Will Content Be King?

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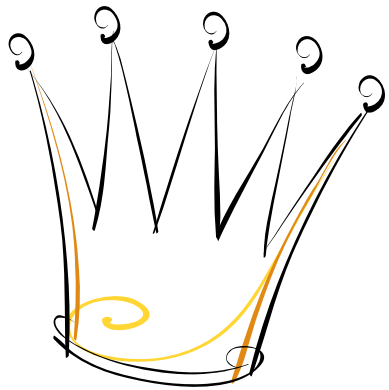
Robert Shaw
Deputy Head
ITU Strategy and Policy Unit

Agenda

- The Emperor's New Clothes
- What is Content?
- Contrast with Point-to-Point Communications
- Networks in Evolution: NGNs
  - IPTV as part of the NGN vision
- Some Regulatory Issues
- Lessons from History: Content vs. Communications
- Conclusions

The Emperor's New Clothes...



- Danish fairy tale by Hans Christian Andersen
- Two swindlers said they could make the finest suit of clothes from the most beautiful cloth
- This cloth was, they said, was invisible to anyone who was either stupid or not fit for his position
- Of course everyone pretended they could see the clothes
- Only the Emperor's son was not afraid and said "But he has nothing on!"

And the point is?

- The story is a metaphor for when an evident truth is denied by the many despite evidence to the contrary…
- So will "Content be King" ?
  - Is this "A Modern Fairy Tale"?
  - or is the Emperor not wearing any clothes?
- Is there an evident truth hiding here somewhere?

Let's Start with "What is Content?"

- From the Latin "Contentum" meaning "that which is contained"
  - that's not helpful…
- Popular use: material prepared/packaged by professionals to be disseminated to large numbers of consumers such as movies, videos/DVDs, books, newspapers, sports events

"Content Characteristics"

- Until now, typically distributed by mass distribution or broadcast systems;
  - Often packaged around geographical boundaries (e.g., DVD zones, iTunes)
  - Typically bound by national/regional licensing regimes
  - Often timed release in different geographical markets
  - Culturally embedded (more on this later)

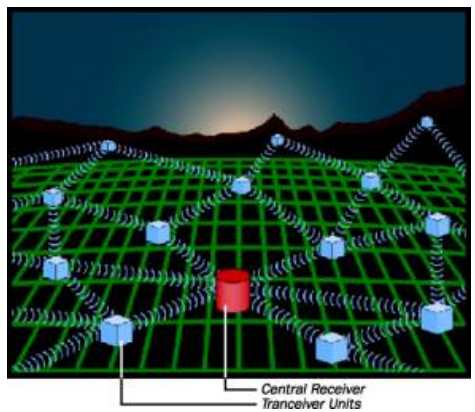
Contrast "Content" with point-to-point communications

- e.g., fixed, mobile, VoIP
- email
- chat (IRC, Yahoo, AOL, Skype)
- mobile text messaging
- Content and point-to-point can be complementary
  - e.g. voting on the Eurovision song contest, Pop Idol, X-Factor

Lordi – 2006 Eurovision Song Contest Winner

Big picture trends

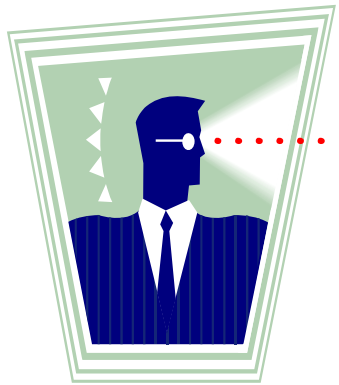
- Birth of Broadband
  - 250 million global broadband subscribers in about 6 years
- Growth in wireless networks and mobile data services
- Mobile overtakes fixed (2002)
- Convergence of IP-based networks with telephone & mobile networks
- End game: towards ubiquitous, pervasive, grid, mesh, wireless networks
  - anywhere, anytime, anything



Convergence of IP-based networks with telephone & mobile networks (NGNs)

