The ISP Column

An occasional column on things Internet

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Net Neutrality – Just who owes who in the content economy?

Its always surprising to see that some discussions just never seem to die. The recently revived one about the "neutrality" of the network operator is about as old as the role of the carriage operator itself. The latest round of public debate appears to have been sparked late in 2005 with an interview with the CEO of SBC on the topic of Internet "upstarts".

Interview with SBC CEO Edward Whitacre, Business Week Online, 7 November 2005

How concerned are you about Internet upstarts like Google, MSN, Vonage, and others?

"How do you think they're going to get to customers? Through a broadband pipe. Cable companies have them. We have them. Now what they would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it. So there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using. Why should they be allowed to use my pipes?

"The Internet can't be free in that sense, because we and the cable companies have made an investment and for a Google or Yahoo! or Vonage or anybody to expect to use these pipes [for] free is nuts! "

http://www.businessweek.com/@@n34h*IUQu7KtOwgA/magazine/content/05_45/b3958092.htm

Other studies of this topic of price discrimination in carriage sectors have identified precedents in canal shipping, rail and road systems that point to the efforts of ISPs :

"This historical record helps explain the push in the telecommunications industry for new network architectures that would provide service providers greater control of what customers do, and would deviate from the "stupid network" model of the Internet. However, there are substantial differences between the Internet and the old transportation systems, and even today's transport differs in important respects from that of centuries ago. The Internet is special, in its migration of costs and capabilities

"Network Neutrality", as its commonly called today, is a principle that has rich antecedents in the common carrier role. It espouses the position that the network is entirely neutral with respect to content, and that the network does not offer any a priori biased response to any particular content or service, nor does the network attempt to prevent the operation of any application or service. In terms of the network's position with respect to competing content, application or services the network itself should remain strictly neutral within the parameters of this common carrier position of strict neutrality.

Of course the area of intersection between Internet Service Providers and Content Providers is one that apparently produces more friction than synthesis these days, which is perhaps puzzling, in so far as similar relationships in the communications industry in the past have tended towards the mutually supportive and mutually beneficial, at the inevitable expense of the long suffering end customer!

Looking back at the earlier interaction of these two sectors (ISPs and content factories) we've seen the strident claims of "you have to pay me" coming from the content industry and directed to the IP access providers some years back at the height of the Internet boom, while the precise opposite appears to be the claim today.

The claim that Internet access providers owe content providers comes up in numerous ways: we've seen it in terms of a call for direct transfer of funds in regulatory framework debates, or in terms of a call for heavily discounted costs of access for content sites, or in terms of claims of a privileged position with respect to peering and financial settlements in the realm of network peering and interconnection. The underlying supposition made by the content providers in this debate was that without compelling content there would be no network that end consumers would want to access, and that access providers were monopolizing the user while content providers were languishing with totally inadequate levels of revenue. The attempted leverage here lay in threats to withdraw access to content from specific ISPs, which always struck me as a measure that appeared to have a significant component of self-harm. The content providers' argument has, by and large, fallen on deaf ears, and neither ISP nor any regulator appear to be sympathetic to such a case.

The claim that the content providers owe the Internet access providers also appears in numerous ways: some in the form of direct threats of withdrawal of access, as in the SBC CEO interview quoted above, or in terms of elevated access costs due to the more intense network resource use profile, or even in terms of the ISP undertaking content "stealing" through traffic interception and forced caching, or even to the extent of blocking certain traffic profiles, as we've heard with ISPs attempting to block applications such as Skype and BitTorrent.

What's going on with the content industry? Why is there this apparent mismatch here between carriage and content? Why is the carriage provider being tempted away from its traditional position of neutrality with respect to content?

Maybe its time to look at some online content business models and their effectiveness. In this column we'll look at some of the models of content provision, how these models have fared on the Internet and their impact on network neutrality.

The Business of Content

We've all heard that the Internet is making profound changes to the way we conduct business, and we've also all heard the predictions of further massive changes yet to occur that will be fuelled by the Internet. Some predictions about Internet-induced change have been realized at frightening speed, while other predictions are bypassed as a recalcitrant

reality moves onward in an entirely different direction. One of the more challenging tasks has been to predict the longer term stable economic model of content provision on the Internet and the interaction with ISPs.

