Long title:

Network neutrality and Internet Service Provider liability regulation: are the wise monkeys of cyberspace becoming stupid?

Short title:

Net neutrality: stupid monkeys?

Submitted to:

Regulation and Governance: http://www.wiley.com/bw/journal.asp?ref=1748-5983

Abstract:

The author explains for a general policy audience what the regulatory and governance problems and potential solutions are for the issue referred to as 'network neutrality', unpacking its 'lite' and 'heavy' elements. Eschewing technical, economic or legalistic explanations which he has previously tackled elsewhere, he explains that increasing Internet Service Provider (ISP) control over content risks not just differentiated pricing and speed on the Internet, but also removing the 'Three Wise Monkeys' liability regime for ISPs, replaced by an explicit role as content controller and thus censor. He then argues for a co-regulatory regime that ensures oversight and removes obvious abuses by fixed and mobile ISPs, without preventing innovation, while guarding against government abuse of the censorship opportunities provided by new technologies.

Policy Implications

1. 'Net neutrality' is a deceptively simple phrase hiding a multitude of meanings. It comprises two separate non-discrimination commitments.
2. Backward-looking 'net neutrality lite' claims that Internet users should not be disadvantaged due to opaque and invidious practices by their current Internet Service Provider (ISP). Forward looking 'positive net neutrality' describes a practice whereby higher QoS for higher prices should be offered on fair reasonable and non-discriminatory (FRAND) terms to all-comers, a modern equivalent of common carriage.
3. Social or economic justifications are not valid, neither barring any proprietary high speed traffic at all, nor strict versions of net neutrality that would not allow any traffic prioritisation. There is too much at stake to expect government to supplant the market in providing higher speed connections, or for the market to continue to deliver openness without the most basic of policy and regulatory backstops to ensure some growth.
4. Permitting content discrimination on the Internet will permit much more granular knowledge of what an ISP's customers are doing on the Internet. That means that the formerly 'Wise Monkeys' ISPs (liability regimes encourage them to 'see no evil, hear no evil and speak no evil') would become rapidly the all-seeing eye, with many more consequences than simply a new revenue stream to build higher-speed lanes.

5. A co-regulatory regime as described in the article ensures oversight and removes obvious abuses by fixed and mobile ISPs, without preventing innovation, while guarding against government abuse of the censorship opportunities provided by new technologies.

Word Count: 9000 words.

Introduction: The central place of Internet openness in communications regulation

'Net neutrality' is a deceptively simple phrase hiding a multitude of meanings. First, it comprises two separate non-discrimination commitments (Marsden 2010a). Backward-looking 'net neutrality lite' claims that Internet users should not be disadvantaged due to opaque and invidious practices by their current Internet Service Provider – the company providing the Internet connection into their home. Forward looking 'positive net neutrality' describes a practice whereby higher QoS for higher prices should be offered on fair reasonable and non-discriminatory (FRAND) terms to all-comers, a modern equivalent of common carriage (Noam 1994). It is a more debatable principle, with many content providers and carriers preferring exclusive arrangements. I state immediately that I do not believe in social or economic justifications for either barring any proprietary high speed traffic at all, or for strict versions of net neutrality that would not allow any traffic prioritisation. There is too much at stake to either expect government to supplant the market in providing higher speed connections, or for the market to continue to deliver openness without the most basic of policy and regulatory backstops to ensure some growth (Meisel 2010: 20).

Current ISP (and government) practices have been highly deceptive in places, blocking content for specific anti-competitive and non-specific traffic management purposes (Donahue 2010). There is little 'middle mile' competition in fixed ISP markets, even in Europe where the commitment to regulation for competition remains. Attempts to at least introduce transparency into the debate, as well as the rights of end-users, can be achieved via co-regulation. In European telecoms, this is a prevalent but awkward compromise between state and private regulation, with constitutionally uncertain protection for end-users and a wide latitude for private censorship. Forms of private censorship by intermediaries have been increasing throughout the last decade even as the law continues to declare those intermediaries (mainly Internet Service providers, but increasingly also video hosting companies such as YouTube, social networks such as Facebook, and search providers such as Google) to be 'Three wise monkeys'. These intermediaries are not subject to liability for their customers' content under the Electronic Commerce Directive (EC/2000/31) so long as they have no actual or constructive knowledge of that content: if they 'hear no evil, see no evil and speak no evil' (Marsden 2010a: 105-149). The liability question may be paraphrased: will the monkeys continue to be wise conduits for speech, or will governments make them open their eyes and ears, becoming stupid censors of speech?

We have to add one further market actor to the ISPs and the new Web2.0 intermediaries such as YouTube. Mobile Internet network providers claim the same special protections from

regulation that their previous incarnations as mobile voice networks claimed, to enable walled gardens to flourish. This type of asymmetrical regulation is especially dangerous for the future of fixed ISP net neutrality. Any solution needs to be holistic, considering ISPs' roles in the round. ISPs are a heterogeneous category, ranging from very large network owners such as (UK examples) British Telecom, Vodafone and Virgin Media (owner of the cable TV/telecoms infrastructure), to large retailers such as TalkTalk and Sky, to hundreds if not thousands of much smaller niche business and consumer operators. Censoring the Internet is as noxious as censoring the press was 150 years ago, especially when it is claimed to silence only those society condemns, such as copyright 'pirates', suspected paedophiles and pornographers.

In this article, there are four parts: first, I introduce net neutrality as a political slogan describes, and the legal, regulatory and policy discussions which have been applied to this form of Internet governance. Second, I try to fit the Internet to other public fora, to find out what we would be losing if net neutrality was abandoned. I discuss global problems that private or 'co-regulated' filtering and censorship cause, whether for private ends such as copyright enforcement or public ends such as restricting freedom of expression, as well as the potential impact on developing countries. The third section details co-regulation as an alternative way to approach net neutrality instead of state regulation. The two sections together are an attempt to understand what 'net neutrality lite' is for, and that it is a partial solution worth having, and which co-regulatory methods are needed to get there. Finally, I sum up by looking at what evidence may be needed for regulators to address net neutrality policy discussion in the future.

