IMD
REAL WORLD. REAL LEARNING

TOMORROW'S CHALLENGES

WHY NET NEUTRALITY MATTERS TO YOUR BUSINESS

THE DEBATE ABOUT NETWORK NEUTRALITY AND THE LAW OF UNINTENDED CONSEQUENCES

By IMD Professor Carlos A. Primo Braga, with Nick Ashton-Hart

IMD
Chemin de Bellerive 23
PO Box 915,
CH-1001 Lausanne
Switzerland

Tel: +41 21 618 01 11
Fax: +41 21 618 07 07
info@imd.org
www.imd.org

The ongoing debate about net neutrality is one of the most important, as well as one of the most misunderstood and underestimated, regulatory issues on today's global agenda.

Is it on your radar or do you think it doesn't affect you?

The outcome of the debate will have an effect on sectors as seemingly unrelated and diverse as pharmaceuticals, banking, and the auto industry. These and other swathes of the economy will be impacted for decades by decisions being made by regulators around the world right now.

What is "Network Neutrality" and why is it significant?

"Network neutrality" is being discussed by regulators in many countries in direct proportion to how important the Internet has become. The classical definition as set down by Professor Tim Wu in 2003 is:

> "A maximally useful public information network aspires to treat all content, sites, and platforms equally. This allows the network to carry every form of information and support every kind of application."

In a nutshell, the debate about network neutrality reflects different perspectives about whether the first sentence is actually the most useful way to bring about the reality of the sentence that follows. It is a struggle that is both economic and political and has significant consequences in three respects:

- Who gets to decide how the value generated by product and service providers is apportioned?
- How much control each part of the value chain will have over the public Internet in each country?
- Who controls the power position of each part of that chain: shareholders and markets or regulators?

Given that the networked economy is the fastest growing part of the global economy, the answers to those questions relate to trillions of dollars. But it is hard to contextualize these issues without a basic understanding of how the Internet itself actually operates, so here are a few of the key points:

- Every communication will always use the most efficient path unless instructed differently by human intervention – a process known as "network management"
- All communications are by design blind to geography and distance
- Every communication is broken down into "packets" - very small bits of the whole - that are reassembled upon reception – and only the sender and receiver know the substance being communicated, given that each packet travels independently. It is, however, possible to know the basic type of communication (such as video, email etc.) a given packet carries

This means that the actors between you and anything that you do online can largely let the network determine how best to get your communication to its destination and vice-versa – but also that they alter that for many reasons. Defining what Internet Service Providers (ISPs) can, and cannot, include as 'network management' therefore becomes a key consideration.

Who is between you and the destination of your communications? There are essentially four types of entities in the Internet value chain including you:

1] End-users - which range from individuals to the largest corporations
2] ISPs: entities that provide connectivity for end-users – of which most countries have from several to dozens
3] Backbone providers: entities that connect ISPs to one another, but not end users
4] Product and service providers who provide applications that leverage the platform created by 2 and 3 above to deliver products and services to one another. These are frequently referred to as “OTT” for “Over the Top”

Your ISP has to connect to others to exchange data from their respective customers. Otherwise the Internet would just be a bunch of ISP-specific ‘islands’. Likewise it has to connect to backbone providers to allow international traffic exchange. All these arrangements are known as “peering”.

The result is a web of providers and agreements that defines how all data traverses the globe and network neutrality choices define how this web operates.

The choices to be made:

The choices at hand are multidimensional but the essence of the main question is this:

- If network neutrality is obligatory, then ISPs must treat all applications or services the same as any other that is functionally similar. In other words, YouTube could not pay ISPs in order to make it perform better for the user than a startup video service
- If network neutrality is not obligatory, then ISPs can charge service and application providers fees to prioritize services over their competitors

An additional dimension relates to peering and whether these agreements are subject to similar rules.

The arguments for and against network neutrality

The main arguments are as follows:

Against Net Neutrality

- ISP networks are used by third parties to deliver services for (enormous) profits, yet they don’t share in that revenue
- Increasing bandwidth for all users is very capital intensive and more revenue for ISPs will lead to more investment and better performance for all

For Net Neutrality

- If ISPs can charge for prioritization that guarantees market distortion in favor of the largest services
- Service innovation will be reduced as charging for access consumes services’ cash and reduces investments in applications
- Companies and users already pay for bandwidth. Charging for prioritization is in effect ‘double-charging

The trillion dollar question: why should a non-Internet-centric business care?

Right now, the industries that have been at the center of the debate have been mostly ISPs, backbone providers and pure Internet companies, especially those providing high-bandwidth services like video and audio streaming, as well as those that rely upon digital advertising. If we take digital advertising alone, we're talking about a US$135 billion market in 2014. That's just the tip of the iceberg.

So-called "cloud" applications and services increasingly underpin global business, from obvious applications like electronic mail to global supply chain operations. Industry is migrating from private data centers (company-owned server farms in offices) to cloud data centers at an incredible rate: Cisco estimates that, by 2019, 86% of all business computing will have moved to the cloud. It is a staggering transformation and why the cloud services market expects revenues of US$55 billion by 2020.

Another example of the potential implications of network neutrality is provided by the case of pharmaceutical giant Pfizer. The company migrated its entire supply chain to a cloud-based system in 2012. This has of course made the entire chain visible in real time and helps the company determine what to manufacture where and when.

If you are an ISP, and you persuade regulators to let you charge for service prioritization would you stop with advertising and video? Or would you go for the services that power global supply chains like those of Pfizer, knowing that the services would have to pay, because their customers would too?

The Need for Speed: Why Performance Matters

In electronic commerce, a slow performing website consistently rates as the biggest reason why customers abandon a 'shopping cart' mid-purchase. Disputes related to peering between some of the largest ISPs in the US led to a nine-month-long performance problem for millions of consumers so severe that some services were unusable. During that period NetFlix made a controversial decision to pay ISPs to deal with the impact on its customers but not without calling the terms "extortion".

Closer to home: after you read this go ask your tech specialists what critical business systems your company has migrated to the cloud – and what would happen if service performance dropped precipitously.

In sum, the main strength of the Internet is that its architecture assures interoperability without central control. This will become even more important as the "Internet of Things" will increasingly link the digital and physical worlds. The danger is that regulators and network providers will continue to strive for control (for different reasons) and degrade network neutrality, reducing innovation.

So, to return to the first question: is network neutrality on your agenda now?

This article is based on discussions at IMD's recent "Regulation and License to Operate" conference.

Carlos A. Primo Braga is Professor of International Political Economy at IMD, and Director of The Evian Group@IMD.

Nick Ashton-Hart has just concluded a several year stint as the senior permanent representative of the technology sector to the UN, its member-states, and the international organizations in Geneva. He's presently an Associate Fellow of the Geneva Centre for Security Policy.

Related Programs

ORCHESTRATING WINNING PERFORMANCE - http://www.imd.org/owp

The global business program for individuals and teams
Program Directors Michael Wade and Dominique Turpin

- Get exposed to the latest management thinking and to practical and innovative solutions for your business
- Anticipate global business trends
- Boost your performance, broaden your perspectives and expand your global network
- Design the program that suits you and your team
- Become a complete executive through activities that develop your mental, physical, and emotional health

THE IMD EXECUTIVE MBA - http://www.imd.org/emba

Never stop learning
Program Director Stefan Michel

- A rigorous, diverse and global program for experienced executives
- Sharpen your leadership skills, drive your learning into your company and fulfill your potential
- An execution-oriented program that focuses on turning ideas into action
- Thought leadership that you can put to use right away: earn a world-class MBA on the job