

The Bandwidth Dilemma

Internet stagnation after Dotcom.mania

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[The German translation can be found at Telepolis:

<http://www.heise.de/tp/deutsch/html/result.xhtml?url=/tp/deutsch/inhalt/on/7120/1.html&words=Bandbreite>

The English version:

[http://www.heise.de/tp/english/inhalt/on/7121/1.html/geert\]](http://www.heise.de/tp/english/inhalt/on/7121/1.html/geert)

Internet prophets is not a uniquely American phenomena. England has got its own breed of visionaries and Charles Leadbeater is one them. He is promoter of "the ignorance economy", (1) author of "Living on Thin Air: The New Economy", advising the Blair government in e-commerce matters and a consultant at the technology venture fund Atlas Venture. In the New Statesman of January 15, heralding the "second coming" of the internet, he states that "the internet is not finished. We are merely seeing the end of the growth of the first internet." (2) What a relief amidst all the NASDAQ doom and gloom. It's the kind of salvation we expect from a practicing priest of organized optimism. However, such escapes into bright futurism are the easy-way-out. The dilemma between functionality of "low bandwidth for all" text-based systems versus high bandwidth streaming media for the few is real one. An uneasy choice which telcos and IT-industry may struggle for a while, with huge implications for content providers.

Against historical commonsense Leadbeater, a former Financial Times journalist, dates the "first internet" from 1996 to 2000. Forget the twenty-five years or so year before the world wide web took off. Leadbeater is well aware of this forgery. He deliberately rewrites history, provoking the ascii/linux believers by saying that the internet was born out of the dotcom spirit of e-commerce. What Leadbeater is pushing is what we may call New Voluntarism. Forget the hackers story of Internet rooted in military/academic informatics. Internet was born out of the Will to eBusiness. Shopping and entertainment are the true nature of humankind. They are the one and only source, engine and destiny of the Net.

Unlike most New Economy prophets Leadbeater lacks sympathy for the geniality of technology and its code magicians. What he is saying, and what many of the failed dotcom entrepreneurs would think in secret, is that internet should shake of the yoke from technology. Applications and protocols which once pulled off this incredible global computer network were now stagnating its further development. How this liberation could be achieved is another matter.

According to Leadbeater the "first internet" failed because the technologists and geeks, in the end, triumphed over the CEOs and their managers and usability html slaves. Early online business pioneers were of good will, ready to serve their first customers. But the general audience got scared off by geekish hocus-pocus. Consumers, terrified by the complexity and clumsiness of this hyped-up yet incredibly self-referential environment simply left, way too early, never to come back again. No Super Bowl-style "offline" advertisement could seduce people to type in the domain names, however genius its name. The initially overprized stock values of internet startups, based on presupposed continuous turnover growth lost its potential customer base. By early 2000 the IT-goldrush, faced with market saturation, flipped into a downward spiral. The absent clicking and sticking cyber masses had triggered off the first internet recession.

See here the conspiracy theory of the New Economists: blame it on the geeks. In Leadbeater's words:

"The page-based internet is boring. People want genuinely interactive experience, with drama, excitement, games and jokes. The first internet spent little on content and charged nothing for it. The result: hosts of bored consumers using a medium designed for geeks and nerds."

What Leadbeater is trying to sell is dreamware, this time not developed by Californian anarcho capitalists but big media business, AOL-TimeWarner style. "The net will prosper when it is no longer the preserve of geeks, and when the speed of connections and size of bandwidth are secondary to the quality of the experience it delivers." How the news and game entertainment industry will reach supremacy while simultaneously pushing the borders of technological know-how remains unclear. In any case, the taming of geekdom is on the agenda of the virtual class--not anymore the Microsoft case. The paranoia for monopolies has shifted to a diffuse fear for over-development in technological directions without markets.

The playful collaboration of technologists and venture capitalists has come to an end. Online creativity has shifted to other levels to express itself and moved, for example, to peer-to-peer networks and open source software development. Decentralized gift economies which are much harder to economize compared to the heydays of webdesign and the following portalization of online content and services.

Looking down on the primitive, pre-historic past before e-commerce, the first internet was "accessed through cumbersome personal computers and narrowband telephone lines that allowed you to download limited amounts of information," Leadbeater writes. "Its basic currency is information, mainly in text form, and searching for it is frustratingly slow and chaotic."