I make three assertions in introduction: the Internet is an essential utility for consumers and citizens; the Internet is far more important than the technologies it replaces simply because as a converged platform it is public library, shopping mall, cafe, television, radio, telephone network, virtual office, and many more things combined by digital 0s and 1s. Finally, we must not lose sight of its central function: it provides both technical protocols that enable all those wondrous services that we increasingly (and our children always) take for granted. But those protocols also enable or censor speech, depending on their configuration. It is not novel to claim that protocols regulate user behaviour on the Internet ('Code is law' as Lessig 1999a put it), but we must also acknowledge that our commitment to freedom of speech means that law can regulate the Internet, by enforcing conditions to enable free speech. As Wu (2003a) explains, laws can regulate the Internet as surely as vice versa, and with more constitutional authority if less technical virtuosity (Reidenberg 2005, Mayer-Schonberger 2008). I spent the first several years of this debate trying to persuade technologists and monopoly telecoms economists that they had to listen to legal arguments (Marsden 2001, 2005, 2006, 2008, 2010). Now in this article, I hope to persuade regulation and governance scholars that ignoring this critical element that controls our digital destinies is akin to failing to grasp the important of regulating research into the double-helix that controls our biological destinies.

1. What is net neutrality and what has happened so far?

Net neutrality as a description was first applied to the debate about Internet traffic management practices (ITMP), or Quality of Service (QoS) on the Internet in 2003 by Columbia University Professor Tim Wu (Lessig and Wu 2003, Wu 2003b), though the debate began when academics feared that cable TV's closed business model would overtake the open Internet in 1999 (Lemley and Lessig 1999, Lessig 1999a, 1999b). As with much of the interesting debate about Internet regulation and governance, the analysis begun in the United States has been most effectively carried into legislation or regulation in Japan and the European Union, as well as Norway and Canada (where it is called ITMP: De Beer 2009).

President Obama came into office in January 2009 committed to net neutrality regulation since his speeches on the matter as Junior Senator for Illinois in 2006 (Marsden 2010:1). A Notice of Proposed Rule Making (NPRM) by the Federal Communications Commission (FCC) under new Democrat Chair Julius Genachowski extended a consultation on net neutrality over the winter of 2009/10, with over 27,000 submissions made to the NPRM. This process was finishing just as the Court of Appeal in April 2010 (Comcast 2010) judged that the FCC's regulatory actions in this area were not justified by its reasoning under the Communications Act 1996, leading to much legal scrambling by the FCC and an announcement that they would seek to reclassify Internet service and so satisfy judicial scrutiny. Later in this article, I detail the more advanced practical steps towards net neutrality made in Norway and Canada.

The United States has been bogged down in litigation regarding telecoms competition and the proper jurisdiction of the FCC for decades since its liberalisation of its local telecoms monopolies in 1982 (Frieden 2010), and the net neutrality debate has been as much a victim as other policy areas. Donahue (2010: 7) concludes from the latest developments that "to the extent the exercise yields guidance, its findings may contribute to public policy and Internet governance abroad." Frankly, that is as much as one can hope for from much United States policy-making in as dysfunctional a federal policy landscape as has resulted from the heavily-lobbied and corporate-funded litigious environment of Washington D.C. (Meisel 2010, Marsden 2010b).

So it is worth following Donahue's (2010) guide in considering just what did emerge that is of use to other countries, rather than revisiting the complex and largely futile trench warfare of Federal Telecoms Bar litigation. First, the net neutrality problem is complex and far-reaching: European attempts to dismiss it as a problem that can be overcome by local loop (last mile) telecoms competition (Renda 2008, Cave et al 2009) fail to acknowledge persistent problems with market failure. The reason why it will persist is that the physical delivery of Internet to consumers is subject to a wide range of bottlenecks, not simply in the last mile. Even if platforms competed, there remain "n-sided" market problems in that there is no necessary direct (even non-contractual) relationship between innovative application providers and ISPs (Economides and Tag 2007), so that platforms may set rules to 'tax' data packets that ultimately impoverish the open innovation value chain, thus ultimately causing consumer harm. The average Internet

packet in your email or browser will have 'hopped' across eighteen to twenty routers to reach you, because the network is designed to use whichever is the randomly assigned most convenient route from content provider (e.g. a web server) to your computer. Rules applying to, or applied by, your local network provider are a drop in that wider Internet ocean. Furthermore, new router equipment lets any of those routers (if so equipped) look inside the datagram to ascertain the content, to conduct what is known as Deep Packet Inspection (DPI). This is a novel technology, because in the past routers were not powerful enough to conduct more than a shallow inspection that simply established the header information – the equivalent of the postal address for the packet. It is DPI that permits identification of the legality or otherwise of the content, as well as its usefulness or propensity to pay for higher speed transport.

The implications of DPI should quickly be established. First, an ISP can use DPI to determine whether the content values high speed transport – as a television stream does in requiring a dedicated broadcast channel – which means that in future the ISP could offer higher-speed dedicated capacity to that content, typically real-time dependent content such as television, movies or telephone calls using voice over Internet Protocol. Voice calls and video today use a dedicated line of course, your copper telephone line or cable line: tomorrow they may use dedicated high-speed lanes on your Internet connection. That will make a good business for ISPs who wish to offer higher capability (not all ISPs will do so). As Waclawsky (2005) stated as one of the engineers who have been standardizing these systems since the late 1990s: "This is the emerging, consensus view: [it] will let broadband industry vendors and operators put a control layer and a cash register over the Internet and creatively charge for it." It also potentially threatens the business of companies that compete with that content: Skype offers VOIP using normal Internet speeds, uTorrent and BBC's iPlayer offer video using peer-to-peer protocols. Why are they threatened and what is the contagion effect? It is simply that DPI and other techniques that let ISPs prioritize content also lets them slow down other content, as well as speed up content for those that pay (and for emergency communications and other 'good' packets). In fact, they could use these techniques to stop some content altogether, if they decide it is not to their benefit, or society's benefit, or the government's benefit, or a repressive regime's benefit, or...the rules of these traffic management techniques affect not only high speed, high money content, but by extension all other content too. You can only build a high speed lane on a motorway by creating inequality, and often those 'improvement works' slow down everyone currently using the roads. The Internet may or may not be different – and it is in the public interest to regulate both net neutrality 'lite' (the slow lanes) and net neutrality 'heavy' (what rules allow higher speed content), at least for a minimal level of transparency.

