

Infinite Bandwidth, Zero Latency: an invitation to imagine

2nd Workshop, Manchester 19/20 October 2010

Introduction

The second IBZL workshop extended involvement in the process begun in the first workshop, leading to the generation of a fresh set of ideas and concepts about a future of effectively unlimited bandwidth and effectively zero latency. The report on the first IBZL workshop (available via <http://www.ibzl.net>) summarises the rationale, context and process used for the workshop, which is not repeated here.

2nd IBZL workshop

As with the first workshop, the second was facilitated by Simon Bell and used the ‘Imagine’ methodology, bringing together participants from diverse backgrounds to generate and explore ideas for novel application areas of next generation networks. Considerable care was again taken to identify an appropriate mix of participants, dependent on factors such as academic/public/private/NGO sectors and disciplinary backgrounds.

Participants were allocated to one of three working groups and guided through four “events” that reviewed the current situation; prioritised issues; envisaged future option and finally developed a forward plan. The output of each ‘event’ was captured and used as feed-in to subsequent stages. At the end of the day, each group’s outputs were shared with workshop participants.

Outcomes

At the end of the workshop, each small group presented the ideas they had generated and refined. These outputs are listed below.

Working title	Summary
“Fair fibre”	This output identified the need for equality in provision of ‘good’ NGA infrastructure necessary to transform privacy (allowing end-user control); data (de-) centralisation (noting that what is ordinarily referred to as ‘cloud computing’ is in reality ‘data centre computing’ rather than a genuine decentralised cloud); a model for infrastructure economics and a fine-grained distribution of services.
“Citizen flight recorder”	A ‘life logger’ capturing streamed image/video/audio data throughout everyday life recorded and captured in the ‘cloud’ rather than locally. As a ‘flight recorder’, data could be used as evidence in criminal or civil legal proceedings or in citizen journalism transforming the legal system and, potentially, aspects of human relationships. The intrusiveness on others led to suggestions for an ‘anti-‘ device (e-balaclava) to protect privacy.

“Stealth shepherd”	An example of a ‘real avatar’ bot representing a person in the physical world. The ‘stealth shepherd’ example of a drone used to monitor, or even shepherd, sheep in rural areas. Other examples including ruggedised bots representing (e.g.) disabled students on outdoor field trips.
“Making space” – policy/theory	Creates the necessary conditions for the effective exploitation of the potential and benefits of IBZL technologies. Challenges cultural norms and preconceptions. Seeks learning opportunities from other contexts/paradigms. Produces a genuine transformation of co-operation and inclusion in society.
“Holding the line” – policy/theory	Creates new trust models and the ground rules to enable genuine participation in IBZL across the social spectrum. New models/loci of authority will form. New business models will emerge based on cooperation, collaboration and co-dependency. The result will be a transformation of relations between business, society and the individual.
“Acts of imagination” – policy/theory	Generate cultural paradigm shifts. New social contracts may emerge mediating ‘fair deals’ and radical inclusion. Positive risk-taking is encouraged. Conventional models of ownership are challenged. Collaborative buying and pledging facilitates rapid scaling and deployment of infrastructure. Social innovation camps encourage participation and pooling of insights. University 2.0 facilitates learning and knowledge transfer. Transforms scope, scale and social fabric.
“Help, I need a valve”	The need for filters to control the IBZL data flood. Use IBZL anywhere on anything. Transforms user experience and work environment.
“Personal control of personal data”	<p>Personal control of personal data taking back control in an IBZL world, allowing monitoring, visualisation and ownership of data to transform citizenship and power relations. These were conceived as via 2 sets of metaphor:</p> <p>Privacy metaphors - IBZL will mean even greater threats to personal privacy than now - and yet may also contain the elements to regain control over our personal information., e.g. through use of visual metaphors such as distance and space to control privacy through fuzzy generalised rules - the further away it is, the harder it is to see the detail, the nearer it is, the more control you have over it.</p> <p>Information visibility metaphors - IBZL will mean bigger problems coping with other people's data. Similar metaphors could limit visibility of data that is less relevant. Many use e.g. Twitter as a filter, trusting friends to judge what is relevant and interesting - IBZL could allow the development of live 3D and other visual metaphors to manage the data space and present data e.g. near is relevant, far is less relevant. Data that can be manipulated to take a different view of near and far.</p>

“Network topology”	About getting to IBZL through burstable bandwidth and sharing infrastructure to transform relationships
“Data topology”	Uses IBZL to distribute data hosting transforming the distribution of jobs and power relationships (SW: similar to “Fair fibre”?)
“Fly my desk anywhere”	The internet is going mobile: users increasingly access the net from mobile devices and expect connectivity. But there is also a parallel and opposing development: more becomes possible from desk/home including 'teleworking' using 'telepresence' and collaborative computing, applications that can become richer. Other applications like (e.g. Google Earth) enable us to explore and find things. IBZL makes it possible to view remote locations live and gather supplementary information - weather, traffic, events.
“Real Cloud Computing, or peer to peer virtualisation”	So-called cloud computing is really 'data centre computing'. What if using high bandwidth and low latency, end user computers were linked in giant virtualised hosts? This could have multiple benefits: super resilience to any form of failure or attack; less concentration of power in the hands of big hosting and content providers; less vulnerability to censorship; significant reductions in power consumption.
“Measure green impact of mobile network sharing”	One way towards truly ubiquitous access would be if the mobile networks shared infrastructure. Infrastructure sharing by fixed networks would also help us towards IBZL. The lack of sharing is wasteful of resources. A useful research project would be to assess the green impact of forcing telcos to share these infrastructures. Surplus equipment could then be used to help build new networks in developing countries.

Next steps

Further events

A third, half-day, 'mini' IBZL workshop based on the Imagine methodology is being held at the Womens' Engineering Society (organised by OU colleagues Clem Herman and Wendy Fisher, with Simon Bell) in November 2010, outputs from which will be reported on the ibzl.net web site.

Further development

In the October workshop, we agreed to organise a follow-up meeting of workshop participants to develop ideas which have emerged to date.