The classical content provisioning models, or if not classical, at least one of the oldest, is that used by the book publishing industry. Here the consumer purchases the medium, or in this case the book. The consumer's payment is used to compensate the retailer, the distributor, the publisher, and with luck, ultimately the author gets a percentage as well! The book world has proved remarkably resilient to technology-induced change so far. It's not difficult to scan and content index an entire book if you have the right machinery, as Google Book Search and Amazon have proved with apparent effortless ease, but for the end consumer it's a remarkably tedious process to undertake with a consumer-grade scanner. As a result, the publishing industry continues to be dominated by the costs of paper, printing, warehousing, distribution and marketing. The impact of the Internet on this activity has been concentrated on competing with the retail sector, creating virtual bookstores with greater inventories and discounted pricing.

The music industry followed a similar path of using the medium as the means of pricing content. However, in this case, a combination of technology advances in consumer electronics and the Internet have made it a trivial task to duplicate and redistribute music content. The problem with this content distribution model is that such redistribution may occur without the due recognition of the rights of the copyright owner of the music ('recognition' in the sense of payment, of course!). It appears that we have managed to head a long way down this path, and included video distribution channels along the way. We appear to be at a stage of wide scale redistribution of such content, to the extent that such traffic dominates most ISP networks. The entertainment content industry remains reluctant to abandon the medium and move away from their established business models, due, in no small part, to their inability to establish a viable content distribution model that takes into account such secondary redistribution. In such a circumstance, the Internet does not rewrite the economy of content publication or distribution, but takes on the more traditional role of a being a competitive (and highly disruptive) distribution regime. The international nature of the Internet also implies that seeking legal remedies to such unauthorized redistribution is often unwieldy and expensive, even when successfully prosecuted in individual cases.

Necessity, they say, is the mother of invention, and the need to derive a revenue stream from the provision of content on the Internet has fuelled other approaches. One of these is the online subscription model. Here the consumer enters into an ongoing relationship with the content provider, and is granted access to content that would otherwise be inaccessible. This arrangement has some obvious attractions in that there is no significant additional overhead in distribution of the content: no print, no distribution and no retailing requirement. The consumer pays the content originator directly for the content itself, without the added impost of the cost of distribution of the medium of the content. But this model has failed to really take off on the Internet. Consumers appear to be reluctant to enter into a myriad of individual content access relationships, and, for the content provider, the consideration is that once the content has been passed to the consumer digitally the content provider loses control over any consequent redistribution of the content. The digital content can be readily saved and redistributed, depriving the content provider of further revenue. The international nature of the Internet also implies that seeking legal remedies to such unauthorized redistribution is often unwieldy and expensive, even when successfully prosecuted.

Another economic model for content is commonly used when distribution is essentially unlimited and redistribution is relatively easy. Instead of attempting to limit distribution of content to those who have purchased the content, the content is tightly interlaced with paid advertisements. The advertisements are intended to compensate the content creator, while content distribution takes on its own momentum as a consumer activity. To maximize the advertising revenue, then the wider the distribution of the content, the better. Here the Internet appears to offer significant potential. The ease by which content can be circulated so as to be accessible by tens of millions of potential viewers is without precedent in any other content distribution system. The cost of reaching each potential viewer is also at an unprecedented low point. This would appear to be a potential answer to the content economy, replicating free to air television and radio in its model of advertiser-paid content distribution. However its not quite as seamless as some would hope, and cracks have emerged in the application of this model to the Internet. For the interlacing of advertisement and content to operate effectively, the interlacing must not be filterable by the viewer. It is possible to take a compound web page and alter the interlacing of advertisement and content. To be effective, the demographics of the viewer should be known to the content distributor, so that the advertisements with the greatest relevance and interest can be directed towards each viewer. The banner ad model of advertisement has not been so effective. The ads can be readily stripped from the remainder of the page. More importantly, the attention levels obtained by these ads, the so-called 'click-through rates' where the viewer actively follows the reference embedded in the ad, is extremely low. And, most critically,