That neatly brings us to the stupid monkeys and their new DPI-enabled routers. Putting a cash register on the Internet will permit much more granular knowledge of what an ISP's customers are downloading and uploading on the Internet. That means that the formerly 'Wise Monkeys' ISPs would become rapidly the all-seeing eye, with many more consequences than

simply a new revenue stream to build higher-speed lanes – which generally means laying fibre-optic cables closer to the household, replacing the old copper lines. What it means is that ISPs could filter out both annoying and illegal content. For instance, they could 'hear' criminal conversations, such as those by terrorist sympathisers, illegal pornographers, harassers, those planning robberies, libellous commentary and so on. They could also 'see' illegal downloading of copyrighted material. They would be obliged to 'speak', to cooperate with law enforcement or even copyright industries in these scenarios, and this could create even greater difficulties where that speech was legal in one country but illegal where it was received (the newspapers and law courts are full of cases about a thousand and one examples of this, from English libel law to Australian pornography filtering, to Chinese Falun Gong banning to Turkish YouTube bans to United States online gambling bans, Diebert et al 2010). Sticking with net neutrality is therefore often popular with smaller ISPs, who do not want to be plunged into this legal liability morass, a legal chaos which the E-Commerce Directive was expressly designed to prevent. The frustrated politicians who want the 'Wise monkeys' to lose their wisdom and speak are both reviewing the E-Commerce Directive in the next two years (according to COM 2010: 10-11), and passing local laws which favour for instance their copyright industries, such as the controversial Digital Economy Act 2010 in the United Kingdom. We will return to this problem in the conclusion.

The European institutions in late 2009 agreed to impose transparency and net neutrality 'lite' conditions on ISPs, in Directives which must be implemented in national law by May 2011. New European Commissioner for the Information Society, Neelie Kroes, robustly stated her belief in net neutrality at her appointment hearing, but it is what I have since 2007 termed net neutrality 'lite', to be implemented via regulatory action and reporting from end-2010 under the amended Electronic Communications Directives (2009/136/EC and the Declaration appended to 2009/140/EC). It essentially permits discrimination (under certain conditions) on speed and price for new network capacity, but insists that existing networks do not discriminate 'backwards' – that is, do not reduce the existing levels of service. The European Commission is in 2010 consulting on the future of the Universal Service Obligation (EC 2010) which may be extended to 2Mbps broadband (impacting Member State law in 2012), which will mark a new "line in the sand" in Europe for minimum service levels. That will also require commitments to offering that level of access to the open Internet, not a throttled, blocked, walled garden area. European Parliament, European Commission and newly formed Body of European Regulators of Electronic Communications (BEREC) on behalf of the 27 national telecoms regulators all announced investigations into the implementation of net neutrality, to be carried out in the second half of 2010, at the end of which the European Commission must present to Parliament its first annual findings in the area.

2. Why Net Neutrality matters

The Internet matters far more than television or radio or the simple telephone, whatever technology debunkers may continue to claim. The legal policy and regulatory implications of rapidly standardizing innovation on the communications ecology was well understood by Benkler who was concerned with the need to maintain interoperability and openness to ensure a 'commons' in which unaffiliated and non-commercial innovation could flourish [Benkler (1998a); Benkler (1998b) building on De Sola Pool (1983)]. We are not simply considering economic analysis of bottlenecks in another transport-based industry, or a convergence of regulation between television and the Internet, but the global Information Society. Competition analysis of bottlenecks was inadequate to address Internet regulation a decade ago. If it was impossible then to separate the economic and wider policy considerations of the consumer Internet, how much more so is that the case today? That is not to say that much good work is not being done in economic analysis of networks, but to attempt to partition net neutrality – which is to say, the future of content on the Internet – as simply an economic issue won't wash. Noam (2008) states "There is nothing especially new about [media law's] recent round- net-neutrality - as a conceptual issue, or in terms of its policy options, except for the terminology."

Where content providers - newspapers, TV companies, search and e-commerce providers, and those making user generated content – formerly paid a flat rate to access the Internet based on the same service, that may no longer be the case on the next generation of Internet services. As a result, those most able and willing to pay may receive first-class service, while other content travels in the slow lane, where ISPs can track the incoming traffic. This trend affects all on-line content and e-commerce providers. As that effectively is every major provider of content and commerce, that means medium law (i.e. mass market content online that formerly used several media) is intimately tied into telecoms law (Marsden 2005, 2006). Furthermore, security and anti-terrorist measures are also driving ISPs towards filtering all incoming traffic. This may change the entire architecture of the Internet, its business model and freedom of speech. It is happening beyond the analysis of the discrete fields of information security, e-commerce law, media law and telecoms law. Regulatory analysts often 'don't get it' because they focus on narrow questions of telecoms regulation. There are at least two other critical factors at play: concern over illegal and inappropriate content (such as child pornography, music protected by copyright and latterly video files being inappropriately shared, and malware including spam); and the security agenda which aims to enforce QoS to separate 'good' or preferred from 'bad' or discriminated-against packets. There is a legitimate concern that this represents a division between the rich and powerful senders of packets and the lesser content types. These three policy areas, telecoms, content and security regulation, are coming together. Policies made in their respective arenas are tending to the same result in terms of incentives to deploy NGNs which could change the Internet forever, to become faster and safer but more closed.

The future of the Internet is a non-trivial issue (Zittrain 2008), in fact it is central to the future of productivity in most industries. It is an enabling technology, which means that the

exchange of information on this open platform promises (and delivers) real efficiencies in the economy and society generally, as it helps collaboration and improvement (Carnoy et al 1993). It is also socially enabling – whatever your view – for all the reasons encompassed in the expression 'Web2.0' or 'the participative web' (Seely Brown & Duguid 2000, Schrage (2000). That is, it has become a virtual playground, classroom, laboratory and chatroom. The rise in the number of people using email, Facebook, MySpace, Wikipedia, Skype, Instant Messaging, and other applications has extended so far into mass participation that it has truly affected society and the economy in all its facets. Children, in particular, are now 'born digital' in many locales in developed society (Tapscott 1999 Gasser and Palfrey 2008), and their access to the consumer Internet is an essential part of their development. Moreover, small businesses and solo home-based workers depend on this tool as a vital part of their participation in the economy. The promise of virtual worlds and massive online collaboration is to extend this impact even further by 2020.

