietokone, työpaikan tietokone, kannettava, mobiililaitteet, printti...
- **Multitasking** – analoginen ja digitaalinen maailma kohtaavat. Verkkoa ja tietokonetta hyödynnettäessä käynnissä on samanaikaisesti monta ohjelmaa, prosessia ja viestintätapahtumaa.
- **Navigoitavuus** – erilaisten navigaatiopalveluiden merkitys ICT-ratkaisuissa (varsinkin mobiiliviestimissä) kasvaa. Toisaalta helppo navigoitavuus ja relevantin tiedon saatavuus ”informaation valtamerellä” Internet-verkossa on haaste, johon entistä kehittyneempien hakumoottoreiden ja käyttöliittymien, semanttisen webin (*semantic web*), rakenteellisen datan (*structured data*) ja laajennetun todellisuuden (*augmented reality*) pitäisi tuoda lähivuosina konkreettisia parannuksia.
- **Mediakonvergenssi** – eri välineet ja niiden sisällöt yhtyvät. Konvergenssi luonnehtii päätelaitteita, mediaympäristöjä, tuotantoprosesseja sekä viestintäkulttuurin konsepteja. Kehitys on ollut käynnissä jo 1990-luvulta lähtien ja syvenee entisestään.
- **Itsensä ilmaiseminen** – digitaalinen media on näyttäytymisen (ja suoranaisen narsismin) paikka erityisesti nuoremmille ”verkkosukupolven” edustajille. Takavuosina puhuttiin datadandyista. Nyt visionaarinen käsite on muuttunut todelliseksi aikalaisilmiöksi.
- **Yhteistyö** – verkkoyhteisöissä korostuvat jakaminen ja yhdessä tekeminen. *Group collaboration* ja *collaborative work* ovat aikamme avainsanoja.

[1] Kiteytyksessä on tukeuduttu Talvi Digitalin (www.talvi.com) toimitusjohtajan Pekka Korpelan sekä Dicole Oy:n (www.dicole.com) toimitusjohtajan Teemu Arinan kanssa vuoden 2009 aikana käytyihin keskusteluihin.

- **Everyware** – digitaalinen teknologia pienenee, halpenee ja sulautuu ubiikkiyhteiskunnassa yhä uusiin kohteisiin ja tilanteisiin media- ja kaupunkiympäristössä sekä elämisen arjessa.

On oireellista, että media-, bio- ja riskiyhteiskunnan ohella on viime vuosina alettu puhua muun muassa *ubiikkiyhteiskunnasta* ja *arjen tietoyhteiskunnasta*. Tätäkin kirjoitettaessa käynnissä on asiaan liittyviä kiinnostavia strategiaprosesseja. Kaikkialle levittäytyvä ”läsnääly” merkitsee sitä, että tietotekniikka pienenee ja levittäytyy entistä laajemmin erilaisiin arjen tilanteisiin sekä media- ja ICT-ympäristöihin.

Lähivuosien keskeiset haasteet liittyvät myös muun muassa virtuaalisiin ympäristöihin ja verkkoyhteisöihin, seuraavan sukupolven mobiiliteknologiaan sekä niin sanotun *yhteisöllisen webin* ja *sosiaalisten teknologioiden* (web 2.0) tarjoamiin mahdollisuuksiin.

On selvää, että uusi teknologia tuo myös mukanaan uudet käsitteet ja iskusanat. Kaiken kaikkiaan lähivuosien kannalta voisi toivoa, että teknologian käyttö helpottuu ja että se sopivassa määrin myös ”kesyyntyy”. Erilaisia kiinnostavia oletuksia, ennusteita ja näkökulmia onkin esitetty lukuisia. Näkemyksellisenä ja arvovaltaisena mielipidevaikuttajana tunnettu **ReadWriteWeb**-sivusto[2] on määritellyt vuoden 2009 viisi keskeistä Internet-trendiä (”Top 5 Web Trends of 2009”) seuraavasti:

- Rakenteellinen data (*Structured Data*)
- Reaaliaikainen web (*The Real-Time Web*)
- Personointi (*Personalization*)
- Mobiili web ja laajennettu todellisuus (*Mobile Web & Augmented Reality*)
- Esineiden Internet (*Internet of Things*)

Näiden Internet-trendien aseman ja roolin voi ennakoida vahvistuvan myös vuosien 2010–20 aikana.

[2] http://www.readwriteweb.com

1.1.12 Jones, Tim, Future Agenda

Future of Media

Dr Tim Jones: Programme Director - Future Agenda

Looking at the probable strategic, technological and behavioural changes occurring over the next decade across many areas, I see that there are perhaps three main shifts for media to address by 2020. While it is easy to see some of these as unique to the media industry, they are also big issues for other sectors and so are topics that, in 2010, many people are already starting to think more deeply about. As such the catalysts for change that drive them may occur first in other arenas and then migrate to media. These three shifts are:

Choice Curators:

The traditional view of the media is one of choice editor – the organisations that choose, on behalf of the audience and the shareholder, what it is that is most important or attractive - and hence what should be shared and what should not. With the explosion of pro-am content across multiple access platforms, the ability of publishers, radio and TV companies etc to influence what gets shared via more open channels diminishes. Instead of an editorial role deciding what to share, over the decade they will shift to one of being the curator of what content is made available and what content consumers are most interested in: As the endorsers of particular stories, blogs, images etc, the media industry will shift to become 'choice curators'.

End of IP:

Too many organisations today are in a bubble where they think that copyright matters going forward. Intellectual property was created to provide a mechanism for the protection of knowledge and then became a vehicle through which ideas and content became a tradable commodity. With universal, global connectivity mixing with multiple open source movements and pervasive 'free' access, by 2020 there is no longer a role for IP. Knowledge itself has become commoditised at the same time as information and data provision has growth exponentially. There was no clear business model for 'beyond free' so, as companies first struggled to retain control of their content in 2011 and 2012, the reality dawned. Competition in 2020 is not based on who owns what content but on who is most effective at sharing it with the audience that matters most.

Cocktail Identities:

The ability to target media output to specific consumer groups in the 20th century was based on the premise that we knew who people were, or at least what socio-demographic or attitudinal set they belonged to. As social networks became a forum for mass experimentation and individuals commonly had multiple profiles on facebook etc, each aimed at a different community and each reflecting a different real or imagined aspect of the individual, so, by 2015 'knowing your customer' became an oxymoron. During the 2010s, FMCG companies, advertisers and media organisations all got used to the fact that most people now have cocktail identities – an amalgam of different faces to the world that they effortlessly slip in and out of during the day as they travel their 'youniverse'. A consequence of this was then end of focused targeting of products and services and a switch to providing a palette of options through which consumer can proactively navigate as they wish, driven by whichever identity (and personality) they fancied adopting.

While there are other drivers of change from technology migration, mass personalisation and new business models for co-opetition, right now, these are the three issues that we see as having greatest impact on the media industry as a whole over the next decade.

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1.1.13 Kirjonen, Sirpa, Sanomalehtien Liitto – Finnish Newspapers Association

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Media landscape 2020+ from advertisers point of view

All major traditional media (printed newspapers & magazines, tv-channels, radio, outdoor, cinema) are still available and also used in special projects. But they are not the valid usual way of communicating with consumers and other customers.

Most important is “the second world” in witch people are connected everywhere every time. All media are also in that world, but there are no such limits that people separate media from media. All are in one “second space” and people are moving, surfing, staying where they want to use their time, or are looking for information or discussing with their friends, colleges or even customers. There is not only physical world but also the “second/virtual world” is everyday option. And used as physical world. Almost only you can not be satisfied by the second world is eating. Of course you can “eat with your eyes”, but not the real food. And of course you have to sleep and use toilet in the “real life”. But you can get love, money and have good time with your friends also in “virtual life”. This will also change peoples way of using goods and other stuff. You don´t have to have all that what you had in 2010. For example tens of shoes, clothes, furniture, books. You can travel, have emotions, be with friends at your pc/mac/you name it.

Maybe this will change more production and producing of goods than media itself. But as long as media will get most of its money from ads, this will change the world of media. Advertisers will have their ads in relevant places. Not in special media. This means in the “second world” where also more and more product or should I say “solutions” or services are also used. Be there where people are. There are no more such borders between media. People are surfing and using sites, places, groups etc without “borders”. They don’t even know where they are all the time. But ads follow them.

Traditional media has to be very interested to see the change, to do changes very quickly, to learn from feedback, to co-operate with others – and especially with people.

1.1.14 Koponen, Johannes, Aalto University School of Science and Technology

Media Business Model Scenario 2020 24.4.2010

Because of successful implementation of micropayments in Facebook in 2017, newspapers and magazines are now able to charge small amounts. Some user activity groups are against this and the public opinion is against blocking entry to sites containing only news. This leads to very interesting business models described below.

In the dawn of the 2020s it became clearer and clearer that content and platform are two very different things. A rather rapid transformation took place, as small and medium sized media companies tried to find their core competence either from their well-branded platform or from their honored content-production. Also another separation was taking place: the separation between fast and slow content production. This lead to separation and differentiation of media companies on another axis of production: speed.

Thus, four different kinds of media content producer groups were born. Although they were not easy to separate in certain cases, and they were clearly interdependent, very few companies maintained same brands in every four groups. The groups are slow-platform, slow-content, fast-content and fast-platform.

Slow-platform-focusing companies concentrated on finding interesting content from different sources. Their business models are based on identity creation as they charge for sharing the content

Slow-content-companies are oftentimes funded by donations. Few of them are more like art projects than businesses, and some focus on scoops and political activity. It is in their interest to try to spread the content they produce to lots of people – however only entertainment industry is able to make profit out of content snacking.

Fast-content-companies are a major player in the 2020s but they are losing market share fast. Mostly fastcontent –companies are good old internet-news companies that try to keep the pace of the social news services. These companies are not able to protect their news from social aggregators and thus they are not able to generate enough ad-cash to keep the business running. Although they have a vast number of readers, many of these companies are shifting slowly towards fast-platform-companies or, in case they don't have a good brand, just fairly good content production, they fade away.

Fast-platform companies are companies such as digg.com and reddit.com. They use their brand to collect large number of people to their sites and this public they have they use to separate interesting news from the less interesting rubbish. Unlike slow-platform companies, they don't generally support only one customer segment. Unlike other groups, these companies can make revenue out of the advertisements. Many old media company decided to focus their portfolio towards fast-platform, opening their content production partly or fully to the public.

From the customer perspective, not much has changed, really. Customer can surf to, say, New York Times front page functioning primarily as fast-platform, and see ongoing news. Clicking news would give the user not only the summary of the happenings written by a journalist, but also live-twitter-feed, information if some Facebook friend of the customer in question is involved, and some related blog posts in the blogosphere. Elsewhere in the New York Times web site there are also slow content, taken from the blog of an author and published in the site with the name of the author. This content can only be shared and copied if the user has signed in and paid the micropayment. Thus, if the user wishes to inform her friends that she is interested in this author, she must pay a very small fee to NYT, say a quarter of a cent, or find the author from the web by herself.

1.1.15 Kuikkaniemi, Kai, Project manager (S3 and Emokeitai), HIIT

Next media 2020 Scenarios, User and Audience Behavior

Search won't replace browsing. There are multiple ways to discover media (WOM, geolocation find, browsing, forums etc..) like today. Search is important but there will be multitude of search interfaces. New users have better skills in search. Searching will be thought in school more.

Media consumption will bypass 100%. The whole concept media starts to be cumbersome especially when we are talking about outdoor media, which will surround us in many places. Are we consuming it while we see it or hear it? Also at home, decoration and media will converge (next generation of digital photo frames, use of displays as a wallpaper). Media, media service, interface, device, what is what? Media is primarily a service, and it is consumed through interface with some device, which might be 100% integrated to the content. There is "passive media", but it will be distributed through digital channels, and there is always out-media experience (like in-game vs. out-game experience), which is interactive (social layer, comments etc..). So for example, we will have passive music songs in the future, but the service is always interactive and digital. TV as we know it will disappear some day aroud 2020 completely, but we will still probably use DVB bandwidth for distribution within net-connected interfaces, especially for sports and game-shows. Digital natives watch movies and listen music. Some multitask at the same time, but for some it is cool and immersed to be immersed. What happens around the media experience is a different thing.

Media literacy plays a huge role. Not all digital natives are skillful media consumers. Some young people are scared of going to virtual worlds and feel isolated. Parents have significant role in supporting kids new media adoption. Digital divide won't be based on age or economic background, but is a combination of kids personal tendency and support networks (parents, school, peers) help on adoption new media skills.

In 2020 general media consumption statistics don't serve any more advertisement measurement purpose (advertisement impact is calculated case by case) and for this reason media companies do not share their audience behavior and penetration. We will have less-and-less general information about how people consume media, and what is popular or not. Also people's media consumption behavior differs a lot, much more than today. Making general statements is hard. Continuous research on media consumption is important.

Massive sports events and national celebration still bring people together. Otherwise we will have less and less big synchronous media consumption events. However, even 10000 simultaneous media users can be a mind-blowing experience when the audience interaction works in an optimal way.