- Faced with separate infrastructures for voice and data businesses, convergence and growing competition, almost all telecommunication operators and equipment manufacturers are making substantial investments in what can be referred to as *IP-Enabled Next Generation Networks (NGNs)*.
- IP-enabled NGNs can be seen as a logical progression from separate PSTN, mobile and IP-network infrastructures to unified networks for electronic communications based on IP
  - an extensive area of standardization within ITU
- In the coming years, IP-enabled NGNs will be deployed by numerous service providers around the globe

NGN Visions Differ



- PSTN on steroids? Internet on steroids?
- To fix the internet security mess?
- Monetize the internet? Emulate mobile players?
- Revenge of the telcos? Walled gardens?
- Attempt to move “up the value chain” into audiovisual content services
  - from “dumb pipe” provider into “content”
  - e.g., much of current US telecom legislation revision activity is about carriers getting video franchises

IPTV emerging as part of NGN vision

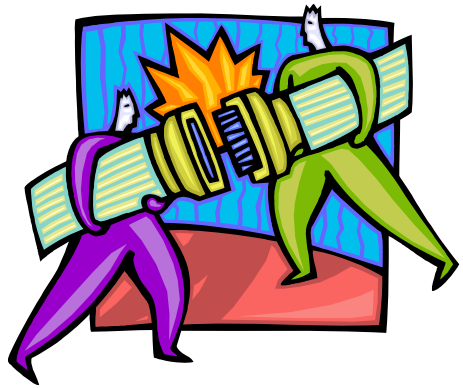
- **IPTV is a Content Delivery Service**
  - IP Broadcasting Service: Scheduled Programs delivered by IP-multicast streaming
  - Video-on-Demand Service: On-demand videos delivered by unicast streaming
  - Near Video On Demand Service: Programs delivered by IP-multicast in a carrousel manner.
  - Download Service: Content streamed or downloaded to a storage device on the terminal for later consumption.

Source: The IPTV concept model discussed in Japan, contribution from Japan IPTV companies to ITU standardization efforts on IPTV at http://www.itu.int/ITU-T/IPTV/docs/iptv006e.doc

IP-enabled NGNs means wave of major challenges for national policy makers and regulators

- Technologies and architecture of IP-enabled NGNs are fundamentally different from the PSTN
- This means new services, network topologies, associated costs and commercial models
- Convergence means that previously 'siloed' industry actors are crossing into each other's business sectors
  - conduit versus content
- Some ministries/policy makers/regulators are merging to reflect this convergence
  - e.g., Australian Communications and Media Authority

NGN Regulatory forbearance?



- Incumbent carriers state that commercial models for IP-enabled NGNs are at an early and evolutionary phase and that it is too early to discuss open access or wholesale mandated interconnection regimes.
- Also argued that IP-enabled NGNs, particularly the deployment of high-speed access networks (e.g. FTTx, VDSL), require massive investments and that "national regulatory moratoria" for incumbents are appropriate
- As market capitalization of actors demonstrate, capital markets appear to agree…

Value Redistribution in the Industry

INNOVATOR	EPS ($)	MKT CAP ($B)
MCIW	-11.22	6.5
SPRNT/NXTL	-0.31	34
VERIO/NTT	1.98	71.6
LEVEL3	-0.74	1.9
SBC/T	1.41	78
QWEST	-0.45	7.7
COGENT	-7.42	0.2
GLBC	-13.84	0.3
SAVVIS	-0.90	0.12
ABOVENET	n/a	n/a
WILTEL	n/a	n/a
TELEGLOBE	-0.74	0.2
C&W	0.70	4.7B
TWTELCOM	-1.12	1.0
(TWARNER)	0.48	82
XO	-2.18	0.4