The 'Wealth of Networks' analysis of Benkler (2006) thinks of the Internet as a giant experiment, combining laboratory with user innovation and feedback, while Boyle (2008) describes a wider movement 'Enclosing the Commons of the Mind' and Post (2009) extends a comparison with Jeffersonian America. The open Internet is, it is constantly said, a commons. That is the basis for claims that it should be preserved and regulation induced to prevent any more enclosure of that commons, while at the same time ensuring that the commons is not ruined by free-riders, that there is no 'Tragedy of the Commons'. The open Internet is by no means the only, or necessarily the most important place for public opinion to be formed, but it is the open public space that gives legitimacy to all these private or semi-private spaces.

The Internet's core values of openness and democracy have been established by accident as well as design. Horten (2009) states:

> By authorizing blocking practices, the Telecoms Package puts Europe on a path to a closed series of Internets. It puts at risk innovation, trade, and any policy goals to encourage cross-border trade. It puts at risk the EU's Information Society goals. And, it stands to chill democratic speech.

Strong arguments remains for checking closely that ISPs inform consumers when they reach caps, and for ensuring we do not return to rationed Internet use as we did in the 1990s with dial-up. As the law and practice stands today, it seems most customers do not know when they have been targeted as over-strenuous users of the Internet. Once targeted, customers generally cannot prove their 'innocence' – they have to accept the Terms of Use of the ISP without appeal (except theoretically via courts for breach of contract, or regulator for infringement of their consumer rights). The number of alternative ISPs is shrinking – not only is the ISP business expensive, leading to concentration in the industry, but the costs of renting backhaul from dominant operators is sufficiently high that no-one would want to offer service to a suspected 'bandwidth hog'. We may expect to see more protest behaviour by 'netizens' who do not agree with a law or

policy, especially where ISPs are seen to have failed to fully inform end-users about the implications of policy changes. Regulators (and their political equivalents) will not be able to ignore such problems. The Pirate Party MEPs in the European Parliament 2009-14 will make sure of that.

The problems of development and the global Digital Divide have become yet more pressing. Net neutrality is very definitely a global issue as two examples indicate. Internet connectivity is still very expensive for most developing countries, despite attempts to ensure local Internet peering points (exchanges) and new undersea cables. To flood the developing world's Internet with video traffic, much of which came from major video production countries such as India, Nigeria and of course Hollywood, could place local ISPs in serious financial peril. Casualties in such undertakings include for instance countries blacklisted by major ISPs for producing large amounts of spam: imagine as a Nigerian consumer how you would feel if your ISP was blacklisted in your relatives' country, blocking your email, simply because the ISP you use is also used by spammers.

The second development problem that net neutrality debate centres on is the wireless Internet. Most developing countries' citizens have much lower bandwidth than the West, and most of their connectivity is mobile: India is probably the poster child for a country with at least ten times more mobile than fixed phone subscribers. In the next several years, the developing world Internet user is going to try to test the limits of mobile networks to their maximum, and capacity as well as price might determine the extent to which they can expect a rapidly developing or a Third World Internet experience.

I flag up development issues because they are critical. Universal service is still a pipedream for many in the developing world, and when that arrives, the definition it is given will determine the minimum threshold that ISPs have to achieve. As Mueller (2007:7) states, net neutrality 'must also encompass a positive assertion of the broader social, economic and political value of universal and nondiscriminatory access to Internet resources among those connected to the Internet.' The types of non-net neutrality employed in Iran and China in June 2009 were politically rather than economically motivated, but political censorship designed to prevent citizens' access to foreign discussion of the closely contested Presidential elections, and the twentieth anniversary of the Tiananmen Square massacre, respectively. Mueller (2007:8) argues that the tendency of governments in both repressive and traditionally democratic regimes to impose liability on ISPs to censor content for a plethora of reasons argues for a policy of robust non-interference:

> "The flip side of an NN policy that valorizes the right of Internet users to access each other without interference from intermediaries is the belief that network users wronged by other users must hold the wrongdoer responsible – not the intermediary network operator."

That is especially valuable in countries where there is much less discussion of how ISPs being used as censors can create unambiguous dangers to user privacy and freedom of expression. Mueller suggests that the net neutrality metaphor could be used to hold all filtering and censorship practices up to the light, as well as governance in other areas of Internet regulation, such as domain name governance. As this issue has globalized and attracted activists, it has become an important policy issue discussed at the United Nations Internet Governance Forum (IGF). The IGF discussions of net neutrality and other issues substantially increased in its meeting in Egypt in November 2009 (IGF 2008, 2009).

2. Co- and Self-regulation in Europe

Co-regulation expresses a form of regulation which is neither state or National Regulatory Authority (NRA) regulation with specialized functions, but is also not 'pure' self-regulation as observed in industry-led standard setting (Marsden 2008). The state, and stakeholder groups including consumers, are stated to explicitly form part of the institutional setting for regulation. Co-regulation constitutes multiple stakeholders, and this inclusiveness results in greater legitimacy claims. However, direct government involvement including sanctioning powers may result in the gains of reflexive regulation – speed of response, dynamism, international cooperation between ISPs and others – being lost. It is clearly a finely balanced concept, a middle way between state regulation and 'pure' industry self-regulation. Ayres and Braithwaite (1992:4) stated: 'Practical people who are concerned with outcomes seek to understand the intricacies of interplays between state regulation and private orderings.' Responsive or reflexive regulation reflects a more complex dynamic interaction of state and market, a break with more stable previous arrangements (Teubner 1986:8). This applies to other globalizing phenomena, for instance financial and environmental law (Gaines and Kimber 2001).

Co-regulation is a vitally important concept to define, refine and examine against a rigorous methodological template. Price and Verhulst (2000) assert that there is little purity in self-regulation without at least a lurking government threat to intervene. The term 'co-regulation' encompasses a range of different regulatory phenomena, which have in common that the regulatory regime is made up of a complex interaction of general legislation and a self-regulatory body (Tambini 2007, Marsden 2008). The varying interests of actors result in different incentives to cooperate or attempt unilateral actions at the various points of the value chain. Without regulation responsive to both the single European market and the need for constitutional protection of freedom of expression at national levels, co- and self-regulatory measures cannot be self-sustaining.