Communication and media will converge. Discovering new media and new digital services takes place primarily through WOM (directly or indirectly). Facilitating WOM is important skill for media companies, and they use it actively (not only voluntary for users). Reading / managing WOM facilitation is important skill for users. Consuming media is social, but the social part is often facilitated through media also. People rarely gather together in front of same device to consume the media. Also it is common that there is multichannel consumption of sports events (one device for video, second device for data, third device for discussion etc..).

There is some degree of personalization, but this won't be a major issue. People do not like to decrease their agency when they are consuming media. They prefer to be in control, so

automatic adaptation is not desirable. However, recommendation systems are important. Media is also a proxy for monitoring own behavior. There is a more synchronous dialogue between media content and user, instead of automatic one-way adaptation (intelligent machine/media scenario).

Measuring experience is important since it is not only the quantity of media consumption that is important, but the quality becomes more and more important parameter for content producers and for business operators. Primary way of measuring the behavior is system metrics. We will have several companies profiling users based on system metrics. There might be also companies that do integration of profiling based on different systems. User data analysis expertise will be important issue. This is a major privacy issue. Also other methods will be used actively.

Next media 2020 Scenarios, User and Audience Interface

Visual interface won't replace text. RSS will be there, but so there will be many other web-based stream technologies. Real-time web is important addition to the current web technologies, especially is case of active media consumption episodes. S3D and HD are available but not compulsory or pervasive. There will be multitude of standards and modalities used parallel. S3D is addition, but it will be probably significant only in high quality immersive video, gaming and data intensive collaboration.

Outdoor media will be digitalized. The financial equation for replacing billboards with digital displays is simple and the threshold is getting closer in many places. In 2020 digital billboards are commodity. Some of these public displays are adaptive and interactive (indoors, walking areas), but especially large displays for drivers remain mostly passive and with static images due driving safety reasons. Each display is a unique web-channel with real time web component and this way the advertisement is linked to the purchased point. Interface link between public displays and web can happen either with image recognition, geolocation links or just simple URI codes.

Radio is a odd thing. There are some analog radios still 2020 because people like them, but overall music and audio consumption will be spread around. Some people prefer download, some streaming, some use mobile systems and some use it only in cars. Probably discussion channels will be more popular than currently. There is no one method to interface with audio and music. Also LP's remain popular. CD's will be marginalized to same level as LP's. But neither will disappear completely. Event audio streaming is common.

Event based media is popular. This is done mostly via public displays, speakers and mobile devices. Steaming these events happens via web directly without gatekeepers like big media companies.

I do not believe in convergence at all. In 2020 average Finnish person has probably around 10 devices that can be used for media consumption. If some scenarios (media devices where packaging, hardware and content merges) become reality, one individual might have close to hundred devices. Interoperability is an issue, but probably stardards such as Wifi, Bluetooth, USB 3 and HDMI are sufficient.

Next media 2020 Scenarios, Media Content

Blogging, crowdsourcing, UGC in general and professional media converge. Parts of being a professional journalist means that you are able to initiate UGC and crowdsourcing campaigns. Your primary means of communication with your core-audience is a blog type interface. This is the way how you make your name visible.

People pay for local content. Most of the media will be localized for higher reach and better integration of advertisements. Non-profit and government news organizations are not dominant but private sector and professionals are still gate keepers, but content is more interactive. Big part of daily routines goes on harvesting UGC content and picking up cherries from the vast pool of nonsense comments. Advanced user rating system don't work in most of the media since they are not that important for people that they would spend time for doing proper peer-rating (like in Slashdot where it is already breaking apart even tough they have critical mass). Combination systems of expert edit/moderation/content production, and UGC will be dominant, and is the only way to achieve high quality in most of the media domains (not all still).

Grassroots and global scale are converging continuously. People identify themselves through the magazine community and the national borders will be partially broken apart (but not totally). Still 2030 language is the biggest common within the users of one media brand (at least in Europe). People consume actively 2-3 daily news brands.

Professional media is already a major cash cow, and its significance will keep rising in the future. Also matchmaking is important media service that merges with news media and TV-type media.

Advertisement will stay as a dominant revenue stream. There will be multitude of different types of advertisements. The industry is changing continuously and finding new formats. Due to the fact that there are no standardized measurements of advertisement impact and reach in future media environment, advertisers prefer interactive media because it is easier to evaluate its performance (even tough the advertisement content wouldn't be consumed interactively). This will be one of the drivers for adopting interactive systems for also traditional passive content distribution. Also, there are many horizontal actors who sell and create advertisement content. Overall, media companies will rely on multitude of revenue streams: subscription (yes, there will be premium content in some cases in the future), advertisements, virtual assets, value added services … like today this list stays the same, only expands and the revenue generation and content only merger more than before. Individual journalist and content creators might need to pay more attention how the content they are producing might generate money.

Next media 2020 Scenarios, Gaming

In 2020 the term games (gaming, playing, play) as we know it has exploded and being replaced by new subtitles, which are more often used in daily lives, and convey more practical message. Games and playful content are pervasive, and like video or pictures also "gameness" is part of most of media content. It is not that much of question do you do it or not but how do you do it. Border between concepts game and interaction also blurs.

This follows that game interfaces (practically already today) are all types of interfaces: from advanced sensors technology, voice, gesture recognition to old school joysticks (which have outdated already quite some years ago). Stereoscopic interfaces are natural and easily adopted

option if needed but not a necessity. The biggest breakthrough will happen when current video content, book-like content and event content will have interactive components, especially when interactive parts are not add-ins but a core component of the original design and content idea. However, this will take some time. Interactive massive events are reality already today, but there is many content side challenges (we need to teach creative minds to use new technology and audience to feel comfortable to participate), which will hinder the adoption for ten years or so. Currently we have interactive video programs such as Idols and others. The interaction bandwidth and reactivity is poor in these cases. We will see new formats emerging, but again the development is fairly gradual. The biggest challenge is to manage large scale audience interaction so that individual participator will receive adequate feedback meanwhile the overall experience remain comprehensive.

Educational content will be augmented with interactivity, which is often playful. There are two main categories: real-time educational content with teacher and peer-students, and offline (single user or only comment level UGC) interactive educational media. The content dynamics, distribution and adoption differ significantly in both these groups. Real-time event education content is probably becoming popular later, but can have dramatic impact. Requires skillful teachers and syllabi that are for example focused on project-based learning. Offline (or single user) content is already here, and development is more gradual.

Political discourse, group working, simulations, and decision-making will all be influenced from lessons learned from game designs and game interaction. In 2020 we will have real time CSCW tools for performing these activities and in some cases we call this interaction gaming. It is more content and case based decision whether to call it a game than something that is based on the content structure and interaction dynamics. For example, decision making systems in some high level corporate and government functions are probably not called games even tough the interaction clearly is similar to game systems.

Some important questions for the games business in 2010-2020 are following:

- How will AR/location based-games merge and who will be the dominant players. This will be huge market opportunity and is glooming already (Foursquare etc..). Here gaming and other content will also merge. Game interaction might be primary way to create content, which is then passively consumed by others.

- Gaming meets open innovation systems. There are some weak signals that open innovation systems could by important in future. Successful open innovation systems probably requires some kind of game interaction and social media component. None of the current systems are engaging enough and have achieved critical mass. Open innovation system that reaches critical mass might have dramatic effect on how we structure our work in many knowledge intensive businesses (in practice all businesses).

- Consoles as video distribution channel. Game-like environment is ideal for video and music type content distribution (location in home, high capacity to do video encoding, 3D enabled, less piracy concerns due to closed OSs and online environments). There are already hints that this is happening (sports distribution through sports games, sales of music game content surpassing same artist sales in other channels…). Will current generation platforms achieve significant role in video distribution business, or do we need to wait for next generation (2015), or are new players emerging (synthesis of game console and set-top box or cloud based systems).

- Next biggest MMOG after WOW. WOW is not for ever. It is huge. Next one will be even bigger, more immersive, and more pervasive. But what it will be?

- Mobile multiplay is not yet popular. There are good reasons to expect that mobile multiplay will be huge, but most of iPhone etc.. games are still single play games.

- What is the primary distributions channel for educational interactive content (incentive structures). Same also for group work / workshop media content.

- What will happen with advanced biosignal sensor game interfaces. New sensor systems can read various biosignals easily (comfortable), and enable new types of game/interaction adaptations and biofeedback for increasing self-awareness. Game based neuroplasticity training can dramatically change optimal performance training in sports and other high-performance domains.

- (domestic question) Position of game education in primary schools, high school and universities. We have now the first masters programs in universities. This is a start but quite small thing. Music schools are pervasive and for all ages. Video making is not equally popular, but still spread to many domains. Can we have game education in primary schools, game camps for kids, art teachers teaching game design basics. This might have significant impact on teaching future generation to tackle the future challenges. In this case also interactivity and gaming go hand-in-hand.

Next media 2020 Scenarios, Technology

Web 3 and web 4 will not be significant concepts. Web 2.0 is already blurred enough conceptually that web 3 and web 4 doesn't make any sense. Real-time web (XMPP, google wave type things) might be next radical thing with web technologies. Big question in web/Internet overall is that can we finally adopt IPv6 at some point, and after that can we do some dramatic changes in the underlying structure of Internet (for example publish subscribe type architectures). Good things like multicast and IPv6 have failed basically and been replaced by "intelligent" nodes, gateways and proxys. This makes is good for vendors because they can sell more. Software defined Internet (as software defined radio in mobile) might be utopia. The fact that Internet structure will not probably change will hinder the development of Internet of things. We will see new pervasive internet based architectures and more and more devices are connected to Internet but this integration will probably take place (at least up to 2020) through higher layers in the network stack (hence software platforms, cloud resources and applications).

Ipad happens. In three years this form factor will be widely adopted even tough it doesn't make currently sense. The bright glow in people's eyes (including mine) when they are using it is the evidence. I want one even tough I don't need it. Probably tablets and e-reader market will converge. This won't compete with laptops or smartphones but might compete with notebooks.

3DTV will come, but it is not a major thing. It will expand the range of video content from very low quality to high quality. Not all content will be HD. HD is just an option. We probably won't see UHDTV, 4k or any other steps beyond HD at home any time soon. Overall, like gaming also video will become insignificant title. All is video and then again nothing is. New titles will probably emerge.

Sensor technology will expand. Playful and game content will spearhead the market adoption in addition to health-care services. Self-training / self-awareness application require more development and society needs to adopt on using them. The basic idea is not complicated, but requires lots of practice and fine-tuning.

Big question is whether technology and content stays on separate paths, or will we see more convergence than today. In practice, 2020 it is feasible to manufacture HD level video distribution computer as a complement to some big TV-brand, sports league or MMOG subscription. Proprietary media systems for content specific (you buy a DVD box look-a-like and connect that directly to your display) needs could increase usability, enable effective business models and block piracy. Then again, this model requires some big players to start working on it soon. Wii is probably the closest example of anything like this, since almost 90% of game revenue in Wii goes to Nintendo. Also Guitar Hero's and Rock Band's are an example since they require dedicated controllers. Anyways, in future we will have cheap hardware, and merging hardware and packaging of media content will be feasible option.

1.1.16 Laukkanen, Ismo, AAC Global Oy

Media 2020 Scenario
Ismo Laukkanen, Development Manager, AAC Global

Social Values

- Media consumption will be based on mass customized services targeted for different consumers and user communities. Social networks and semantic web will change the way of searching and consuming information.
- Content sharing, co-creation and resuse/mashing will be important part of media consumption
- Libraries will be in important role but the role will change into information sharing centers and integrators of information services.
- People are still interested about news and broad information which is easily accessible
- Networks and virtual communities will be in more important role, because new concepts for virtual working have been developed.
- Media literacy will be in an important competence

Social Media

- There will be more professional bloggers because the organizations in the newspapers and magazines will be leaner, same content will be reused in different channels and there will be lesser professional journalists in the organizations. Content co-creation is utilized more and multichannel publishing creates synergies. On the other hand the "digital natives" studying journalism are more interested in blogging and using social media, also tools are easily available and more advanced.
- People are having digital identities which are transparent in different social media services
- Content co-creation and sharing will increase the role of informal communication which will decrease the users in the media company sites.

User and audience behavior

- People will use more time for the media consumption in the future but the same channels will be in use. In homes media channels are integrated into tables/walls replacing paper based media. The convergence of media channels integrate all different services to different devices e.g. TV can be used for web browsing, people are more flesible, because they have more choices e.g. for watching the news either by TV, TV/web archive, www, eReader or mobile. Personalized profiles allow personal level global information retrieval using search agents.

User and audience interface

- Ubiquitous computing integrates the interfaces into environments and there are new interfaces utilizing more senses. Virtual and physical world will converge and there will be new services, new working concepts integrating virtual spaces and physical world
- Learning and training will be based on just-in-time information sharing which is carried out in communities.
- Companies will utilize different channels for communication and user/customer/supplier communities will be in important role in communication. Social media is utilized in expert forums which will integrate information sharing and collaboration.

