

GLOBAL INFORMATION SOCIETY WATCH 2008

Focus on access to infrastructure



Global Information Society Watch

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Net neutrality

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The end of the internet as we know it?

Although the term was coined already in the early 2000s and the concept goes back much further, the discussion about “network neutrality”, or net neutrality, has intensified in the past few years, with a particular focus on the internet. Activists warning of a doomsday when the internet as we know it will “die” are dismissed as conspiracy theorists by the CEOs of some of the biggest telecommunications companies in the world. However, industry regulators and governments are working to create legislation that would regulate net neutrality, and the issue was also a topic in the 2008 presidential elections in the United States (US).

So what is net neutrality, and why is it important?

Net neutrality, in its modern context, is the principle of letting all internet traffic flow equally and impartially, without discrimination. It allows internet users to access any web content or applications they choose, without restriction or limitation.

This principle is taken for granted by most of the billions of people who access the internet every day worldwide, even though users in quite a number of countries are affected by government-controlled censorship of the internet. However, the discussion about net neutrality is not limited to countries with restrictive governments exercising internet censorship – on the contrary, the debate is actually most intense in the US. And because global connectivity to the internet is maintained through a complicated set of interconnection arrangements, any restrictions or limitations applied in the US would affect the worldwide internet community and economy.

Those who fear that net neutrality may be compromised in the future claim that certain telecommunications companies – those who own and operate the transmission lines that carry telephone calls and internet traffic – are planning to introduce a scheme of charging extra for certain services on these lines, in this way making the internet more expensive and unaffordable to some. Premiums would be charged from content and application providers for services that would make their websites and servers more accessible than others (i.e., faster) while standard services could be slowed down. These extra costs could squeeze small content providers who cannot afford them out of the market; and the rest would have to pass the costs on to the end-users.

Worse yet, with many of the telecommunications carriers becoming content providers themselves, a particular concern is that internet content could become biased or even censored by them in order to gain competitive advantages. For example, if one of those carriers decided to launch its own search engine, it could prioritise its own service over, say, Google’s, and derive commercial gains from this through things like advertising revenue.

Critics of the net neutrality debate – first and foremost the large telecommunications carriers – say that this cannot happen in a competitive market, and that competition rather than regulation should be the answer to ensuring net neutrality. However, the recent consolidation in the sector, especially in the US, is giving rise to exactly this concern: that the level of competition may be compromised to an extent that will not guarantee net neutrality in the future.

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From its origins in the military, academic and research sectors, the internet has seen a transformation towards commercial applications since the late 1990s and developed into a vital communications system. At least in the developed world, it has joined the road and rail networks, the postal system and the global telephone network in the ranks of basic and essential infrastructure and services, without which many business processes and personal communication have become unthinkable. Developing countries, too, are benefiting from the convergence of the internet with conventional telecommunications and media, which are often underdeveloped due to the limited strength of the private sector. The tremendous growth of the internet can be attributed to its open architecture and the fact that it is largely unregulated, allowing individuals and businesses around the world to contribute and reach a global market.

It is not surprising then that the general public and the global business community are sensitive to the issue of net neutrality and generally in favour of anything that may ensure continued unrestricted access, low costs, and a free and unbiased content universe. At the same time, however, there is of course also broad support for measures to take offensive or criminal content off the net (e.g., child pornography) or to crack down on spam.

Small content and application providers in particular have to be worried about being squeezed out of the market by higher fees for premium connections of their servers to the internet. Net neutrality ensures that the best ideas are rewarded rather than the best-funded ideas. Yet even heavyweights such as Google, Yahoo, eBay and Amazon are among the supporters of net neutrality, because it is they

who would pay the most in absolute terms should carriers introduce premium fees for premium services.

A wide array of other organisations support net neutrality, including consumer rights groups, free press and free speech advocates, as well as personalities counted among the founding fathers of the internet and the World Wide Web, such as Vint Cerf and Tim Berners-Lee.

On the political level in the US, during the 2008 elections campaign, Democratic presidential candidates spoke out for net neutrality. Both Barack Obama and Hillary Clinton were co-sponsors of the Internet Freedom Preservation Act, also referred to as the "Net Neutrality Bill". While Republican candidate John McCain, with his opposition to net neutrality regulation, was more successful in attracting campaign contributions from the leading US telecom companies, he trailed both Democratic candidates in terms of contributions from these companies' employees – which shows that the employees as individuals feel quite differently to their employers about the issue.

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McCain has stated that net neutrality legislation could be counterproductive and actually harm the openness of the internet. He is supported in this view by the major telecom companies and internet service providers (ISPs), as well as leading internet inventors and network engineers, hardware manufacturers and other business groups.

At the heart of the opposition to net neutrality by major telcos and broadband service providers is the quality of service issue. They claim the internet was not designed to handle the bandwidth-intensive applications that are becoming commonplace these days, such as video-on-demand, peer-to-peer (P2P) networking or online games, and that they must be allowed to control their quality of service by offering differentiated (or tiered) services to their customers.

These opponents of net neutrality like to compare the present state of the internet to the telephone system some twenty years ago, when it started offering a "second tier" of service in the form of wireless mobile phones. The prices for mobile phone services were initially high, because the operating companies had to recoup their investment in the new infrastructure. Only wealthier people were able to afford the new service at first, but over time it became cheaper and better in an unregulated free market. In the view of net neutrality opponents, government regulation to prevent a tiered internet would remove the incentive to invest in network infrastructure and to develop improvements to it.