The general trend is towards an expansion of scope of co-regulation, often at the expense of statutory regulation. NRAs such as Ofcom in the UK are exploring the possibility of 'sunsetting' particular regulations in the event that co-regulatory alternatives can be found. Where there is a clear industry interest in co-regulation to improve market penetration, or to head off threats of

statutory regulation, there are adequate market incentives for resources to be allocated to co-regulatory activities. A wide variety of models of co-regulatory tools exist. The European institutions adopted in 2003 an inter-institutional agreement to provide a stable context for better regulation (EU 2003), for those actions that require coordinated or joint implementation. Its objective is to improve the quality of Community legislation, its accessibility and its transposition into national law. The agreement entrenches best practices and sets out new objectives and commitments, and defines its approaches as:

- Co-regulation: 'The mechanism whereby a Community legislative act entrusts the attainment of the objectives defined by the legislative authority to parties which are recognised in the field.'
- Self-regulation: 'The possibility for economic operators, the social partners, NGOs or associations to adopt amongst themselves and for themselves common guidelines at European level (particularly codes of practices or sectoral agreements)'.
- Co-regulation and self-regulation 'will not be applicable where fundamental rights or important political options are at stake or in situations where the rules must be applied in a uniform fashion in all Member States'.

Co-regulation in the European context must also be proportional to the aims of the legal instrument, as well as conforming to the competition law of the European Union. Enforcement is the ultimate responsibility ('the safety net') of the state. Also note Directive 2007/65/EC at Recital 36:

> "self-regulation constitutes a type of voluntary initiative, which enables the economic operators, social partners, non-governmental organisations or associations to adopt common guidelines amongst themselves and for themselves ... Co-regulation gives, in its minimal form, a legal link between self-regulation and the national legislator in accordance with the legal traditions of the Member States. Co-regulation should allow for the possibility for State intervention in the event of its objectives not being met."

Four elements reinforce the role of EU institutions in addressing issues arising from the practice and assessment of self- and co-regulation:

- the EU has particular competence in specific policy areas where alternatives to regulation can be of particular importance, deriving directly from the legal (treaty) base;
- the EU has established already a lead role in articulating the 'Better Regulation Agenda', laying out an implementation framework through the Inter-institutional Agreement on Better Regulation (COM[2002]278);
- many of the issues raised, in terms of regulatory competence to deal with network neutrality, are inherently cross-border or even trans-European; and
- in recognition of subsidiarity, the most common EU instrument of regulatory policy is the Directive, rather than the European Regulation. The use of this instrument, in areas where self-

and co-regulatory alternatives are likely to be relevant, requires concrete and consistent guidance to implementing Member States, to avoid regulatory and market barriers and fragmentation. Formal mechanisms for harmonising and reconciling formal regulation in different Member States are less effective in relation to self-regulatory institutions.

Net neutrality regulatory solutions can be classified by the 'degree of self-regulation' involved, from basic informal communication through to formal regulation. Table 1 describes the extent of government involvement by analogy with the Beaufort Scale of wind strengths, in a continuum from complete calm (no involvement) to the strongest intervention (hurricane). Option 0 is infrequently found – a pure self-regulatory body with no prior or later approval is close to invisible in practice; it is certainly the case that only the very 'early stage' hybrid of self-regulation can be viewed in this space. Specifically, levels 9–11 represent co-regulation (i.e. government legislative force behind the regulatory forum), while 0–8 represent the evolution of self-regulation from its first beginnings towards the onset of co-regulation. This broad classification by policy involvement is not perfectly aligned with direct or indirect government funding. Such support includes aid to self-regulation by soft law and other policy interventions, including financial assistance. For instance, governments or the EU may choose to support self-regulatory standard-setting as a genuinely non-regulatory policy, as in scales 2 and 6, which may include financial support. Examples are drawn from a recent EC study (Marsden 2008), and more explanation is offered there.

Table 1: A 'Beaufort Scale' of self-regulation

Scale	Regulatory scheme	Government involvement
0*	'Pure' unenforced self-regulation	Informal interchange only – evolving partial industry forum building on players' own terms
1	Acknowledged self-regulation	Discussion but no formal recognition/approval
2	Post-facto standardized self-regulation	Later approval of standards
3	Standardised self-regulation	Formal approval of standards
4	Discussed self-regulation	Prior principled informal discussion – but no sanction/approval/process audit
5	Recognised self-regulation	Recognition of body – informal policy role
6	Co-founded self-regulation	Prior negotiation of body; no outcome role
7	Sanctioned self-regulation	Recognition of body – formal policy role (contact committee/process)
8	Approved self-regulation	Prior principled less formal discussion with government –with recognition/approval
9	Approved compulsory co-regulation	Prior principled discussion with government –with sanction/approval/process audit
10	Scrutinised co-regulation	As 9, with annual budget/process approval

11	Independent body (with stakeholder forum)	Government imposed and co-regulated with taxation/compulsory levy

# denotes the presence of government/EU funding.

3. The Future: Evidence-Based Net Neutrality Regulation

The Internet's evolution is dynamic and complex. The availability and design of a suitable regulatory response must reflect this dynamism, and also the responsiveness of regulators and market players to each other. Therefore, if any legislation is required it should be future-proof and avoid being overly prescriptive, to avoid a premature response to the merging environment. Instead, I propose that regulators equip themselves with the skills and evidence base to rapidly investigate potential problems of unjustified discrimination. The European legal basis for regulatory intervention in Directives 2009/136/EC and 2009/140/EC, potentially provides for a wider and better variety of regulatory tools to intervene than the current US situation.

Two specific issues in this 'watchlist' are detection of any discrimination, and the standing of the content providers complaining of such discrimination. Should QoS be introduced, the types of harmful discrimination that can result may be undetectable. Blocking is relatively easy to spot. 'Throttling' or choking bandwidth, even where unjustified, may be harder to spot and even harder to efficiently regulate. A solution may be to require network operators to provide their Service Level Agreements on QoS to both content providers and more transparently to the end-user via a regulatory or co-regulatory reporting requirement. Regulators expecting a 'smoking gun' to present itself should be advised against such a reactive approach. A more proactive approach to monitoring and researching non-neutral behaviours will make network operators much more cognizant of their duties and obligations. Regulators can monitor both commercial transactions and traffic shaping by ISPs to detect potentially abusive discrimination. No matter what theoretical powers may exist, their usage in practice and the issue of forensic gathering of evidence may ultimately be more important. An *ex ante* requirement to demonstrate internal network QoS metrics to content provider customers and consumers may be a practical solution. To summarise, for timely and evidence based intervention, regulators will need to ensure that the network operators report more fully and publicly the levels of QoS that they provide between themselves as well as to end-users. Internet architecture experts have explained that discrimination is most likely to occur at this level as it is close to undetectable by those not in the two networks concerned in the hand-over of content. It is very difficult (if not impossible) to monitor the former for anyone other than the two network operators themselves, and therefore shedding light on QoS in this area will require a reporting requirement to be imposed. As this information is routinely collected by the network operators for internal purposes, this should not impose a substantial burden.