Markets and media landscape

- In media landscape there will be new companies based on eCommerce. New rivals for media companies are equipment manufacturers like Apple, Nokia, who are developing new services and user forums. Open innovation is utilized more in the product development of the media services.
- Media companies are operating in ecosystems integrating content development, sharing, advertising etc. For customers the big companies can offer the customized solutions based on integrating e.g. web services and traditional print media.
- Medias role in the future need to be more “aggressive” and because the society is more transparent, the different news are available globally in different channels. Corporate governance and ethics will be in more important role because of transparency.
- (Digital) content will be accessible in different service levels and users can choose whether they want to buy just certain pieces of information (transactional customers) or whether they want to buy yearly service fees. New models based on cloud computing and SAAS (software/content as a service) will emerge.
- HR practices will be based more on project type of working and short term contracts. Companies are competing harder of the best talents.
- New media services will be based on more personalized and masscustomized cross-media.

Media content

- Professional journalism and media brands will be in more important role and content will be more media rich. Local journalism is part of the media company ecosystems and the local news are integrated into profiled services.

- The role of wisdom of the crowds will increase but professional journalism will still be needed. New concepts combining professional journalists and communities/crowdsourcing will emerge.
- Paper media will have higher profile and it is targeted more for elite customers.
- Freelancers will be in more important role in the future and “project type of working”

Gaming

- Edutational use of gaming and simulations will be in more important role of learning. Also new learning environments include 3D workspaces bridging real and virtual environments. The learning contents are more adaptive based on learning styles, preferences and level of learning (adaptable content).
- Games are integrated with other media services, bringing more users into web sites.
- WII type of physical interfaces will be in more important role as well as augmented reality in gaming

Technology

- The convergence of technology will integrate more and more devices into Internet. New eDevices combine the best parts of paper and computer interfaces.
- Semantic web will help searching of information and there will be services for life recording and follow-up.
- Intelligent technology will follow our daily routines and there are concepts for keeping the energy levels at optimal stage. Different medicines are used for boosting the daily performance.
- There will be more intelligent services utilizing location information and different medias / advertising. Blood pressure, stress levels etc can be optimized and life is easy ;-)

1.1.17 Li, Man-Sze, IC Focus, UK

Markets and media landscape 2025

By 2025, what is currently construed as the media sector will have disappeared. The Internet will become the platform for the conduit of content. Content will become accessible via a large variety of devices and means, many multiples of what are available today. There will however be only a handful of main interfaces to the content, including multiple new "Webs"; these will be controlled by a small number of dominant parties.

There will be complete fluidity and cross-over between what are currently known as the ICT, content, business and consumer markets. The gatekeepers to these markets – those who control the interfaces – will have near-absolute authority over the content that is available. What is available is also what people rely upon to go about with their daily life and what organisations rely upon to go about with their daily operation. "Walled gardens" will become so pervasive and so vast that they constitute the full reality for almost everyone in the "civilised world"[3]; trust and privacy issues at the beginning of the 21st century have become quaint relics of the past. Certainly, there will be pockets of contents and activities outside the walled gardens, perpetrated by self-styled revolutionaries, dissenters, social dropouts and the like. These will be tolerated so long as they pose no risk to the legitimacy of the mainstream.

Work, play and daily living will have fused. Content will be catering for human experiences as a complete package. Of course multiple packages will be on offer, but there are no real choices as such. This is because people's social and financial conditions and values are already aligned with the package that is most "suitable" for them; in other words, people choose what they are expected to choose. Moreover, within the chosen package, they seemingly have total freedom to do what they like, ignore what they don't like, vote on or even directly contribute to the kind of contents that they would like to receive and consume. Few will question about control – "control" is meaningless where those who are supposedly subject to it do not perceive and *believe* in alternative narratives. There will be an abundance of self-organisation of interest groups, social networks, communities both virtual and "real" (yes, people still physically meet up!), and so on. These however take place within the individual's reality as experienced through and via the content package.

Who will be the gate-keepers? Ostensibly, these are conglomerates and other "not-for-profit" / "do-no-evil" outfits with deep tentacles, powerful national governments brokering and policing trans-border governance, and various combinations there-of. Each will be a vast alliance of interests that span the globe. But these are alliances without a human face (other than the pretty public face that is served up for mass consumption); who are exactly pulling the strings will be impossible to ascertain. There will of course be rumours and gossips; and some people will believe that one or more giant machines are behind it all. The more learned may have dim

[3] "Un-civilised world" will exist but as the people there are disenfranchised with no access to digital living and no entitlement to the trappings of modernity, they do not quite "count".

recollection of “singularity” or even AI of decades past. But how do you question that which is not known, and not knowable?

And what has become of “knowledge”? If knowledge is justified true belief, then there will be knowledge aplentiful. Just like today, there will be a bewildering array of parties – from august learning institutions to gurus of all shapes and stripes dispensing knowledge and advising on the best means to attain knowledge. Within the walled garden, competition to the “true” sources of knowledge will be intense and cut-throat. People will be aware, even more so than today, that the acquisition of knowledge is the passport to power and success. Nevertheless, they continue to complain about information overload and seek out the latest filtering mechanisms.

Looking back at 2010, some people may marvel at the changes that have swept across the media landscape. But for the majority, the road to 2015 will be more of a natural evolution than a radical transformation. There will be competing scholarship to explain how we have reached where we are. There will also be speculations on what we might have missed. Scenarios for 2030 will be solicited and produced.

But, on the whole, everyone will accept the situation as-is and reach for their personal sense-and-mood activated device to scan for the next entertainment show, with 100% virtual immersion guaranteed (or your money back).

1.1.18 Lindqvist, Ulf, VTT

The Finnish Media Markets and Landscape in 2020-2025

- There will be a distinct separation between different cathegories of media: lean-back and relax, addicted to you, play with me, strict information, dramatic details, super quality. These are the attributes readers still are ready to pay for.
- Media incomes comes from ads, subscriptions, copy sales, access fees, additional service fees and public support. Some sort of media tax may be used to support multivaluable media. In addition political parties and organisations will support their own media.
- The news content consists to 75 per cent of inputs from readers.
- There will still be a public service media company, like YLE, but with strictly regulated functions. Obviously, also this company will use much content materials from consumers.
- All news are available for free, but media companies must still offer them in order to keep their audience.
- Magazines will still remain as a strong media, but it will be available both as print, on-line and mobile. It will also contain additional service, like games, amusement etc. via hybrid media elements and augmented reality.
- Many new magazines with specific content may occure for shorter periods.
- Personalisation will be made via hybrid media links, which gives the readers access to special information and service.
- Advertisers do no longer by volume or space, they require contacts to clearly defined target groups. To keep their advertisera media compnies must offer well defined consumer groups.
- Advertisers do not pay for space, they pay only for measurable results.
- Global media actors will play a minor role in Finland, since the market is small and culture barriers are high. They might, of course, become shareholders in Finnish media companies or introduce well established international brands on the Finnish media market.
- For the younger generation English will obviously be a second mother tounge, and the demand for media in a national language will decrease dramatically.
- In the media landscape the winners are the net and the mobile media taking over the functions of the television and the radio. The loosers are the traditional newspapers, unless they can create new attractive products utilising their archives and information flows.
- Google and viral networks (like Facebook) will obviously take over a big share of the advertise market, since they can offer the best contacts to well defined target groups in well define contexts of buying decision.
- Books, including e-books, will obviously remain an important media. E-books can easily be updated and are ideal tools in training and education.
- Media companies can find new markets in e-Business, since they already have the contacts to the readers/consumers. However, they must then either enlarge their service supply or form new strategic alliances with vendors.
- New players will appear in the media landscape, partly KIBS (Knowledge Intensive Business Service companies), offering special and targeted services, like games, amusement, special information etc., disrupting traditional media business.
- New companies commercializing UGR (user generated content) will appear with new business models.

1.1.19 Nadel, Ryan, Centre for Digital Media

When Apple Owns the New York Times

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By 2020 everything will be free. Well, not everything but media things, music, movies, news, books. People love media, we surround ourselves with it, we talk about it at dinner parties and on dates, we define ourselves by the media we consume. You are what you eat best describes our relationship with cultural consumption. Media has become so essential to our lives, a fluid part of every aspect of a day, we treat it like air and water. But, like air and water, we don't want to pay for it directly.

Media used to be a physical commodity, something sold in special stores that came in packages that took up space in our lives. Media in the digital form is now totally ephemeral; it is an experience rather than an object. The thing that takes up space is the device we use to consume.

But, like other basic elements of life, light, air, water, we don't want to pay for media. Our need for it feels so primal that we feel we have a right to it, a right to access it for free. By 2020, there will be legal doctrines outlining a citizen's right to free media. This is already starting to happen with digital literacy and broadband access being declared essential to successful living in Europe and the US.

Media, unlike air or water, however, must be created by humans. Creation is expensive. So how are we going to pay for our collective media addiction if we aren't prepared to drop a couple dollars for every song we download or book we read?

Our love affair with media grows with the ability of our devices. The faster the internet the more media we can access, the smaller our devices the more places we can consume in. We are ready and willing to pay for the devices that give us access, that provide the platform. People line up for hours to purchase the latest device but those same people don't want to pay for the content. This phenomenon reveals our deep affection for artifacts and the monetary value we place on them.

From an economic perspective this creates an interesting dynamic, a symbiotic relationship between device and content. The device is worthless if there is nothing to put on it. The ipod would be a paperweight without music. The device makers, the ones who are making are fortune off of our media madness, are the ones that need

media the most. By 2020, it is the device makers that will become the patrons of the arts, the owners of newspapers, the producers of movies. They need media to make their products valuable.

The best example of this is the movie theatre. For decades people have been paying for the physical experience of the theatre. We don't pay for the movie but for the tickets to use the theatre, the device, where the movie is shown. So too, we will continue to pay for the delivery platforms, be it flexible portable screens for daily news or 3D projection systems in our living rooms.

The concern with this model, especially when it comes to news media, is a lack of independence between news reporters and technology companies. The technology companies have little interest in due process, transparency, truth. There is little honour in microchips. Imagine if a reporter discovers a financial conspiracy in the technology company that pays the bills. This reporter would not, could not report such a story. This new model of corporate sponsorship requires a public fund to support journalism and journalists as constant truth getters and tellers of society. This fund could easily be a tax on the device makers who will benefit from the production of high quality news media as this gives their devices more value and use.

Such a media ecosystem will provide a rich and sustainable canvas for creators to continue to express and for consumers to consume.

Ryan Nadel is a digital media producer and strategist. He is a graduate of the Masters of Digital Media program in Vancouver, BC and brings the experience of a writer for traditional print media publications and a digital strategist and producer for the U.S. Government and advisor to the Canadian Government on digital literacy. His journalistic work has been published internationally on topics ranging from arts and culture to Israel's high tech scene. He has worked with organizations such as the Vancouver Olympic Committee, the U.S. Department of Energy, and the Associated Press.

1.1.20 Nordenstreng, Kaarle, University of Tampere

Reflections of an optimist

Next Media 2020 Scenario contribution by

Kaarle Nordenstreng[4]

A year ago, surrounded by the global economic crisis, I wrote a short essay for the journal *Journalism: Theory, Practice and Criticism*, which had invited a number of scholars to contribute to a special issue on the future of media and journalism (Vol. 10, No 3, 2009). My essay[5] was entitled "A renaissance on the horizon!" and it not only demonstrated the durability of print media in the Protestant culture of Scandinavia but also presented an optimistic perspective amid the doomsday scenarios for print media and also for journalism:

> My point is a general forecast that in these days of global economic crisis people become genuinely interested in what is happening in the world – both far and near – feeding a hunger to know and to understand how all these events relate to their own life situation. Such a hunger renders support to quality journalism: a compelling need for reliable information on economy, environment and society. This reasoning is based on how individuals feel as human beings and social animals with existential needs – not as citizens fulfilling grand designs of democracy.
>
> So far we are used to associate individualism with the less the reputable side of journalism concerned with celebrities, scandals and spectacles. These have travelled quite well under the Western welfare conditions conducive to emotions and escapism. Intellectual support for this structural situation was provided by postmodernism including brands of cultural theory, which, by capitalizing on constructed meanings, tend to undermine reality.
>
> Now, after 2008, my forecast suggests, the party is over and we are approaching a new age of realism where people want to know and journalism serves this burning need. I see on the horizon a renaissance for good old quality journalism.

One year after writing this I have to admit that we have not witnessed such a dramatic shift from lightweight tabloid stuff to a serious search for reality – neither in media content, nor in audience orientation. Yet I do hold to the overall forecast and arguments above, and I wish to warn against the celebration of fiction over fact and emotion over rationality that seems to inspire many media scholars today. Such a celebration may prove equally short-sighted as over-emphasizing culture over economy in media studies. A new reality check after the global

[4] http://www.uta.fi/jour/english/contact/nordenstreng_eng.html

[5] http://www.uta.fi/jour/laitos/10.1177_1464884909102597.pdf

economic crisis is provided by the events around the Euro following the fabrication of facts about Greece.

My point includes the prospect that quality journalism continues to be produced not only for elite consumers but also for people at large – for the masses which do not disappear in the age of receiver-driven and search-based consumption. Likewise, the mass media with their public spheres will not be trampled by the social media and their semi-private spheres. Broad mass will coexist with narrow personal.