As an Online-Uebermensch, just returned from the future, so kind to share a few of his thoughts with us earthlings, Leadbeater has no mercy with the clunky functionality of pre-millennial technology which still surrounds us:

"The web pages on which the text is displayed are dense and dull; they deliver none of the excitement of a good television advertisement. They rarely make you laugh, intentionally." Someone must have fooled Leadbeater. Those funny Americans perhaps? Anyway. He is really disappointed:

"The internet was supposed to be immediate, personalized, interactive and rich in content. It turned out to be slow, dense, clunky and boring."

A brief look into the political economy of bandwidth could help. The question of internet speed is and will always be determined by economics and (cyber)geography, as the maps show, (3) not per se by the technology used at the consumer's end. Speed on the internet is moody and in constant flux, not only depending on one's investment in hardware, locality and available connectivity. Speed is subjective and cultural experience. A whole range of unknown factors can bring the undisturbed surfing to a sudden halt. A broken deep-sea cable, a crucial land cable destroyed by a tractor, the US Eastcoast suddenly switching on their terminals or one of the main switches of MCI, AT&T, NTT or BT, gone down for a few seconds. Over the years, bandwidth suddenly has grown, however, this progress has been too slow for users to notice. The arrivals of ten of millions of newbies has eaten up new capacity with recent signs of a drop in bandwidth capacity due to overpricing; a "lack of demand" as the business press calls it. (4)

Instead of analyzing the present, Leadbeater rushes back to the future. "The next internet will be accessed everywhere, anytime, not just through hefty computers." Charles' future is going to be a Walhalla of access: "Telecommunication links will be wireless as well as well as landlines, and they will be broadband." He is promising nothing less than paradise on earth. "The second internet will be more interactive; games and animation will become commonplace." In short: "The second internet - wireless, ubiquitous, fast, rich in quality entertainment, drama and quality - will transform how we live, vote, shop, save, communicate and learn."

Apparently Leadbeater has not read the "13 things to know about broadband." (5) But he is well aware that he cannot deliver his technotopia overnight. "The components of the next internet will not come together for another three years." Now, that's interesting. Three years is almost a lifetime, measured in internet time, specially if we remember the acceleration of the technological boom during the roaring nineties. The three years in which the web established itself (1994-1997) and the even less then three years boom to bust period of dotcom.mania (1998-2000). But let's suppose Leadbeater is right here. It may indeed take many years until broadband and cable modem will have penetrated Western households deep enough to create a critical user mass. Crucial time the internet business community and most users don't have. We can read alarming editorials on the portal pages of www.streamingmedia.com about the impact the bandwidth stagnation has on drying up net.radio and video businesses. Only those with long term strategies will survive.

A similar situation with the rapidly emerging peer-to-peer networks. Napster has been build up by university students, using campus hard disk space and connectivity. An vast majority of the 64 million Napster users have 56K modem access, mainly interested in downloading, not exchanging files, mainly due to technical constrains. They are simply not online all the time. True peer-to-peer networks will only take-off when a critical mass of its users will have a permanent, open connection to the Net.⁷ Until then the uploading-downloading ratio will remain unbalanced. Clerics of professional positivism will point at the ever bright

future, showing bright growth figures which prove a diminishing bandwidth divide. An ever-growing amount of users may or may not yet have plenty bandwidth under their fingertips. The question is when? Streaming media producers and users demand broadband NOW. Not next year or in a decade. Telcos worldwide are reluctant to roll out broadband, (deliberately?) delaying the upgrade of their networks to DSL levels. (6) Investments in high performance flatrate access is not generating that much more cash, compared to the present infrastructure and revenue streams. It is anyway better to have a few well paying customers from the business sector than millions of nagging consumers paying only a few pennies for their all too comfortable stay in bandwidth paradise.

The future is taking revenge on those who have, either mentally or virtually, already arrived there. It is disappointingly empty and lonely out there: promising but without customers. Those who do not want to turn into bandwidth optimists have the option to go a few steps back and return to the productive atmosphere of low-tech tinkering. The choice between the conceptual cave of 3D streaming images and a retrograde ascii-code fundamentalism is becoming more and more attractive - and uncomfortable. Where should art projects and community networks go? Stay within the grey 56K world wide wait mainstream? Go avant-garde, requiring DSL, ending up in the sovereign atmospheres of the happy few? Jump back in history and muck around on the Unix prompt? Join the WAP debacle? Bet on an i-mode invasion from Japan? You chose. Of course we want everything, but that's a too easy excuse. Ideally, content should be provided for all platforms. By the look of it many users are simply sticking to their PCs and GSMs, unwilling to upgrade to newer levels which simply do not deliver the promised expectations.