Net neutrality is politically controversial in Canada, where a celebrated breach took place in 2005, an ISP allegedly censoring communications within its own employees' union (De Beer

2009). Since then, the argument has grown in scale and scope, not least because incumbent Bell Canada's wholesale operation was found to have throttled traffic for all its retail ISP customers. CRTC, the Canadian regulator, made a simple but entirely unsatisfactory ruling - Bell discriminated against everyone, including themselves. That meant they were not in breach of competition law, but breached net neutrality and rode over customer rights. This situation could not be maintained, so on the same day that the CRTC announced that Bell Canada decision, it also announced that it would be making an evidence-based inquiry into net neutrality. The CRTC decided to hold open hearings on network neutrality and traffic management, stating 'The issue of Internet traffic management practices is increasingly a global issue that is being raised in other jurisdictions'. European and US regulators should review these 2009 proceedings carefully for best practice and the attempt to make evidence-based rulemaking.

The United Kingdom has been slow to recognize the problems that moving away from net neutrality can pose for consumers, with the Chief Executive of TalkTalk first revealing at Ofcom's 2006 conference that he was receiving death threats from online gamers upset that their connections were being throttled during evening peak hours (Dunstone 2006). Yet despite this evidence and much more since, notably the throttling of BBC iPlayer video by the incumbent British Telecom, the UK has confined itself to measuring ISP broadband performance, making it easier for consumers to switch to rival providers (Kiedrowski 2007) and reporting to the European Commission in its 15th Annual Implementation Report on telecoms liberalization that no problems were occurring in 2009-10![1]

To see co-regulation in more effective practice, consider European Economic Area (not full EU) member, Norway. A complaint first arose due to a dispute between an ISP, NextGenTel, and the Norwegian state broadcaster NRK in mid-2006 (Marsden 2010: 172-3). NextGenTel limited the bandwidth available to the website of NRK, which the operator said was generating excessive traffic caused by its subscribers streaming free Internet TV provided by the broadcaster. NRK published a statement on its website stating that NextGenTel had considerably decreased the transfer capacity from its website to NextGenTel broadband customers. According to the broadcaster, the operator had asked for an additional payment for an increase in capacity. In its statement, NRK said that the matter was out of its control and that NextGenTel customers should contact the operator directly – which the customer did in their droves, according to local reports. NextGenTel threatened to place a 1 Gigabit per second cap on traffic from NRK. The regulator in Norway persuaded the ISPs and cablecos sign up to a co-regulatory pact on transparency and consumer rights in February 2009, following over two years' research and multi-stakeholder discussions. This stands in contrast to the slower progress towards detailed reporting standards in the United Kingdom. The Norwegian Code (2009) states:

- Internet users must be given complete and accurate information about the service they are buying, including capacity and quality.

- Users are allowed to send and receive content of their choice, use services and applications of their choice and connect any hardware and software that doesn't harm the network.
- The connection cannot be discriminated against based on application, service, content, sender, or receiver.

There are various explanations that any network management must be non-discriminatory. Head of the regulator Willy Jensen stated:

> "Everyone who endorses these guidelines has made it clear that they support an open Internet on which different providers can compete freely to offer content and services. Internet users need to be assured that the ISP they have chosen will not act as a gatekeeper for their Internet use."2

The pace of change in the relation between architecture and content on the Internet requires continuous improvement in the regulator's research and technological training. This is in part a reflection of the complexity of the issue set, including security and Internet-peering issues, as well as more traditional telecoms and content issues. Dominant and entrenched market actors in regulated 'bottlenecks' play games with regulators in order to increase the sunk costs of market entry for other actors, and pass through costs to consumers and innovators. Very high entry barrier co-regulation and self-regulation can be as effective in curbing market entry as direct content regulation, especially where ISPs are incentivized to tier and charge for QoS, which raises doubts as to their desire to implement self regulation. By and large, the greater the levels of regulation, the more the market develops towards closed and concentrated structures, for three reasons:

1. larger companies are able to bear compliance costs much more easily than SMEs, and therefore it is important that such entry barriers – where necessary - are minimised;
2. larger companies have the resources and lobbying power to seek to influence regulation in a positive direction;
3. large ISPs in a concentrated market may offload costs upstream onto content providers and developers, or downstream onto consumers.

Therefore any solution needs to take note of the potential for larger companies to 'game' a co-regulatory scheme and create additional compliance costs for smaller companies (whether content or network operators, and the combination of sectors makes this a particularly complex regulatory 'game'). The need for greater research towards understanding the nature of congestion problems on the Internet and their effect on content and innovation, is clear (Marsden 2008).

4. Conclusion: Wiser Monkeys?

Net neutrality has a rich influence. I have categorized net neutrality into positive (QoS) and negative (content discrimination) net neutrality indicating the former as potentially beneficial while the latter as potentially harmful. However, this categorization can be problematic, as the three major players involved in the net neutrality context – content suppliers, network operators, and end users have different, often conflicting, interests and economic incentives. Those incentives can either align or be at odds with the regulators' objective.

This is a policy area with no perfect solutions. Of course the Internet should be open to all, but private investment is the critical component in building a faster Internet. Of course universal service should be supported, and there must be some minimum access to the open Internet for all, whether they use a mobile 3G connection or a fast IPTV-enabled premium service. If it says 'Internet service', it should do what it says on the tin, offer an open Internet (alongside walled gardens if that is expressly advertised as such). I am happier limiting my conclusion to emphasise the complexity of the problem than trying to claim a one-size-fits-all solution.

To summarise the argument, there are incentives for network providers to police the traffic by type, if not by content. It enables the network providers, many of whom also operate their own proprietary applications, to charge a different price to non-affiliated content owners than affiliated owners. This differential pricing could make the profitable operation of non-affiliated providers more difficult. On that basis, a 'walled garden' of ISP services and those of its 'preferred content partners' might become the more successful business model. That model makes regulation much easier to enforce, but also prevents some of the interoperability and open access for users that is held to lead to much 'Web2.0' innovation for businesses. The answer must be contingent on political, market and technical developments. The issue of uncontrolled Internet flows versus engineered QoS solutions is central to the question of a 'free' versus regulated Internet. I propose a consumer- and citizen-orientated intervention. That depends on passing regulations to preventive controls exerted over traffic via DPI equipment, whether imposed by ISPs for financial advantage or by governments eager to use this new technology to filter, censor and enforce copyright against their citizens. Unravelling the previous non-liability regime in which ISPs could act as 'wise monkeys' risks removing the wisdom and efficiency of that approach in permitting the free flow of information for economic and social advantage.