Audience behaviour has diverse patterns and seldom occupies a dominant role in people's lives. We should be wary of falling into (new) media hubris – a media-centred world view whereby tomorrow's society is totally mediated and people have little else in their lives but to consume and interact with media and games.

In this context, I see professional journalism to have a relatively bright future – next to citizen-based public journalism. My forecast is that the number of journalists in Finland will remain at its present level (about 10,000) but they will be increasingly self-employed freelancers – roughly half of them by 2020. Specialist gatekeeping and filtering will continue to be needed, however interactive the media and however sovereign the consumer. It is totally unrealistic to delegate the selection and editing or real-time news to search engines, except in very rare cases of routine services.

Although surviving, the profession of journalism will become more diverse – a development that has been going on for a couple of decades. An increasing share of media content – in old and new media – will be non-news, both light and heavy in nature. Pure news will be accompanied by more comment and contextualization – something that caters for people's need to understand the surrounding reality, both immediate and remote. In this process, the genres of media content will include increasingly narrative, even fiction-type elements which challenge the conventional rules of journalism and journalism education. This can be seen in part as a return to the early days of print journalism when it flourished over a century ago – another paradox of the online age.

1.1.21 Nylund, Mats, Arcada - University of Applied Science

New values of 2020

In 2020 an emerging set of new values are recognized as a coherent subculture that shape a new kind of culture, in Finland and in the rest of the world. Today, this subculture is already identified and described by social scientists in United States. In fact, 26 percent of the adults in the U.S. – 50 million people – subscribe to these values. Paul H. Ray and Sherry Ruth Andersson see them as one of the three dominating consumer groups in U.S., and call them the *Cultural Creatives.*

The cultural creatives reject conventional western lifestyle. They are disenchanted with "owning more stuff", materialism, greed, me-firstism, status display, glaring social inequalities. They are critical of almost every big institution in modern society, including media, corporations and government. They reject narrow analysis and are sick of fragmentary and superficial glosses in the media that don't depict what they see, or explain what they know from their own direct experiences.

Instead, they value authenticity and direct personal experience. They like whole process learning, rather than narrow intellectual approaches. They are concerned about the condition of our global ecology and the well-being of our planet. Both men and women among cultural creatives embrace what are usually designated "women's issues" and "women's values". Consequently, they want to see women in leadership roles. Cultural creatives have a well-developed social conscience and a sturdy, but guarded optimism about the future. Furthermore, they have purchasing power.

Cultural creatives buy more books and magazines, listen to more radio and watch less television than others groups. They are literate, discriminating, and dislike most of what is on American TV. They demand good information and have exceptionally good deception-detectors for ads and for misleading corporate or political claims.

Cultural creatives are aggressive consumers of the arts and culture. Often they are involved in the arts as amateurs or pros. They appreciate good stories and want views of the "whole process" of whatever they are reading. They are careful consumers, many times they want to know where a product came from, and they lead the consumer rebellion against things that are "plastic" or fake. Cultural creatives are *not* the technology innovators who buy the latest and the greatest in computers, but they are the leading edge on many cultural innovations. They tend to be innovators and opinion leaders for some knowledge-intensive products. Many of them are prototypical consumers of the experience industry, which offers an intense/enlightening/enlivening experience rather than a particular product. Examples include weekend workshops, spiritual gatherings, personal growth experiences, experiental vacations and alternative health care. The providers of these and other services have to be cultural creatives too, or they can't do it authentically. This is the big challenge for the media industry.

1.1.22 Oittinen, Pirkko, Aalto University School of Science and Technology

Contribution received but – on author's request – not published

1.1.23 Pienaar, Maria, Pienaar Consulting

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Social Values in Social Media and how it is changing media markets and landscapes

One of the main questions I have been grappling with in this new social media and über-connected social networked world, is whether people really change their consumption and sharing of media based on technologies, platforms and services available at the time. There is more and more evidence that our social values, and not our demographics are the main contributor to how we consume media and socialize - whether in the physical, or virtual worlds. Our social make-up matters more than what most marketers and technologists seem to think as can be seen from the pushback the social media companies such as Google and Facebook get whenever they try and ignore people's social make-up when they try and push new ad-based business models.

Starting with Social Values and the impact it has on consuming media, or social media, I must say I am starting to agree more with some of the view points of Phil Goodman, CEO and President of Genergraphics, and Dana Boyd, Social Media Researcher at Microsoft. Phil's views are based on years of research on the generational market research, where people's life choices, in how they socialize and the products and services they buy, very much depend on the generation they are born in and grow up in. This defines the mindset of their choices their whole life and is independent of the age they are in. This is very much at odds with the traditional demographic views which is based on tracking people's buying and consumption habits depending on set age groups and as peoples' age changes, their habits and choices change.

In order to start understanding how social value impacts commercial demand, supply and consumption of media products and services, it may be good to go back to the history of media and impact it had throughout the ages. According to a Wikipedia search on Media (communication), it is interesting to note that media and communication is very strongly linked, and has been through the ages. Communication between people and how we share information has become easier in the new digital age, and has also led to behavioral changes throughout various generations. Social Media therefore also refers to a communication process and interaction.

"Social media are media designed to be disseminated through social interaction, using highly accessible and scalable publishing techniques. Social media use web-based technologies to transform and broadcast media monologues into social media dialogues. They support the democratization of knowledge and information and transform people from content consumers to content producers." – Wikipedia definition on Social Media

In order to look at how this will drive the demand, supply and consumption of media products and services for 2010 and beyond, it is clear that an in-depth understanding of the mindset or psychology of the users will become key to drive the most successful services. There is a difference between needs vs. mindset.

So, does that mean that people's values and mindsets change in the increasingly connected digital media world? Not at all. Let's look at research on the Millenial mindset when it comes to using and interacting through digital media. It is interesting to note that according to Dana Boyd's research (Taken out of context: American Teen Sociality in Networked Publics), that teens mainly use social media to connect with their peers, yet, they are very selective in whom they share information with and whom they connect with. When it comes to what they share in these groups, they seem more open to the type of information they share in such a perceived "public" manner. Privacy, a social value, is still a very important value on how these teens share media and use these services. However, views on publicity vs. privacy differ between generations ("Making sense of privacy vs. publicity", Dana Boyd).

Privacy is still key to how people use digital social media services and will likely remain a main driver on how people consume media within the foreseeable future. This is also backed up by a recent study by Chris Jay Hoofnagle and Jennifer King from UC Berkeley (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1589864). According to the study, there seem to be no difference between how teens view social values such as privacy vs. their parent's view on privacy .

Media has always been very personal, and especially in the increasingly connected world, will still remain the very personal. People want to control how they interact and communicate in the physical and online worlds through media they consume and share. Peoples' views and values on personal content they share and ownership of the content does not seem to have changed. It is unlikely that the perception will change in the near future. This again opens up the privacy vs. publicity question. Social media changed the places and made it easier for people to store and share personal content, however, the views on ownership of personal content has and is likely not to change. People will want to control and like to remain in control of publicity vs. privacy of the content they generate. People still have very clear views on what information they share in which context and with which groups and how they share it. This is very clear from some of the recent push back on advertising and privacy changes by Facebook, Google and Twitter from their communities. This also posed and will continue to pose challenges on who owns personal content. Users still view that the content they create and share are their content, unless they choose to share it in a public way. Social Media companies view the content as their property – two very conflicting views that if aligned, will continue to draw and retain users, and when unaligned, have people flee from services. Contrary to Facebooks view on the "open" socio-graph, people pretty much seem to have social value views contradicting that and do not expect to see this change over the next 15 years. People may become less restrictive about what information is open to publicity, but will remain strict about private information not being mixed up in the mold. This is the same reason why there was a pushback to snail mail "junk-mail", then email spam and we are now just seeing a newer version of the same issue. People hate being spammed and have their personal information "sold" to third parties to use for commercial benefit.

Trust and privacy issues in the "open" socio-graph will lead to new business models and how people use the service. The socio-graph seems to be very much a "closed" socio-graph, based on people's preferences, and not companies just pushing the default "open" preferences. This will likely move more towards the mobile advertising business models, where users can

strictly control their privacy including availability of location information on an opt-in basis. This includes continue to drive changes in services allowing for more personalization and control of media content and how people interact with and share the content, whether personal or public.

People will continue to look for the personal touch and connection and that is even more noticeable in the younger generations. They will continue to interact and search for the content that fit their lifestyle, whether user generated, shared or copyrighted content. Teens (Millenials) have shown that they are very adept at navigating through the limitations of current social networks and social media sites to change how they use these services to adapt to their values and way they interact. Media content will continue to mash with people's life style and the context where they are at – place, time and perceived value within that context.

The volume and availability of information and media for people to consume will continue to grow exponentially. We are seeing shifts in models that people are relying more on their personal networks (personal socio-graphs) to find relevant information, and also more on recommendations within shared socio-graphs (friends of friends). Search will remain a main driver in finding relevant information.

Does this mean that people may get too overwhelmed and go back to "old" media such as snail mail and central hubs for information dissemination such as libraries to gain back some control and reach people more effectively? This will be determined by the value of the "personal touch", convenience and time constraints. We are likely to see some aspects, but in different forms to the older, slower, more personal touch media services such as snail mail. The context of how these services fit in within the digital media lifestyle of people is likely to be different to what we see now. We may see some aspects of "snail mail" media for personal events invitations, high touch services and notes or other areas yet unknown. The concept of libraries will be different and again could depend on the effectiveness and convenience of finding valuable information vs. personal time spent to find information in the abundant digital media world. The libraries may not take on the current known form of libraries, but likely will represent an online rendition of what we know today of libraries with "personal virtual librarians". This would be more relevant to personal search and research for information related to work or new products and services where there is a time constraint for delivery. This is in line with some of the growing work trends where outsourcing of even menial tasks are becoming and continue to become more relevant and people are willing to pay for these services. It is quite likely that people would be willing to pay a premium for these types of services. Refer to the trend around the 4-hour Work Week, Timothy Ferris.

Looking at importance, value and context of information, it is unlikely that information will become more "local" to a person's lifestyle (personal and business), and less about geography or their zone of influence. People's lifestyle connections are becoming less constrained by geographic locality, but more based on shared lifestyle and business interests. The trend is more to follow media and being updated on media in that lifestyle choices context. Non-valued lifestyle connections and influence zones will be less likely and won't be updated as much. How would this impact what people will be willing to pay for or not pay for? Payment models will remain to depend on perceived value e.g. high quality entertainment services will continue to provide value for people to pay for vs. other such as news. People are more likely to trust and learn from their socio-graphs (free information) for news. News will be followed based on informal views as well as formal published views from known, trusted media sources.

There is likely to be aggregation with main stream media (CNN, ESPN, SKY, Wallstreet Journal, Forbes)media companies but also a larger opportunity for more smaller media services based on lifestyle choices such as cars, sport, other. The main models for these news services are likely to be advertising based, although we may see a mix of various business models such as subscriptions or "pay-per-view" transaction based, depending on value and perceived timing of the information people pay for. Mainstream news is less likely to fall back into subscription models. The more likely model would be subscription services for companies that can help aggregate the information and media based on personal choices and socio-graph based recommendations – something companies like Netflix and Hulu seemed to have figured out extremely well.

The same argument holds for personal generated content e.g. photos. Photos, even though private, always had value shared with specific trusted groups of people e.g. family and friends. This generated good revenues for photo service companies such as Kodak for printing and sharing photos. This is not likely to change with digital media. Owning pictures is less likely to be outdates as it is personal, however, owning published music and video media will become outdated as the bandwidth will be there for more efficient streamed and on-demand services This is likely to change to personalized music and video libraries in the cloud, and potentially follow the Netflix model. Personal photo collections will be excluded from this as people would like to maintain control over their personally generated media and maintain control on how and who it is released to.

Companies that learn how to enable the "permitted" socio-graph (user-controlled "open" graph) will be the ones benefiting most in generating new business models and revenue streams depending on how they allow their users to link and share into other services and socio-graphs of interest. This will make the payment models more complex on how to collect and share revenues between different services and platforms, and as such this also represents a major opportunity for new technologies to emerge. The current payment models are not sustainable in this new environment. – it will be simpler from the user side, however, very complex from the aspect of revenue shared models between media and service partners in the ecosystem. Hollywood, and broadcasters will still remain to be the main producers and publishers of formal, published content, but they are less likely to maintain control of the distribution channels as distribution channels change into the networked socio-graph services. It will become harder to control how media is shared within the networked socio-graph world. People will go for convenience and value. If it is easier to share a link to where their networked connections (friends) can view published media at value for money, those services will continue to thrive. iTunes is a point in case. Otherwise, people will continue to find ways to bypass formal media distribution channels and share for free the content and it will become easier. Copyright will remain a challenge on how it is managed and enforced. However, these new distribution channels also enable new models for producers of original content to participate in the revenue streams and we will likely see more services emerge enabling quality media content production from non-traditional labels, media companies and broadcasters.