The streaming media industry already seems to have made up its mind: it is withdrawing from the content-for-consumer market towards a smaller but more lucrative niche market, offering streaming media services to businesses. (7)

What we see here is a return of a similar dilemma back in the early nineties between offline multimedia 3D-interactive television/virtual reality and the real existing cyberspace, internet, about to make its significant yet aesthetically disappointing quantum jump from Unix kernel to the hypertext transfer protocol (HTML).

Collaborative filtering sites such as www.slashdot.org and www.plastic.com are facing the same dilemma. Apart from problematic editorial policies and the unresolved question of ownership over collaborative text databases there is the issue of those, living outside of access oases, not being able to contribute to important debates which are increasingly being held exclusively on online web forums. Exchange of opinions on the internet is gradually migrating away from the offline e-mail-based newsgroups and mailinglists towards websites which require online presence, thereby indirectly undermining the (presumably) democratic and equalizing character of e-mail. See here the dilemma: stay at the level of e-mail or jump to the online level of the web forum?

It is a false but nonetheless real choice which is on the table. The Net is developing in possibly conflicting directions. The image of a harmonious convergence of webTV, PC and handheld devices is not in sight. Instead of a

synergy all signs point at digital divergence, with tough choices to make over which standards and devices to use.

Notes

1) "Capitalize on the Economy! We've had knowledge management. Now it's time for ignorance management." In Management General

2) Reprinted in The Australian Financial Review, 19 January, 2001. Original available at www.newstatesman.co.uk (warning: complicated procedure to download content).

3) From the Telegeography 2001 (<http://www.telegeography.com/Publications/tg01.html>) report: "International Internet bandwidth is growing faster than international Internet traffic, however. In the past few years, tremendous physical infrastructure builds began to come on-line. Because raw bandwidth does not translate immediately into Internet capacity, however -- it must first be lit, sold, deployed, and integrated into data network operations -- the numbers showed what, to casual observers, appeared to be a mismatch between physical capacity and Internet capacity. See also www.cybergeography.org, the site for the book Mapping Cyberspace (<http://www.mappingcyberspace.com/>) and Brian Carroll's project www.architecturez.com/ae/.

4) "Bandwidth Narrows: Pan-European telecom carriers are having to curb their ambitions in a year that analysts predict will be the start of the communications shakeout. Last week, FirstMark, Viatel and GTS (Global TeleSystems) all announced they would cut their European operations. A glut of bandwidth, a lack of demand and the bottleneck of the "local loop" to homes and offices, meant a reversal of fortunes last year. And to add to their woes, share prices were badly hit in the tech slump and extra financing became hard to come by."

Source The Industry Standard

(<http://www.thestandardeurope.com/article/display/0,1151,14167,00.html>)

5) "13 Things to Know About Broadband" by Gerry McGovern, first published in his New Thinking electronic newsletter, then published in Steven Carlson's NowEurope newsletter which was forwarded on May 13, 2000 to the nettime mailinglist www.nettime.org. On January 13, 2001 David Garcia forwarded "13 reactions" of John W. Patterson to nettime in response to Gerry McGovern.

6) "Although many providers of broadband Internet access have increased their marketing budgets to entice customers into upgrading their connections, analysts say few of the providers have been able to meet the demand that they have created. Stories abound of broadband customers waiting weeks or months to have DSL or cable-modem access installed, and Jupiter Research analyst Joseph Laszlo says the coming years will see the broadband market remain "more supply-constrained than demand-constrained." Analysts say the most likely reasons for providers' inability to meet demand are a lack of infrastructure and a shortage of installers and service personnel." Wall Street Journal, 12 February 2001.

7) "Perhaps the most compelling reason why streaming media will have greater success, sooner, within corporations than in front of the general public, is bandwidth. Most observers agree that, for reasons of quality, streaming video is really a broadband game, yet well over 90 percent of home Internet users in the United States are limited to dial-up access. But corporate intranets are typically

built on a high-speed backbone." Max Bloom, Opportunities in the Enterprise, in: Streamingmedia.com Europe Newsletter, February 26, 2001. In the same issue Paul Kushner writes: "The problem with the story of streaming media is that it started on the wrong end of the spectrum. Success will come first and foremost in enterprise and advertising. Streaming will then eventually branch out to more entertainment consumer content. Advancing content towards the general public was a mistake and the early founders have paid for it."