These conclusions support a light-touch regulatory regime involving reporting requirements and co-regulation with, as far as is possible, market-based solutions. Regulatory monitoring of potential abuses, including strengthening investigatory capacity and transparency for end-users, is a solution that maintains maximum flexibility and policy choice, while ensuring that any abuses can be quickly detected and dealt with appropriately. Solutions may be international as well as local, and international coordination of best practice and knowledge through fora such as the OECD will enable national regulators to keep up with the technology 'arms race.' In the 2009 discussions to amend the E-Communications Framework via Directives

2009/136/EC and 2009/140/EC, large well-resourced European incumbent ISPs saw the opportunity to make common cause with mobile operators (Wu 2007), public service broadcasters and commercial television companies in an unholy alliance to prevent the open Internet video model emerging. The regulation of the Internet that is rapidly taking place is being driven – unquestionably – in Europe by politicians for public safety reasons. They are erecting entry barriers with the connivance of the incumbent players, with potentially enormous consequences for free speech, for free competition and for individual expression. This may be the correct policy option for a safer Internet policy, though it signals an abrupt change from the 'Generative Internet' (Zittrain 2008). It is therefore vital that regulators address the question of the proper 'lite' approach to net neutrality to prevent harm to the current Internet, as well as beginning to address the heavier questions of positive – or tiered – breaches of network neutrality.

We should not entrench 'Lex Monopolium' at the expense of an open Internet, nor is the choice that drastic: innovation and investment can be encouraged by relatively light touch co-regulatory transparency principles, backed up by a regulator with sufficient comprehension and research into the issues and sharp teeth to make a real political commitment to intervene where economic or social interests dictate. Net neutrality certainly provides an excellent platform to create this wider and better informed discussion, and to prevent harm to the current intermediary role of ISPs as wise monkeys.

References

Ayres, Ian and John Braithwaite (1992) Responsive Regulation: Transcending the Deregulation Debate, Yale University Press: Hartford, CT.

Benkler, Y. (1998a) 'Communications Infrastructure Regulation and the Distribution of Control Over Content', Telecommunications Policy, 22(3): 183–196, at <http://www.benkler.org/PolTech.pdf>

Benkler, Y. (1998b) 'Overcoming Agoraphobia: Building the Commons of the Digitally Networked Environment', Harvard Journal of Law and Technology, 11: 287–400, at <http://www.law.nyu.edu/benklery/agoraphobia.pdf>

Benkler, Y. (2006) The Wealth of Networks: How Social Production Transforms Markets and Freedom, New Haven and London: Yale University Press.

Boyle, J. (2008) The Public Domain: Enclosing the Commons of the Mind, New Haven, CT: Yale University Press.

Carnoy, M. Castells, M. Cohen, S.S. and Cardoso, F.H. (1993) The New Global Economy in the Information Age; Reflections on Our Changing World, New York: Macmillan.

Cave, M., et al. (2009) Statement by European Academics on the Inappropriateness of Imposing Increased Internet Regulation in the EU, 8 January 2009 by Martin Cave, Richard Collins, Nico van Eijk, Pierre Larouche, Luigi Prosperetti, Alexandre de Streel, Tommaso Valletti, at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1329926>

COM (2010) 245 A Digital Agenda for Europe, European Commission, Brussels at http://ec.europa.eu/information_society/digital-agenda/documents/digital-agenda-communication-en.pdf

COM (2002) 278 Better Regulation Action Plan

Comcast v. FCC (2010) No. 08-1291, delivered 6 April at http://pacer.cadc.uscourts.gov/common/opinions/201004/08-1291-1238302.pdf

De Beer, J. (2009) Net Neutrality in the Great White North (and its impact on Canadian culture), Telecommunications Journal of Australia, 59(2) (July): 24.1–24.19

De Sola Pool, I. (1983) Technologies of Freedom, Cambridge MA: Belknap.

Deibert, Ronald J., John G. Palfrey, Rafal Rohozinski and Jonathan Zittrain (editors)(2010) Access Controlled: The Shaping of Power, Rights, and Rule in Cyberspace, MIT Press, Cambridge, MA.

Digital Economy Act 2010, Chapter 24, at http://www.opsi.gov.uk%2Facts%2Facts2010%2Fukpga_20100024_en_1&ei=LxwMTOC-E56V4gaanIGbAQ&usg=AFQjCNH1_aWgbfrLbgPyhm8lpQDOpaa_ww&sig2=UOKxFp6oDeyxFexURnrn3A

Directive 2000/31/EC E-commerce Directive

Directive 2007/65/EC Audiovisual Media Services Directive

Directive 2009/136/EC Directive Amending the 2002 E-Communications package

Directive 2009/140/EC Directive Amending the 2002 Universal Service package

Donahue, H. (2010) The network neutrality inquiry, 12 info 2 pp3-8

Dunstone, Charles (2006) Carphone Warehouse/TalkTalk CEO, at the 2006 Ofcom conference: http://www.ofcom.org.uk/event/2006conference/presentations/session3

EC (2010) Consultation on the Future of the Universal Service Obligation, at http://ec.europa.eu/information_society/policy/ecomm/library/public_consult/universal_service_2010/index_en.htm

Economides, N. and Tåg, J. (2007) Net Neutrality on the Internet: A Two-Sided Market Analysis. Working Paper, NYU Center for Law and Economics, New York: NYU Center for Law and Economics

EU (2003) Inter Institutional Agreement at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=

Frieden, Rob (2010) Winning the Silicon Sweepstakes: Can the United States Compete in Global Telecommunications?, Yale University Press, Hartford, Conn.