How does this impact the likes of social networking sites like Facebook and other? I don't believe large platforms will disappear altogether. Facebook and Linkedin type social networked services may however change into distributed cloud and device/desktop applications vs. being the form of "aggregation" point it seems to have emerged into. Perhaps the browser becomes the aggregation point again. Users may use multiple applications for sharing and interacting with private (privately owned and generated content) vs. public media (publicly shared and owned content).

"One size fits all" type services are no longer applicable and will be even less in the future. The successful media services and products will be the ones that understand these mindsets of their communities as opposed to only focusing on perceived demographic needs. The key will be to have a balanced view on both mindset of the difference generations using these services as well as demographics on use from these users. Better tools and research will be key in helping companies to navigate and understand their diverse communities. Business models will continue to be stressed as media companies try and navigate through chargeable vs. free services and we will continue to see a plethora of different business models and potentially new ones.

1.1.24 Rautiainen, Mika, University of Oulu

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Technology - what will be the next big phenomenon in computing?

The next phenomenon that will drive people towards new devices and novel use patterns will again be techno-sociological like the previous phenomena have been since the dawn of Internet in the 1990s. This new phenomenon will quickly become part of our lives due to recent and upcoming appearance of affordable technological enablers: large screens with natural multi-touch interfaces and powerful solutions for multi-modal interaction. It is likely that several companies have an intuition about the new use paradigm for this technology, or at least they are in the process of studying the observed weak signals and trends in the general consumer base. However, we haven't seen yet a solid offering that would combine devices, applications and services in a way that will push this new phenomenon moving.

So, what is this phenomenon? It is an intermediate step towards more ubiquitous, everyday computing allowing richer interaction through integrated computing hardware and natural interaction. In order to understand how it will affect people in everyday life, we need to look at the history of computing.

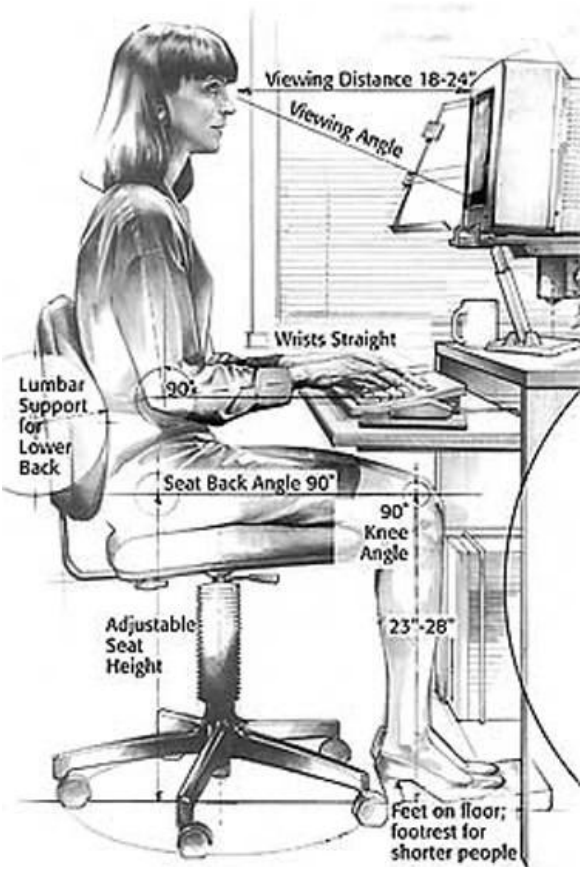

image is courtesy of Wikipedia

Our interaction with computers started from the development of personal computer in the 1970s. Personal computers were devised as tools to make our daily tasks more effective. Principal design guideline for the personal computer was making it *personal,* starting from the interaction with the keyboard and position of the screen.

Subsequent paradigms produced only slight variations to the original paradigm: laptops, video consoles, pocket PCs, tablets, netbooks, information displays and living room media computers were all based on the same principal design: personal input devices demanding uninterrupted focus to the information display during the execution of task.

This design, while revolutionary for task completion, has prevented the evolution of computing in direction that would support more natural activities in everyday human life.

Personal computers have always distracted people from face-to-face social interaction. At best the paradigm of individual use has enabled applications with indirect interaction: video consoles and computer games have facilitated interaction through an intermediary but simultaneously conflicted with the needs of natural interaction. Internet-era has further expanded the ways of virtual social interaction through community networks and related services, but that has not compensated the need for real social interaction. People will not learn away from this evolutionary trait.

Therefore, the next technological phenomenon that will attract people with the prospects of novel usage is in the devices, applications and services that allow humans to enhance and enrich their face-to-face social interaction experience better that the devices built around the personal computing paradigm. Therefore **direct interpersonal computing** will be the next trend in the development of computing paradigms.

Direct interpersonal computing will have following distinctive characteristics:

- **Device interaction is designed to minimize the distractions during the interpersonal contact.** Simultaneous natural interaction is supported in the devices. This will encourage rich interpersonal interaction:
    - All participants can manipulate the information on the device naturally, this is enabled e.g. by large screens with simultaneous multi-touch support, speech or visual recognition interfaces.
- **Information screens will be positioned unobtrusively.** Devices are positioned so that the center of attention does not change significantly when switching between the interpersonal and device interaction.
    - Tabletop screens/devices allow people to communicate naturally during photo-album viewing, browsing music archives for listening, playing digital board games, sharing interactive multimedia presentations (for example digital children's books) etc. In contrast, television as an intermediary distracts the natural interaction due to its presentation-oriented set-up (television hoards the focus of attention).
- **Applications and services will be designed to create added value from the interpersonal communication.** In the design of applications, involvement of many people will make the use of applications more interesting and/or efficient.
    - Organizing a shared photo-album is more efficient and enjoyable experience when the application allows sharing the efforts of categorizing, naming and tagging of images with friends and colleagues.
    - Multiplayer games allow people to perceive and share the game space simultaneously with everyone.

Courtesy of CNET Asia

Conclusions

The direct interpersonal computing paradigm will motivate consumers to purchase computing devices alongside of their conventional personal devices. It will also attract customers that haven't had earlier interest in the personal computing segment. With one caveat: device usability, as well as the service and application offering has to be tailored to support natural interaction processes and interpersonal contact must be central in the use experience. The role of the media industry (games and interactive entertainment, journalism, media creation and authoring etc.) is to accommodate and capitalize on the possibilities that arrive with the new computing paradigm.

1.1.25 Saarela, Janne, Profium Oy

CEO
Janne Saarela
Profium Oy
7.4.2010

Contribution to Next Media Vision2020

The wider and wider available selection of online content forces users to register to more and more services. Registering to many services earlier wasn't an issue for users but it now becomes an issue as online identity thefts and being reported at an increasing rate and users become worried of revealing information about them to many places. Users thus start asking for ease of use across various services. In addition users wish to make the walled gardens fall down and intelligently select the content they wish to view, comment and share independently where the content resides.

Media companies with their branded online experience will be losing ads as their primary revenue source as the users no longer visit their walled garden but consume their content in their favorite applications or Web sites or mobile phones. The branding of content might reduce down to 'Source: XYZ' where XYZ might give confidence to some users that the source is reliable. However, such sources could be individuals in addition to companies. Such individuals can be confirmed reliable by a social network of trustworthy friends who make such a statement.

There will be new business models which can based on the fact that user is in control, not the individual walled garden where the user happens to visit. Giving the control to the user might be analogous to selling intelligent 'remote controls' to a TV with 200 channels. The user does not have the energy to browse through the channels to find interesting content while the channel owners hoping to catch user's attention to make him/her stay on that channel as long as possible to expose them to as many ads as possible. The future 'remote control' vendors could provide the tool itself (e.g. software with a right to use license) or the tool as a service (right to use + access to 200 channels guaranteed kid-safe with personalized menu to choose the evening entertainment or news update from).

1.1.26 Sintonen, Kirsti, Acatiimi

Contribution received but – on author's request – not published

1.1.27 Sirkkunen, Esa, Tampere University

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NEXT MEDIA/VISIO 2020

Changes in media economics: The convergence both in technology and in media economy has lead in 2020 to a situation in which there are big hybrid companies (for example Google-News co) that are trying to dominate the global commercial media industry. On national level, these global media players are producing all kinds of content - also journalism. But there are some national players still left. In Finland the public broadcasting company is producing national content but with lesser resources than today. In addition, there also exist Finnish media companies that are producing content in Finnish. Some of them are operating on public or mixed private-public funding.

Local/regional news production in Finland is financed with advertisements, subscriptions and in some cases with public funding. This is due to the fact that advertisement income on regional level is no longer sufficient to sustain conventional journalistic operations. Pro-am models are used regularly in content production on local and regional levels.

Changes in user cultures: In 2020, media use is based on personal profiles and ubiquitous media which are used with various technologies and platforms. Even the printed paper is still around, but mostly for documenting deeper and more sustainable information.

The user interfaces are varied but the contents are available on demand very often on cloud servers. Although the amount of on-demand content has increased, we still have public broadcast content delivered free to all to give our lives structure and sense of shared experience. Deep rituals in media consumption do change, but slowly.

The new media ecology: Different genres of social media and professionally produced, content-based media exist side by side. Social media genres cover our personal and peer-to-peer communication, socialisation and entertainment needs, while the commercial media concentrate more and more on serving as our trained agents – bringing us reliable information which has been produced with transparent production methods.

Just one form of media work: The monopoly of professional journalism has vanished once and for all. Journalism as a profession has diverged into several journalisms. There are highly educated professionals who analyse the processes of economy, politics, culture etc. for small but affluent audiences. There are journalists who are opinion leaders and public figures as in the early days of journalism. There are sensationalist journalists and the paparazzi. Then there are journalists whose professional skills are in orchestrating public discussion on different sites and services. There are also amateur journalists and photographers competing with the professionals. And finally, there are occasional journalists, like bloggers, who can bring new issues to public debate.

Journalism is not produced solely in conventional media houses. For example, civic organisations or private companies can produce material that is in accordance with journalistic principles. In 2020 the borders between journalism and advertising, or PR, are often blurred.

1.1.28 Tiainen, Ilkka, Oppifi

Oppifi vision 2020

Fundamentally human life is the same as it has been for the past thousands of years. Slight change has happened because people in general are living longer. There are proportionally more 60+ year olds than ever in the history of mankind. Therefore there is more life experience to be shared.

People have become increasingly interested in local events alongside the global media driven youth culture. More and more the value of the wisdom of the old is respected by the young. Mostly that is due to the fact that the old had realized the value of using the media that was for the young - Internet. The communication link between the generations is found anew.

Technology on the other hand has developed rapidly. The use of Internet and other digital media services has taken a giant leap during the past ten years. New technology and digital content have been integrated into everyday life of elderly people. Digital content has for some time been presented ubiquitously – content is finding the user.

User interfaces have developed from the keyboard based writing paradigm into gesture based 3D user interfaces. It is possible to use one´s own voice and personal videos as equally usable input mechanisms compared to text. Scanning of old photos, regardless of the age and original format, is in everyday use for all. The creation of 3D replicas of physical items such as souveniers, tools and clothes is becoming reality for the common man.

Semantic analysis has developed. Content items in whatever format and context can be interpreted as taking about the same matter. Speech to text recognition and automatic language translations enable services to find similarities between eg. a spoken tale of a fisherman on Tahiti and a written story about a Finnish “kalajuttu” on Teno-river. Cross-links between services and standalone stories make it possible to create ever more interesting webs of services centered around particular topics, thus allowing people and companies to create truly international communities.

Game industry has broadened its offering. New types of computer game companies have been founded. Companies that focus on the educational games for the elderly. Those companies are evermore keen on concentrating on the values their products and services are conveying. It´s hip to play a memory game – a game that is about real events that have actually happened to someone.

For some elderly the use of game like recollection and lifestory services has improved cognitive skills and thus allowed longer more active lives, which in turn has partially helped authorities in balancing the public social services structures.

On year 2020 most of the people are browsing through real life stories on Internet based services. Increasing amount of people, mostly the grandparent generation, are actively storing their memories for their children, grandchildren, close friends and for people who have experienced the same.

Historians are increasingly turning into writing microhistories, where recorded history consists of the lifestories of you and me – everybody. *"What if Your life experience were part of the recorded history?"*

Hollywood, Bollywood, Chinese and European film industries have made the first Top-of-the-charts movies where authentic life stories of the elderly are forming the most essential part of them.

1.1.29 Tolvanen, Perttu, Sininen Meteoriitti Oy

Vision of media consumption in 2020: Stream consumption and the power of trusted peers – and how that could be a business model.

Premises: The size and influence of one social media platform has risen above others and the largest social media platform has introduced dozens of new premium services for the users. This platform is here referred as "Facebook".

User story: Annastiina

Annastiina is a 37-year-old woman living in Espoo. She has a small apartment in Olari and uses the public transportation to go work every day.

When it comes to media consumption she pretty much relies on to Facebook and what her friends and peers have recommended to her. She opens Facebook every morning from her television and watches the **PeerTV** which aggregates video material from street cameras of areas where her friends have been during the previous evening and what kind of video clips and tv shows they watched and rated.

The video stream is complemented with augmented reality technology so all happenings, status updates and events are displayed inside the video landscape right there where they took place. The visual experience is further enhanced by adding comments, ratings and related information that have been interest to other people who have seen the same content.