Internet inventors argue that in fact, the internet protocol (IP) by design contains parameters to request differentiated levels of service, and that even today the internet is not the

level playing field that net neutrality proponents want to protect. Delay-sensitive applications such as voice and live video are given priority over data applications that do not require transmission in real-time. Calls via the internet to national emergency numbers may be given an even higher priority. The BitTorrent P2P application that is used to share large amounts of data is widely given reduced bandwidth or even blocked entirely. And in most countries it is normal for ISPs to offer tiered broadband packages with different amounts of bandwidth, where users exceeding their monthly limit are either throttled to dial-up speed or pay extra for additional bandwidth used.

If network operators cannot install infinite transmission capacity, they must rather develop the network infrastructure incrementally according to demand. In situations where they are unable or unwilling to develop the network quickly enough to satisfy the demand, they must control the demand by increasing prices and in this way maximising their profit. This is what some internet activists hold against them; but it is also the main obligation of a private company – to maximise the return to its shareholders.

A balanced view: Competition rather than regulation

The net neutrality debate has focused on whether or not to impose regulations to enforce neutrality. Many supporters of the principles of net neutrality actually do not support its regulation, believing that this could easily lead to over-regulation and set a precedent for even more intrusive regulation of the internet. However, many participants in the net neutrality debate confuse regulating the internet as such with regulating the telecommunications infrastructure that it uses.

The fear that the internet itself could be monopolised and require regulation is indeed unwarranted. All attempts in the past by various service providers to create their own "walled garden", a self-contained content and services sphere that charges a premium for full internet access, have miserably failed and are unlikely to be repeated. Customers simply voted with their feet and went to other service providers with fewer restrictions.

Regulation is only necessary where competition has failed or has not yet developed – and this is often the case with the telecommunications infrastructure that the internet uses. In virtually every country in the world, telecommunications has originally been the monopoly of a state-owned telecom entity, which has built up a national and international telecommunications network over many decades, funded by monopoly prices for services. Following the introduction of competition, it is usually not feasible for a new entrant into the market to replicate this infrastructure completely in

a reasonable amount of time in order to compete head-on with the incumbent. As a result, the new competitors will negotiate to lease parts of the incumbent's infrastructure for providing their own services, until they have their own infrastructure in place, or even indefinitely.

However, as long as the incumbent telco is also a retail service provider, it will see the new market entrants as competitors rather than wholesale customers, and try everything possible to make life difficult for them. The answer to this problem is the structural separation of the incumbent telco. This means splitting it up into two independent entities: a retail service provider on the one hand, and on the other a separate entity that owns and operates the network infrastructure and provides wholesale services to other service providers, including the former incumbent's retail division.

Structural separation is resisted by most incumbent telcos, even though the few examples that exist to date (first and foremost British Telecom) tell impressive success stories. It is a complex business transformation process that takes time.

In the meantime, local loop unbundling (LLU or ULL) regulation can guarantee alternative service providers fair and open access to the incumbent's local network infrastructure. In countries with functioning LLU regulation (mostly in Western Europe), many alternative service providers have established themselves and co-located their own DSLAM (digital subscriber line access multiplexer) equipment at the incumbent's exchanges to provide their own DSL broadband services. Competition between these service providers automatically ensures net neutrality: if one of them decided to charge higher premium fees, customers would have no difficulty finding a competitor that does not, or that charges less.

In most developing countries, however, the competition situation is far worse, with the incumbent telco still monopolising international access and the national backbone network. In terms of neutrality towards content and applications, a particular concern has been the obstruction of competition by incumbent telcos to protect their traditional voice telephony business against new service providers using voice over internet protocol (VoIP). In several countries, even after VoIP had been legalised, the incumbents were using their monopolistic ownership of the national infrastructure and the international gateway to disadvantage VoIP offerings of competing service providers. In some cases, interconnection arrangements with such service providers were outright refused or delayed, and some incumbents have been accused of slowing down VoIP traffic from competing service providers to degrade the quality of service. The regulatory authorities in many developing countries are relatively weak and often fail to enforce existing regulations.

A particular situation exists in the US, which was hailed as an example for infrastructure-based competition between the traditional telcos and the cable TV companies, which kick-started the development of broadband in the late 1990s. The last few years have seen massive consolidation among the major telcos, with AT&T and Verizon now controlling approximately 80% of the DSL market and rapidly taking market share from the cable companies. The resulting degradation of competition, coupled with lacklustre LLU regulation, is the reason why net neutrality is much more fiercely discussed in the US than elsewhere. ■

GLOBAL INFORMATION SOCIETY WATCH 2008 is the second in a series of yearly reports critically covering the state of the information society from the perspectives of civil society organisations across the world.

GLOBAL INFORMATION SOCIETY WATCH or **GISWatch** has three interrelated goals:

- **Surveying** the state of information and communication technology (ICT) policy at the local and global levels
- **Encouraging** critical debate
- **Strengthening** networking and advocacy for a just, inclusive information society.

Each year the report focuses on a particular theme. **GISWatch 2008** focuses on access to infrastructure and includes several thematic reports dealing with key access issues, an analysis of where global institutions stand on the access debate, a report looking at the state of indicators and access, six regional reports and 38 country reports.

GISWatch 2008 is a joint initiative of the Association for Progressive Communications (APC), the Humanist Institute for Cooperation with Developing Countries (Hivos) and the Third World Institute (ITeM).

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