the Internet is too unconstrained as a distribution network, and has no reliable targeting demographics that are accessible to the advertiser. For advertisers the Internet, as an advertising channel, has lost its sheen of novelty, and now the traditional methods of measuring advertising effectiveness come into play. For content providers who are using an advertiser funding model of revenue generation this is not welcome news, as the effectiveness outcomes for Internet advertising are much lower than many other advertising channels. But these can be phrased as merely technical shortcomings in the traditional model and can be overcome with by pushing a little harder in using additional information when attempting to match the consumer to the desired producer with the presentation of the advertisement. After all one view of the difference between any annoying advertisement and a helpful intervention is merely a matter about the level of information about the client's current needs. The second generation of content 'seeding' factories, such as Google, appear to have found some useful answers to these questions, and, undoubtedly, have created advertising channels to markets that are seriously impacting traditional advertising activities.

In the light of these developments in a advertiser-funded content economy, the original concept, of a separate and distinct content economy as an overlay on top of the underlying connectivity of the Internet, is one that is now taking some substantial form. We are seeing the dominance of content distribution models that leverage advertisement revenue to subsidise the cost of content creation and distribution.

So who does owe who in this industry, and how much?

How stable is this approach of viewing content as a distinct and unrelated overlay rather than as part of a bundle of network services and content? How large can such a content overlay get? Is this approach one that results in a fair and reasonable distribution of revenue between all the players?

In looking at the various options for the development of the Internet content economy, the overall observation is that perhaps we are simply too impatient for the "right" answer here. The Internet is a broad and highly efficient communications system, and by virtue of this alone it already undertakes a massive proportion of the global content distribution workload. The Internet content market has become a robust and highly valued market, but to attempt to pass some judgements on its future stability and future size is a tough ask right now.

Content always was, and still remains, a distinct overlay enterprise, and efforts to bundle the network offering with exclusive content work in neither the network provider's interest nor in the content provider's interest in the long run. Claims that content providers should pay ISPs for "overuse" of a network's resources are not readily distinguishable from what others would claim as forms of extortion payments intended to address the shortcomings in the ISP's own service tariff structure. Such claims are about as specious as earlier claims that that ISPs should pay content providers for content that their customers may well have been completely uninterested in, let alone be willing to subscribe to! In this environment of edge-to-edge based communication models there is no meaningful and productive intersection between network carriage and application content in terms of intertwining or bundling.

To take this a little further, bundling service and infrastructure, in whatever form, strikes me as yet another reprise of that 'convergence' myth that has been inflicted on this industry for some decades now, and is currently being articulated by industry access players looking desperately for monopolistic relief from the harsh realities of a highly competitive deregulated communications industry.

Extracting extortion payments are not a useful answer for this industry.

Carriage provision is at its most effective in terms of beneficial externalities when it enables and fosters innovative content service models. While it could be argued that attempts by carriage providers to intercept and degrade specific services simply provoke an innovative service response that attempts to further cloak the characteristics and identity of the service from the network, as a means of fostering innovation this is a remarkably constrained model.

There is the emerging suspicion that we will all benefit from further innovation in content service models if we continue to open up the network and the edge to unfiltered use. There is also the suspicion that models that rely on bundling and structural cross-subsidization are retrograde steps back into a world of tight controls and strong opposition to change.

So the best answer as to who owes who in this industry is that we will all benefit if we look at content as an overlay activity that does not directly participate in the network access enterprise. Network access and application content are distinct activities and price discrimination by the carriage provider between content services and content service providers is a wholly undesirable outcome for the Internet, let alone in broader terms of the relative roles of public carriage provider and content providers within the long-established concept of the common carrier.

Disclaimer

About the Author

GEOFF HUSTON holds a B.Sc. and a M.Sc. from the Australian National University. He has been closely involved with the development of the Internet for many years, particularly within Australia, where he was responsible for the initial build of the Internet within the Australian academic and research sector. He is author of a number of Internet-related books, and is currently the Senior Internet Researcher at APNIC, the Regional Internet Registry serving the Asia Pacific region. He was a member of the Internet Architecture Board from 1999 until 2005, and served on the Board of the Internet Society from 1992 until 2001.