Usually Annastiina prefers the **PeerTV's "NewsReel" on demand show option** which shows a short multimedia reel of the video clips, points of interest and articles that her peers and friends had read and found interesting during the last day or so. Annastiina has a large tv screen and a small touch screen which she uses as a secondary device to navigate and pause the multimedia stream.

Annastiina just recently switched to a new **"FlexDeal"** with Facebook. Before the FlexDeal Annastiina had paid over 100 euros per month for having the premium features of Facebook. Now with the new FlexDeal Annastiina's monthly payment varies between 20 and 60 euros. The price depends on how trustworthy and interesting her friends and other Facebook users see the content items that Annastiina rates. Uploading and sharing new interesting content could even turn the tables so that Facebook would be paying for Annastiina. This is something that Annastiina has dreamed quite a long time and one of her friends has already had a few months where Facebook has paid her to use the service.

The biggest change in Annastiina's life has been that she no longer subscribes to different magazines, tv channel packages or newspapers. She has considered ordering the Facebook's MovieCard which would allow for her to grow her video clip stream and potentially earn

currency by commenting and ratings actors, movies and scenes. Few of her friends are active users of the service and they don't have to pay anything to watch those movies since they always give thoughtful reviews and ratings after they have watched the film – and some even make ratings and comment the movie while they watch the film.

Annastiina admires those friends who earn community appreciation through their ratings – although she thinks that the most active friends are not always the most insightful – but she understands that it is an important part of improving the ratings and earning more respect inside Facebook.

When on the move Annastiina usually just lets her Facebook-branded handset to display interesting events that are taking place near her or near her friends. This way she can easily comment to happenings of her friends and feel connected to them – **and earn more trust points by rating the stream content from her network**.

Description of events

Before becoming a fan girl of Facebook Annastiina was a regular reader of Helsingin Sanomat and women's magazines. As a natural people person Annastiina was very interested of the people stories and how different kinds of people behave and what kind of other people they know. Annastiina has always valued the people network what she has. **She has sometimes even though of it as a hobby – *to cultivate the network of people she knows.***

This network of people quite quickly became the main source of news for her when Facebook started getting larger attention around the world and especially after Facebook started showing results from their recommendation engine. After the recommendation engine more people approved to be shown results which were collected from other sources and overlapping networks relation to their own network. After this addition many users had also started using Facebook's search engine as their primary search engine for the web. Google was overtaken in popularity in a few years when users realized that search results based on usage patterns and recommendations of user's own network of people could be much more interesting and satisfying.

The latest premium features of Facebook also introduced a new kind of business model to Facebook: selling premium stream packages (which are packaged as a interactive set or in movie trailer style) of the information collected and filtered from user's own network of people. At the same time also a Facebook's own currency was further enhanced. Users could now gain more currency be being a trusted and popular source of new content and quality recommendations. Now more and more users spend time evaluating content they consume and giving different kinds of trust valuations to each content piece.

When Annastiina compares her understanding of the world to the situation when she was closer to her twenties she feels that she now has a deeper understanding of the world since the news she reads feel more connected to the world she lives in. **She understands that she might not know so much about the world as a whole, but she thinks the current style of news filtering is more meaningful for her.**

Consequences

1) **Amount of sharing has increased dramatically and large groups of people have turned from lurkers into people who actively comment and rate content** – and bring new content in – Although sometimes only by keeping their video camera on when walking to work…

2) **Trusted peers inside people's network have more and more influence to what is considered important in the world every day.** It has been evaluated that most people have 10-20 people in their social graph that together decide what their 200-2000 size network of people see.
3) Small proportions of people have closed their Facebook accounts and have started using traditional letters to communicate with each other. Also a new trend is rising which emphasizes privacy and the right to enjoy the world as it is – without other people filming and lurking your presence through electronic means.
4) There is also a rumor that Facebook is planning to introduce even higher premium prices for accounts that could be used with all the premium features but would not be visible to other users….

1.1.30 Trappel, Josef, Universität Salzburg

Next Media 2020 Scenario: Between Disruption and Continuity

2020 is not far away. It is as close as the year 2000. By the turn of the century the Western world had at its disposal the personal computer, Internet, e-mail, mobile phones, e-books (already in advanced generations), online media, Wikipedia, weblogs and Web 2.0. What we did not yet have was mobile Internet, Twitter, Facebook, iApps and Second Life. This brief listing of technology availability suggests a cautious approach towards any forecasting: Most of the technology that became widely accepted standards and social use over that ten-years-period was available already at its very beginning.

If this approach is projected to the year 2020 we need to start the analysis from what we have at hand today. Ten years means refinement, broader application and the move from specialists' use to mass use of technology. What we can expect, therefore, is broadband access to any home or person, by wire and mobile, user friendly access to network computing for broader segments of society and most likely some new applications from unexpected corners of the online world.

This element of unexpectedness seems to become the most predictable future development. SMS some 15 years ago and twitter some five years ago are good examples. Both services surprised both users and experts, in their simplicity and success.

By 2020, therefore, communication technologies known today are expected to increase their reach into additional segments of society; their ease-of-use will extend their range. Communication technologies will further penetrate social life, they will be better integrated in day-to-day procedures and their occasional failures will paralyze public life considerably. I do not expect any end of corporate power in the media and communication sector, despite all claims of business model failure (in particular in the print media). Krishan Kumar's claim from 1995 still holds that the information explosion „has not produced a radical shift in the way industrial societies are organized, or in the direction in which they have been moving." (*From Post-Industrial to Postmodern Society. Oxford: Blackwell*). Corporate media are likely to increase their ability to define the public space rather than citizen journalism or any other

form of social media taking over. Furthermore, I expect a clear-cut division between freely accessible standardized information and paid-for high quality informational services, irrespective of the medium to transport this information.

But what is most likely to characterize the coming ten years is the excitement – and threat – of unexpectedness that goes beyond technological innovation. What has been called *disruptive change* by economists (or Schumpeter's *creative destruction*) as a threatening as well as innovating force to business planning seems to affect social change at large. Disruptive change is rooted in social processes (such as terrorism), in natural and environmental disasters (tsunamis) and man-made large scale failures (financial market collapse). Such disruptive moments are likely to strongly influence the unfolding of public communication change of the coming decade.

Salzburg, 25 April 2010

Dr. Josef Trappel is Professor for media politics and media economy at the University of Salzburg, Austria. His main research interest lies with media and democracy, processes of change in public communications and the implications of new communication technologies. Most recent publication: On Media Monitoring (2010, New York: Peter Lang)

1.1.31 Uskali, Turo, University of Jyväskylä

Professional Journalism – Towards Twitterization of the News

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First of all, there will still be some paid journalists in 2020, but much fewer than today. The worst case scenario, which can be called as the U.S. news market, has shown us, that only in a decade the number of employed journalists might shrink dramatically, to being more precise, from 415 000 to 300 000. This trend of massive layoffs and payouts will continue in the Western world in coming years.

Secondly, digitalization, and especially the internet, has lead to the automation of information activities, also journalism. For example, news aggregators are already the second most important source of news consumed online in the U.S. (State of the Media 2010).

Due to the fact of diminishing revenues, and work force, news media organizations have to adjust themselves into much smaller units. Perhaps most significantly, the role of a journalist will change from a news gatherer to information flow manager and editor. With the help of different automated tools, the tiny corps of highly-skilled and paid journalists should be able to create the most relevant real-time news streams for the not-paying-anything mass audiences and the little-paying niche customers.

The core of the journalistic profession will be to curate steady intelligent stream of headlines and links. This can be called as the Twitterization of the news. By contrast, also longer forms of journalism will survive, but only when well-written, narrated and researched. These quality stories can be still printed in paper.

The most of the raw material will originate from the low paid freelancers, high paid experts and celebrities, voluntary contributors, and accidental witnesses. Only seldom anymore the journalists are the primer gatherers of the news material. Their role is to check the facts almost with the speed of the light, valuate the importance and relevance of the news for different consumers, direct the news flows to the right gadgets, and continuously add new, updated snippets.

It can also be predicted that the future of news is mobile. Smart phones with WiFi and 3G connections seems to be the same kind of boosters for mobile news than broadband has been for online news. With the help of Apple's iPhone and iPad, we have entered into the apps economy. Special news and other applications are designed to help us to filter the vastness of information flows of the Internet.

Finally, in general, people are more used to pay for the use of mobile devices than pc's, and laptops. Therefore, mobile news could offer one new sustainable stream of revenues for struggling news organizations, but nothing compared to the pre-Internet's news and advertising "monopoly" times.

1.1.32 Valaskivi, Katja, University of Tampere

Social values

Social developments and the spirit of the times go in cycles. Our times resemble in many aspects the times 100-150 years ago, when fast societal changes happened in Europe, America and Japan in terms of transportation, infrastructure and communication, working life and division of labor, relationship between work and leisure as well as family and social structures. Current changes of the media environment are a part of wider social (global scale) changes (and challenges), which include the crisis of global financial system and market economy, global warming, ageing in the developed world and population growth in the developing world. At the same time the old challenges of unequal distribution of wealth, education, access to media, nutrition and freedom of expression around the globe remain.

There are three themes that I specifically wish to bring up as significant in the development of social values in the next couple of decades: *1) Deepening interest and emphasis on collectivity, also in biological sense, 2) changing relationship between human beings and machines* and *3) growing importance of religion.*

1) The individual is the core of Western modernization, and needs of individual the driving force of societies. This ideology has challenged Christianity in Europe and the collective social structure in Japan equally. There are however, small indications about the individualism being questioned and people looking for more collective perspectives to the world. This would also have its implications to media and communication. In a more futuristic view we can anticipate that research of human biology will eventually move on to the collective level. So far the interest has focused on individuals and knowledge of biological base of collectivity is still very vague: What is 'chemistry' between people and human collectives, what kind of collective biological reactions people have? We know that after a war more boys are born than girls. Why is that? These are questions that will be studied also because the question of human relationship with machines will gain new dimensions.

2) Changes in the relationship between machines and human beings on a new level happen through the development of communication technology and virtual worlds but also through robot and humanoid technology. Robots able to recognize human feelings and respond accordingly are already being developed e.g. in Japan as one of the solutions of the diminishing population and ageing society problem. Industrial robots have already in many places substituted manual (male) human labor. The care robots might do this to the caring (female) human labor, changing not only the division of labor between men, women and machines but our perceptions of what is 'human' and what is not.

3) The modernization thesis about religion claims that a modernized society is a secularized one. However, already our current time is called a post-secular age, because of the growth of religiosity. This is not only due to the contradictions between Christianity and Islam because the growth has been documented also e.g. in Hinduist India. The importance and visibility of religions will without doubt keep growing in the future decades also because of the new questions about human collectivity and relationship with machines. For about a hundred years media has in many ways replaced various functions of religion. It also acts as a place and space of religious acts and rituals, more and more so in the future. Through media meanings of religious movements and their relationships to each other are circulated around the globe.

Dr. Katja Valaskivi,

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PS. In all predictions we need to remember that the future will be made by us. Foresight is a foolish practice since the future always consists of the measures we take based on our foresights. Researching the future is not possible, because the future depends on what is done now. What we instead should focus on, would be developing educated and refined, ethically sustainable, alternative visions of what the future could be like, and then come up with the measures through which the desirable visions would come true.

1.1.33 Valli, Seppo, VTT

“If stones could talk”: Talking Items and Other Miracles of Ubiquitous Media

Seppo Valli, VTT ICT, Media technologies

Location based services (LBS) were predicted to have a prosperous future some ten years ago. This has generally appeared to be true, although the take-up time has been longer than what was expected. There are many reasons for this, e.g. the challenges to support mobility, inadequate accuracy in positioning, and difficulties in acquiring user’s context. These obstacles are now easing up, together with recent advances in some important technical areas. The original concept of location based information has extended to more like Ubiquitous Media, i.e. omni-present contents in space and time, available according to user’s context and preferences.

Augmented Reality (AR) technologies will have an important role in boosting up Ubiquitous Media. Augmented (or Mixed) Reality combines real-world views with virtual objects and information. Current AR applications include e.g. indoor and outdoor visualisation in architectural and building applications, augmented assembly and maintenance, learning applications, hybrid media, entertainment, etc. (for more information and examples, see e.g. www.vtt.fi/multimedia).

Important technical enablers in AR are the new electronic and vision based methods for positioning and orientation. These include e.g. efficient algorithms (e.g. SIFT, SURF, and FERNS) for feature detection and tracking, which enable reliable recognition of real-world objects, accurate rendering of virtual objects in user’s view, as well as efficient content based classification and retrieval. Progress has also been made in optimising and implementing these algorithms on mobile devices [Takacs2008, Chen2009, Özuysal2010].

The vision of Ubiquitous Media – the physical world being enhanced with digital information – has already been known quite some time. Many names have also been suggested basically for the same vision and its various implementations, such as digital graffiti (http://dg.jku.at/About/), invisible post-its, geo-notes, information shadows [Burrell2001, Espinoza2001, Griswold2004], and world browsing (e.g. by Google). The vision is also included in the recent Metaverse Roadmap (http://www.metaverseroadmap.org/overview/). Related concepts have also been experimented in Urban and Social Tapestries projects (http://urbantapestries.net/).