Gaines, Sanford E. and Cliona Kimber (2001) Redirecting Self-Regulation, 13 Environmental Law 157

Internet Governance Forum (2008) Co-Hosted Workshop 'Network Neutrality – Examining The Issues And Implications For Development', 4 December 2008, at http://techpolicyinstitute.org/events/show/77.html and <http://www.intgovforum.org/cms/index.php/2008-igf-hyderabad/event-reports/72-workshops/370-workshop-58-network-neutrality-examining-the-issues-and-implications-fordevelopment>

Internet Governance Forum (2009) Programme, Format and Schedule for the 2009 Meeting, Revision of 4 June 2009, at <http://www.intgovforum.org/cms/2009/postings/ProgrammePaper.04.06.2009.rtf>

Kiedrowski, Tom (2007) Net Neutrality: Ofcom's view, at http://www.wwww.radioauthority.org.uk/media/speeches/2007/02/net_neutrality

Lemley, M.A. and Lessig, L. (1999), Ex Parte Declaration Of Professor Mark A. Lemley And Professor Lawrence Lessig In The Matter Of: Application For Consent To The Transfer Of Control Of Licenses of Mediaone Group, Inc. To AT&T Corp CS Docket No. 99-251 Before The Federal Communications Commission.

Lessig, L. (1999a) 'Code and Other Laws of Cyberspace', New York: Basic Books

Lessig, L. (1999b) The Limits in Open Code: Regulatory Standards and the Future of the Net, Berkeley Technology Law Journal, 14(2): 759–770

Lessig, L. and Wu T. (2003), Letter to the FCC Ex parte, 22 August 2003, at <www.timwu.org/wu_lessig_

Marsden, C. (2001) 'The Start of End-to-End? Internet Protocol Television', Intermedia, 29: 4—8.

Marsden, C. (2005) Regulating European Broadband Internet Content: Medium Law? Paper Presented to Wharton Business School Media Law Workshop, 28 October 2005, 61pp.
Marsden, C., Cave J., et al (2006) Assessing Indirect Impacts of the EC Proposals for Video Regulation, TR-414 for Ofcom. Santa Monica: RAND
Marsden, C., Simmons, S., Brown, I., Woods, L., Peake, A., Robinson, N., Hoorens, S. and Klautzer, L. (2008), Options for and Effectiveness of Internet Self- and Co-Regulation Phase 2: Case Study Report(January 15, 2008). Prepared for European Commission DG Information Society & Media. Available at SSRN: <http://ssrn.com/abstract=1281374
Marsden, C. (2010a) Net Neutrality: Towards a Co-regulatory Solution, Bloomsbury Academic, London
Marsden, C. (2010b) Appeals Court demolishes FCC legal argument for ancillary jurisdiction without Title I argument in Comcast, 6 April at http://chrismarsden.blogspot.com/2010/04/appeals-court-demolishes-fcc-legal.html
Mayer-Schonberger, V. (2008), 'Demystifying Lessig', Wisconsin Law Review, 4: 713–746
Meisel, John P. (2010) Trinko and mandated access to the Internet, 12 info 2 pp9-27, 20
Mueller, M. (2007) Net Neutrality as Global Principle for Internet Governance, Internet Governance Project Paper IGP07-003 at http://internetgovernance.org/pdf/NetNeutralityGlobalPrinciple.pdf
Noam, E.M. (1994) Beyond Liberalization II: The Impending Doom of Common Carriage, Telecommunications Policy, 18(6): 435–452.
Noam, E.M. (2008) Beyond Net Neutrality: Enduser Sovereignty at p2, Columbia University draft paper for 34th Telecoms Policy Research Conference, August 14, 2008.
Norwegian Code (2009) Guidelines for Net Neutrality, http://www.npt.no/iKnowBase/Content/109604/Guidelines%20for%20network%20neutrality.pdf
OJ:C:2003:321:0001:0005:EN:PDF
Palfrey, J. and Gasser, U. (2008) Born Digital: Understanding the First Generation of Digital Natives, New York: Basic Books.
Post, D. (2009) In Search of Jefferson's Moose: Notes on the State of Cyberspace, NY: Oxford University Press
Price, M. and Verhulst, S. (2000), 'In Search of the Self: Charting the Course of Self-Regulation on the Internet in a Global Environment', Chapter 3 in C. Marsden (ed), Regulating the Global Information Society, London: Routledge
Reidenberg, J. (2005) Technology and Internet Jurisdiction, 153 UNIV. OF PENN. L. REV. 1951
Renda, A. (2008), I own the pipes, you call the tune: The net neutrality debate and its (ir)relevance for Europe, CEPS Special Reports, Centre for European Policy Studies: Brussels.
Schrage Michael (2000) The Debriefing: John Seely Brown, Wired Issue August S.8.08.

Seely Brown J. and Duguid, P. (2000) The Social Life of Information, Cambridge, MA: Harvard Business School Press

Tambini, Leonardi and Marsden (2008) Codifying Cyberspace: Communications Self-Regulation in the Age of Internet Convergence, Routledge: London.

Tapscott, D. (1999) Growing Up Digital: The Rise of the Net Generation, New York: McGraw Hill

Teubner, G. (1986) 'The Transformation of Law in the Welfare State', in Teubner, G. (ed.), Dilemmas of Law in the Welfare State, Berlin: W. de Gruyter.

Waclawsky, J. (2005) 'IMS 101: What You Need to Know Now' at: http://www.bcr.com/carriers/public_networks/ims_101_what_need_know_now_2005061514.htm

Wu, T. (2003a) When Code Isn't Law, 89 Virginia L. Rev. 679 at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=413201

Wu, T. (2003b) Network Neutrality, Broadband Discrimination, 2 Journal of Telecommunications and High Technology Law, 141–172 available at http://ssrn.com/abstract=388863

Wu, T. (2007), Wireless Net Neutrality: Cellular Carterfone And Consumer Choice In Mobile Broadband, New America Foundation Wireless Future Program Working Paper #17 February

Zittrain, J. (2008) The Future of the Internet and How to Stop it, New Haven, CT: Yale University Press

[1] The Member States are required to fill in a questionnaire explaining the progress of their liberalization measures each year, beginning in 1996. With the increased legislative burden on net neutrality, in 2010 the survey asked what problems and progress member states were making on net neutrality. Whereas several Member States discussed the issues in some depth, the UK gave a whitewashed and misleading answer. See http://chrismarsden.blogspot.com/2010/05/uk-to-ec-no-net-neutrality-issues-that.html

[2] See http://chrismarsden.blogspot.com/2009/02/nettnytralitet-is-coming-to-norway.html