Huge amount of content is already available in the Internet, and can be accessed using mobile devices and infrastructures. The success of Ubiquitous Media services depends likely on the quality of the content, and its delivery according to user’s context and needs. New content classification methods (typically applying the above mentioned feature detection algorithms) and e.g. social content provision and filtering will generally increase the value of the content for its user. However, new content description and production tools will still be needed.

In future, Ubiquitous Media services will scale up from mobile access to a small helpful piece of information, e.g. the latest news or the time for the next coming bus, up to browsing the environment in space and time for interesting digital annotations or useful virtual information, experiencing environments being enriched with digital sets or props, or even immersing into a totally virtual world instead of the physical reality.

The basic set of technologies and tools for Ubiquitous Media are already available. In near future they will enable associating practically any information with physical items or real-world views, as well as retrieving and interacting with such information. This will enable a plethora of new Ubiquitous Media applications and services ranging from entertainment to professional usage. Due to the availability of these technologies, we are actually taking a revolutionary step in the way information will be produced and consumed. In 2020, among other miracles, we will understand the items' talk!

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1.1.34 Valtonen, Kimmo, M-Brain Oy

Technology

Kimmo Valtonen, CTO, M-Brain Oy

By 2015, mobile devices will have become a key interface to media. Their global penetration has reached critical mass. Their capabilities have made a qualitative leap due to advances in hardware and the maturing of their operating systems. They have also acquired an open source developer community of critical size.

Over the ten-year period 2010-2020, who produces what content and how becomes less of an issue, as the content generation industry readjusts itself to slightly new forms and social media in general. Instead the hottest area of development is going to be the ways to select, filter, package and organize the exponentially increasing amount of data that the next generation of mobile devices, interacting with their environment, will produce, Automatic means of doing this processing and analysis will be augmented by stored human procedures or rather, *information need profiles/procedures.*

The specific hardware or software is not the essential issue. Instead, the emergence of methods for gleaning the information one wants or needs from the overwhelming stream of ”content” and measurements as a *tradable good* is going to emerge as a rapidly growing business sector.

One way to see this is as human beings taking over much of the traditional search engine business. ”Crowdsourcing” is one term capturing part of this behaviour, but what is essential here is the separation of content production (in which context crowdsourcing is typically used) and methods for filtering and organising content.

The further development of already existing methodology will enable media consumers to perceive and analyse the world cross-lingually, using a semantic representation. When this is coupled with the possibility to store quite complex information need profiles in a mobile device by 2015 at the latest, it will become possible for two consumers to trade, share or sell their personally created/modified profiles, context-dependently.

In other words, the revolution is not any longer about citizen journalists taking over the traditional business, but rather about **citizen editors and publishers** emerging as a potent force. This has much more potential for fast growth, as it requires no new raw content to be produced per se, only new ways of organising existing content. By 2015 the content space will be quite saturated anyway. Already now in 2010 there are many companies that produce content industrially (”how-to” content). Secondly, (at least decent-quality) content production is a slow process, and most users consume and do not really produce. However, human beings categorise, filter and organize data by nature, and everyone can participate in this, given powerful enough easy-to-use tools. Furthermore, the fact that it will be possible to at least study at a coarse level the entire content space cross-lingually by 2015 will further reduce the available market for ”new” content (of significant interest).

E.g. a consumer has created over a time a very good profile for gathering information about the emergent new media technologies from a stream of ”content” and measurements. This profile/procedure then becomes a particular ”journal” on this topic that others interested in the

same or related information can use or modify. The harvesting of the raw content itself will be a separate issue. Or to take a second, more personal level example, an augment reality - capable mobile device can have a set of predefined profiles/procedures that enable the user to navigate a library or a store enhanced with virtual data, or to find people with similar or conflicting interests in a social setting.

1.1.35 Werfel, Manfred, WAN-IFRA

The invention of the 21st century newspaper is proceeding apace

In the 19th century, when newspapers became the first mass medium and their page counts and circulations shot upwards, the objective was to satisfy as much as possible the hunger for news of the masses in the likewise rapidly growing cities. Fortunately, newspapers were able to benefit from technical inventions, such as the telegraph, the newspaper printing press and last but not least Ottmar Mergenthaler's Linotype line composing machine.

The aim was to make available lots of information regularly, quickly and at low cost through the newspaper. The large-sized Broadsheet format enabled the required volume of information to be printed within the given timeframe.

Today, more than 100 years later, the sparsity of news has become an information flood – a development that is unique in cultural history. Added to this is an undreamt of variety of media, including a whole series of news media that are free of charge and available around the clock.

Since the invention of the radio, the newspaper has surrendered its function as the Schopenhauer "second hand of history". Its role today is to signpost the way through the information and news jungle as well as to communicate topics, priorities and opinions.

In exactly the same way that the character and role of the newspaper are changing, the objectives of newspaper production are also changing. Up to now, newspapers have had to be produced above all fast, at low cost and efficiently.

Several webs run through the newspaper press printing towers simultaneously, so that the complete newspaper copy can be finished in a single production passage. The lowest-cost printing paper is used, namely porous, wood-containing and yellowish-greyish newsprint with an average grammage of 45 g/m^2 or less. The printed web is not dried in order to keep the night time production process as uncomplicated as possible. The pure and simple penetration of the ink into the paper – so-called absorption – is considered a sufficient substitute for drying. The fact that readers who do not take care get dirty fingers is tolerated.

In contrast, magazine production has different objectives, namely quality, flexibility, a wide range of products, paper grades and formats. A dryer is always used in the heatset web offset process as this allows higher-quality paper grades to be run that cannot absorb the ink because their surface was sealed or coated in order to obtain the desired product properties of smoothness and whiteness.

But the newspaper medium is changing. Accordingly, the production requirements are also changing. This development began theoretically nearly 20 years ago with the phased introduction of colour newspaper printing. Previous to this, the most colour that was used was one spot colour for the newspaper title and several privileged advertisers. Today 4c on every page is standard. Besides this, there is a strong trend towards more convenient formats. Changing to tabloid is quite

simple. Whoever can afford it invests in new presses capable of printing the “Berlin” format, which is nearly the equivalent of the small A3 size.

Another trend is the magazine-like appearance of the daily newspaper in relation to typography and design, the use of large-sized photos and illustrations that can say more than a thousand words.

What will come next? Is newspaper production facing a paradigm change? In future, will it not just be a matter of producing quickly, at low cost, simply and efficiently, but in addition also achieving the objectives of commercial quality, flexibility and versatility? We are, in fact, witnessing the advance of the so-called “semi-commercial” process. This somewhat vague term is used to describe equipping a newspaper press with quality-enhancing aggregates, mainly dryers, that transform the specialised press into a means of production that can be used to produce, besides the regular newspaper, a range of different objects, such as inserts, magazines, books, ads, and higher-quality newspapers. In addition to drying, which permits the use of coated paper, there are also the options of inline stitching and online trimming, that can transform a Berlin tabloid format into an A4-sized magazine that is barely distinguishable from a conventionally produced magazine.

If the newspaper is increasingly resembling a daily magazine in relation function, design and production quality, thus making its production a relatively complex process, the question arises as to who will printed the newspaper of the future. The required versatility at the prepress, printing and finishing stages can only be expected from a printing specialist and no longer from a publishing house that does not usually regard print production as its core business. In future, newspaper publishers will be able to free themselves of the actual job of production by turning their printing plants into separate profit centres or even outsourcing production. A third option is to establish printing centres independent of the publishing house, mainly in centres of population, that are operated by several publishers. Examples of this approach exist already.

With its 400 years, the newspaper is an old medium. It was only able to reach this age by repeatedly reinventing itself. It actual success story started when it became a mass medium. Today, we are witnessing once again a re-definition process of the newspaper mediums. This process has long been underway without everyone concerned realising it. Newspaper products are diversifying and adapting to meet the requirements of different target audiences. Newspaper production is also diversifying. The production process is becoming more complex. At the same time, publishers are focusing on the publishing business and print production is being done by specialists. The emancipation of newspaper printing began with the introduction of full-colour printing and could mark both the beginning of the end of specialised presses in newspaper production as well as the start of the new species of “daily magazine”.

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Darmstadt, 23 April 2010

1.1.36 von Stamm, Bettina, Innovation Leadership Forum, UK

Will Virtual Become Reality…?

Dr Bettina von Stamm, Director & Catalyst, Innovation Leadership Forum

Over the recent years the virtual world has been taking off, be it is the networking sites such as facebook or linked-in, or 'real life replacement opportunities' such as second life. I guess I have already given my take on these developments away, at least regarding the latter… it is all very exciting, no doubt about it, but I can see some less exciting and actually a little worrying aspects about it too. These concerns are at the individual as well as the societal level.

What are these concerns, you may ask. What I am worried about at the individual level is that at some point – which might already lay in the past – people will no longer be able to discern what is real and what is virtual. I feel reminded of the 1979 firm 'Being there' with Peter Sellers who plays a gardener who has until his employer's death never been outside his house. Once encountering the real world he believes, amongst other things, that unpleasant situations go away when hitting the 'off button' on a remote control. What is it, that people spend real money in the virtual world, and even get a divorce because the husband's avatar has had an affair with someone else's avatar in second life??? How close are we to life as depicted in the film 'Matrix' (1999)?

What are the consequences for society? If the virtual is so real that it is difficult to distinguish from real life, what are children growing up firmly in both words able to tell the difference? Why not stab someone, it does not have traumatic consequences in the virtual world – and such stories are starting to happen.

I believe that we are too much led by an excitement of what is technologically possible, rather than also asking the question whether, from a human development perspective, it is actually desirable.

Having said that, the existence of the digital world has changed how we work, connect and meet in amazingly positive ways too! For example, I am flying half way around the world to speak at a conference without having ever met the people who have invited me, in fact, without even knowing the people who have invited me. Something I believe would have been quite unimaginable for my father's generation. I still remember the initial unease when paper tickets went out of fashion in favour of electronic ones…

Perhaps I am just getting a little old, and the world is changing faster than is comfortable and acceptable to me. Perhaps it is just that the technology is not quite as developed to allow experiencing those who are in another part of the world as if they were right next to me. May that be how it is, I still believe nothing beats face to face relationships, and having a chat over a glass of wine.

Everything has its two sides, our challenge is, how to ensure we focus on and work with all the positive aspects that virtuality has to offer.

1.1.37 Väliverronen, Jari, University of Tampere

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Views on Professional Journalism in 2025

Journalism (refers to professional activity here for brevity's sake) will increasingly lose its position as the definer of what is newsworthy and / or worthy of reporting because of the technological developments that allow everyone to be reporters.

As a result, I would expect that with most news, journalism will turn to ordinary people more often than now, be they as sources, providers of data, or even reporters. However, there will of course be fields of interest (like politics) where journalism can retain a fairly prominent role even in basic reporting. Despite the increasing co-operation with the people (citizen journalists and others), I do not think journalism will yield too much of its decision-making power to others. It has fought for a couple of centuries to obtain the position it has now so it will try to hold on to it and use a variety of different kinds of networking strategies with laymen instead to retain control of the content it publishes.

Also, to improve the professional data-gathering process and to create added value for their work, many journalists will make a return to fieldwork because new technology allows them to spend most of their time outside the office, meet people, gather news leads and publish their stories on the spot. Some of these are likely to become freelancers at some point in the near future, but not all, because to do their work properly they will need specialized information. This information they will get from huge databases – sets of different kinds of information that other specialized journalists working in the office are gathering from all over the world, with the help of automated devices designed for data collection and analysis – which media outlets have created for their own use only.

By 2025, information simply abounds in easy-to-use search engines and the like, so basic news reporting becomes a field where making a difference as such is nearly impossible. Hence, it will become computerised to some degree in journalism. Journalists will be there to provide the "how" and "why" to the stories to create that little bit of extra, and in my opinion, to add more *emotion* which will play an integral part in future journalism – not just in columns and opinion pieces but also in news reporting. So, in a way, journalism will return to the old days when facts and emotion (or opinion, or persuasion, or whatever you want to call it) were not separated as clearly as they are now, i.e. we will see different genres mesh together at least to a degree. This development will, I believe, coincide with the arrival of new narrative techniques that are required by new forms of audiovisual presentation due to be created with the proper onset of augmented reality.

Will these imagined realities and new audiovisual forms then make good old narrative text obsolete in the future? My answer is an emphatic "no". Over the years, we have heard how first radio, then movies and TV, and most recently the internet were supposed to kill the printed word. That has not happened, and I cannot see why the new form of presentation (whatever it will be) would succeed in that either. Text will find its place in the new era too.

1.1.38 Väätäjä, Heli, Tampere University of Technology

Information and sharing of experiences in news events

Heli Väätäjä, Tampere University of Technology, Human-Centered Technology

In 2020 and the following years, in the case of local and global events, which have a direct effect on people's lives, information retrieval, information sharing and sharing of experiences mediated by technology is even more important than today. I take as example crisis situations, be they "man-made" like war, forest fires, or school shootings or natural disasters, like volcano eruptions, floods or earth-quakes.

In crisis situation, those, who are in direct contact with the event, share their feelings and experiences with their close ones (calls, email, messages) and peer networks (Facebook, irc or similar) or shouting into an open channel, like Twitter. This happens instantly, on the spot, practically in real-time. Users are also experienced and fast in creating blogs or similar media forms for the event and groups within social media for those who are in trouble (see Ash Break 2010 in Facebook) and for those who want more knowledge on the situation. In addition, always in the crowd are those, who are enthusiastic and willing to share their situation and collected media with news agencies or similar, providing content. In any case, people use most the channels they are used to also in crisis situations for sharing their feelings and information.

For media and news providers, following constantly the untraditional channels of information, filtering relevant topics and turning them fast into reliable and timely news is a challenge to solve. One way of ensuring the reliability is to look at the numbers of people reporting similar things or content pouring in on the same topic from various sources. However, there is a potential risk that media is being manipulated and therefore falls into the trap of reporting news without a background check. Electronic form of news, to which users have an access from anywhere in the world, with any possible electronic device, is a must for any news provider, who reports news events 24/7. In addition, since in crisis situations, the national news providers are being followed 24/7 all around the world by the citizens of a certain country, the content needs to be updated also 24/7. For example, Yle Areena would provide TV news, not only the evening news, but definitely also morning and day updates, and content suitable for small mobile devices as well in form of vidcasts or similar. In addition, news providers will use social media channels by filtering based on tagging or similar as one feed in their news stream and hopefully finding ways to make them part of the news. This is however, for some people still a privacy threat, and they are not willing to share location or any identifiable personal information with externals, not in their peer network.

Essentially, since people get a lot of information through their peer networks in social media, in which also rumors and unreliable and false information is easily spreading (like web cam feed on Katla – only it was not filming Katla), people have a need for official news providers as a solid and reliable source of information to back up what they hear from the "unofficial" media. There will be some well-known national and international news agencies, whose news reporting is considered most reliable, but people also tend to look at the news provided by their everyday news provider, be it local news papers or tabloids. However, there may be different groups within users – possibly less educated and low-income users trust more and

turn to their peer networks and tabloids, whereas well-educated and high-income users turn to official, well-known news providers for latest news in addition to their peer networks.

Important is also the way that one is able to combine information from different sources, making sense of a bigger picture related to the situation at hand and the event. Media forms, which incorporate and make a consistent and understandable story line of a number of news items, related to eg. time and location, are needed. In case of the volcano eruption, the maps of the ash in Europe airspace, flight information on airline websites, national agencies for aviation, news in online media, information from peers in the same situation stranded in different parts of the world (in this case often through facebook or hearing through friends or family), connections via different media on local information, via relatives, family, colleagues and other peers (Facebook, twitter, skype, phone calls etc) – all of these came from different channels. News providers had some official sites as links, but putting it all together, using mobile phones in slow and breaking connections to get up to date information still at this point demanded patience and was not always possible.

We are still not in the world of total access: how should we ensure, that at the same time, information is available online, it is reachable anywhere, with any device and possibly by the critical news by anyone, but on the other hand we are not totally relying on infrastructure which is vulnerable, and if it collapses, there is not a total blackout of news? What kind of solutions do we need? What kind of media and news should be provided for those in crisis event and those who are safe but following each for their own reason? Should news be personalized to the users' current situation or what other solutions could be used, what kind of feeds to use? In the case of volcano eruption, almost no other news were of interest for those stranded than the ones related to the situation. Information and news was also more complete and up-to-date in Europe than for example in USA, where the effects of the eruption were not so drastic. Therefore, understanding the global aspects of more local events and importance of providing news with relevant and reliable information is important in case of crisis situations. There is the personal, human aspect to the news, be it the center of the news, the provider of the news content, or the consumer of the news, that need attention and consideration – user groups are varied and wide and diversity will be greater in 2020 and beyond than what we see today.

1.2 Appendix 2: Trigger Questions and Claims

1.2.1 Social Values

By 2020, the commercial demand, supply and consumption of media products and services will be based only on audience's needs. Why do you think this is true or false?

Sharing becomes more important than owing by 2021. What caused this change in the values of people? How will it affect the media sector?

By 2022 the use of digital media will decreas suddenly. People have returned to use snail mail, both in business and in their private life. Libraries are again the main hubs for information dissemination. What has happened?

By 2023 most people will completely lose their interest to keep themselves updated about what is happening beyond their zone of influence. Thus, only hyper-local information is of value for the audience and they are willing to pay for that. Why do you think this is true or false?

By 2024 people identify themselves not by nationality, profession or class status but by their position in networks. Networks cover activities in professional, domestic and public life. Social success is measured by the size and the quality of personal networks. Is this realistic, why?

1.2.2 Social Media

In the year 2018 the most successful bloggers and other citizen journalists have become prominent and known “journalists” and opinion leaders also in Finland. Why so?

In 2020 we will not have social networking sites like Facebook or LinkedIn anymore. What has replaced these services as tools for social interaction?

By 2022 all possible content will be shared by consumers, at least in their communities. Owning pictures or videos is completely outdated. They have only value, if shared. How would this scenario influence the media industry?

By 2024 users of social media prefer only such services that credit the copyrights of the created content to the respective user. Is this possible combined with the claim above?

Who (or what) will filter information in 2026? What about 2040? What has happened?

1.2.3 User and Audience Behaviour

What's the typical media use in one day in 2020?

By 2020 consumers stop browsing, they only search. RSS feeds are outdated by 2020. Search results will always include all channels, geo-location(s) and will be adopted to real-time user context. Why would that happen?

How will we spend our free time, e.g. on entertainment, hobbies, voluntary work in 2020?

Most digital natives born after 1980 will not passively consume media anymore in 2025. They feel incredibly bored if they cannot interact. The avatar generation, born after 2000, cannot imagine a none-interactive media format anymore. Is this possible? Why?

What influence do users have, how personalised media needs to be?

Do you agree that by 2020 users will influence not only the development of online role playing games but also largely the development of the entertainment sector (especially interactive TV) and also tabloid formats and news "papers"? Why? How?

In the year 2020 the content of news "papers" is personalized according to the interests, personal needs, level of understanding and language skills of the readers. Thus there will be many service providers separate from content providers for personalising media contents for different audience segments around the globe. Is this realistic?

How will we know about interesting things around us by 2025?

In 2025, people feel the need to guide others to maintain friendship and family & business relations. They also do this for their own and other's safety, and to show that they "know". They may gradually become "5 star rating" junkies. Is this realistic?

In the year 2025 the average media literacy has developed tremendously, setting standards for even more complex content. Those without these skills have been set aside from the society.

1.2.4 User and Audience Interface

A new visual interface, based on navigation by pictures, will replace the RSS list of headline feeds by 2015. Why that?

New TVs in 2015 will all be 3D and internet capable, full HD format is minimum. Do you think there will be more futuristic trends?

How will media be visible in the physical world by 2020? How about ads?

By 2020 radio will broadcast mostly via cable and internet. People listen to the radio via TV or internet device as only there they get online information about the current song and performer. Do you think all radio stations will adapt to this? Why?

How will firms be communicating with their potential customers by 2025?

What will be the main interface for media use in 2030?

1.2.5 Markets and media landscape

What will be the role of actors in the media sector by 2020? Who will be the new parties/actors/competitors in the media landscape? Which actors/activities will disappear? Who will be the winners and losers of media industry?

What will be the evolution of the globalized markets with respect to the Finnish media branch? Is it possible that by 2021 Finnish media will just translate news into Finnish, as everything else is covered by Google, Facebook etc.? Why not?

Consequently, what will be the role of global media actors in Finland? Where and how will (journalistic) concepts in 2022 be created and managed? How will global (journalistic) concepts be localized?

Do you think that audience relationships and, more generally, marketing strategies will change when all the (potential) customers will be fully, constantly, ubiquitously connected? Is there any chance left for "one fits all" mass advertisements by 2023?

What will be the role of different media by 2024? What will be the role of personified journals? What will be the role of a traditional journal?

What will be the business strategies and business models of the media industry in by 2025? How will earnings take place? How and between whom will competition take place?

1.2.6 Media Companies and Their Attributes

What kind of new community and organization forms will develop?

Are there new forms of operation and cooperation for a media company by 2020, achievable with the support of innovative ICT solutions?

What would be the best way for a media company to be created, to organize itself, and to create innovative products and forms of production? Do you think the five largest Finnish media companies are able to innovate more than incremental by 2020? How?

What will be the value chain in (digital content) business by 2020? What will be the role of consumers in the value chain? What will be the role of publishers in the value chain?

Do you think that by 2025 business ecosystems will be the typical media company aggregation paradigm? Whether yes or not, can you motivate? Will there be any small media companies which are not associated to larger conglomerates?

What are the ideal relationships between media companies and government? Will the state need to supplement companies through a media tax? Are some companies more independent than others by 2025? Why so?

What will be the key values and characteristics of a media company?

What will be a typical media company's role in the society, its ways to operate and produce value by 2020?

What do you think are the key values for a media company in 2020? Beyond producing profit, will values such as flexibility, transparency, accountability, remain valid in the long-term?

To what extent should a media company be concerned with social and environmental issues in 2020? What could drive a media company into a more active role, rather promoting values than observing?

Could you list a number of characteristics that future media companies should exhibit? Do you think that media companies which are not agile and flexible can survive until 2020? Why?

General Issues

How will the (digital) content be priced in 2025?

Do you agree that brand architecture and brand management will replace the own production in the media houses in by 2025? Why?

Should the state support newspapers in 2025?

What are the ideal human resources management strategies in 2025? Do you think that the relationships employer-employees will change in the future? What will be the role of

supporting technologies? In particular, what impact will the social networking platforms have?

How will new media products and services be developed in 2025?

1.2.7 Media Content

Who will be customers for companies' (digital) content by 2020? What criteria will customers use in choosing company's (digital) content? Where and how will media content be delivered by 2020?

By 2020 local content is made by amateur journalists and published on non profit platforms. Ads are profiled to the needs of the consumer groups. Professional local journalism has vanished in Finland and elsewhere. Is this realistic?

By 2020 the state informs the public about nationally important issues. The public – the wisdom of the crowds - will act as watchdogs. Journalists are not needed as intermediaries anymore. How could this scenario develop?

By 2025, high quality journalism is accessible only for the elite consumers who are willing to pay for the content. Please state your arguments either for or against this claim.

By 2030 privately owned, economically and technically concentrated media companies are dominating the media field globally and locally. The quality of their information is low and the media is repeating the same issues on various technical platforms and channels. Commonly owned, non-profit, wiki-based, user-created grassroots media is serving as a public space for local discussion, information gathering and social networking. Would this be possible? Why?

1.2.8 Professional Journalism

What will be the role of professional journalists by 2020? What new forms of work are evolving?

Do you agree that in 2020 most of the professional journalists will be self-employed freelancers? Please write your reasoning why (or why not) you expect this to happen.

By 2020 most news will be discovered and broadcast by the public at large. Professionals will have the roles of filters, not anymore "discoverers". Professionals may only add the "how" and "why" background to the "where, when, who and what". Is this realistic?

By 2025 citizen journalism is integrated as a fluent part of journalistic work. Bloggers have established their position as journalists and most of the photo material comes from the readers. Would this make sense? Why?

In the year 2025 a journalist is not needed to assemble a news report, but the digital sphere is scanned by intelligent programs which are able to produce an automatic and real time news report for our receivers. Is this desirable?

By 20230 written, narrative text will lose its significance in journalistic work due to development of audiovisual interfaces/technologies in the consumer devices. Please state your arguments either for or against this claim.

1.2.9 Gaming

By 2020 reality games have become important ways of creating political discussion and imagining the possible futures. How come?

By 2020 educational content will be largely disseminated through (role) gaming. Why not?

By 2025 most of all media can be accessed by interfaces which we in 2010 would consider as "game interface". Users discover news and the world by "playing". Interactivity is a must (both in terms of content and other users). Is there any hint why this should not happen?

What other forms does the continuous integration between games and playful media offer for user interaction in the future?

By 2025 the classical joystick is completely outdated. All games are played in 3D by moving a tiny device (e.g. a finger ring) or by being scanned. Spoken commands are normality. What other developments will we experience?

1.2.10 Technology

What is the next technical innovation, revolutionizing knowledge access and distribution?

By 2015, with two Billion mobile ("phone") devices online, how would the eReader look like, in contrast? For what other purposes outside of the media scope would eReaders be used? Why?

By 2020 e-devices which feel like paper are in common use. Of course they include sound and video, and they are net-connected. What would be their price and life cycle? What if they cost less than five Euros? Will they make books disappear?

Internet in 2025 is much less abstract. It joins us everywhere and anytime, taking the role of an active consultant for life's questions and situations. It is normal to be in a permanent dialog with the net 4.0. How could the media industry participate?

Besides knowing its location, its direction, the user's heartbeat frequency, blood pressure and stress and constantly scanning its environment - what do you think a mobile device "knows" by 2025? How will these data be used by media companies?