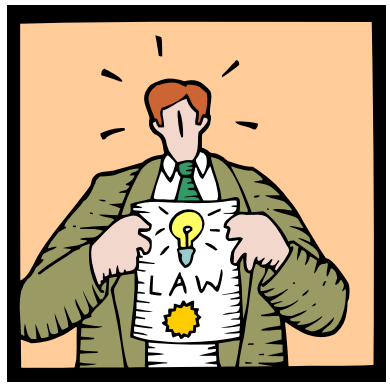
INNOVATOR	EPS ($)	MKT CAP ($B)
CISCO	0.87	108
GOOGLE	3.41	97
AMAZON	1.25	19
YAHOO	1.07	49
EBAY	0.73	51
JUNIPER	0.53	13
APPLE	1.56	47.
INTEL	1.33	141
VERISIGN	0.93	6.15
DELL	1.27	76.3
MICROSOFT	1.12	269B

source: finance.yahoo.com, 25 oct 2005

Kim Claffey – CAIDA – ARIN XVI IPv4 Roundtable – 26 October 2005

Source: Geoff Huston, Convergence at http://www.ptc06.org/program/public/proceedings/Geoff Huston_slides_M21.pdf

Others say not so fast…



- Competitive providers argue the opposite, saying that regulators need to ask whether, in the absence of wholesale economic regulation, will market dynamics be sufficient to ensure a competitive environment?
- They are worried that without immediate attention by regulators to NGNs, carriers will rapidly vertically integrate services and that bottlenecks will emerge, particularly for delivery of **audiovisual content**…
- But is it just the traditional carriers that we need to be worried about?

What about these guys?

- Mega-internet service providers like Google, MSN, eBay and Yahoo
  - strong brands, deep pockets
  - entering audiovisual content business
    - Most internet traffic will be video in a few years
  - entering voice markets and some infrastructure provisioning

Who's Leading in Triple Play moves?

Table 1. Triple-play pricing with unlimited PSTN calling plans, September 2005

Company	Type	Country	Price USD (PPP)	Price USD	Down (kbit/s)	Bit Cap (MB)	TV Chan
Free Telecom	ADSL	France	32.50	36.72	20 000		93
Casema	Cable	Netherlands	48.43	53.75	10 000		42
Versatel	ADSL	Netherlands	60.62	67.28	20 000		1
Kabel Deutschland	Cable	Germany	68.77	78.40	6 200		38
Cablecom	Cable	Switzerland	71.83	102.72	2 000		87
TeliaSonera	ADSL	Sweden	75.00	92.25	24 000		23
Dansk Bredbånd	FTTB	Denmark	78.87	112.78	10 000		30
France Telecom	ADSL	France	78.98	89.25	8 000		34
Lyse	Fibre	Norway	80.86	120.48	4 000		23
Mstar	Fibre	USA	90.26	90.26	15 000		24
Smart Telecom	Fibre	Ireland	91.38	122.44	2 000		70
Noos	Cable	France	91.89	103.83	10 000		100
Telenor	ADSL	Norway	98.54	146.83	4 000		25
TDC	ADSL	Denmark	100.68	143.97	4 096		18
Telewest	Cable	UK	106.50	119.28	1 000		100
Belgacom	ADSL	Belgium	113.54	124.89	4 000	30 000	42
SBC	ADSL	USA	124.97	124.97	3 000		60
Homechoice	ADSL	UK	129.89	145.47	8 000		55
Cogeco	Cable	Canada	144.05	151.25	10 000	30 000	88
Comcast	Cable	USA	149.79	149.79	6 000		70

- *Source: http://www.oecd.org/dataoecd/47/32/36546318.pdf*

But who pays for the infrastructure?

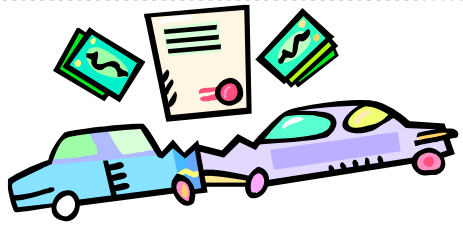
- "The Internet can't be free in that sense, because we and the cable companies have made an investment and for a Google or Yahoo! or Vonage or anybody to expect to use these pipes [for] free is nuts!"
  - Ed Whitacre, CEO of AT&T

Double standards at play?

- "Let's see if I can summarize [network neutrality debates]
  - BAD: Verizon and SBC want to charge for "premium" access to their network.
  - GOOD: Yahoo and AOL want to charge for "premium" access to their network/servers

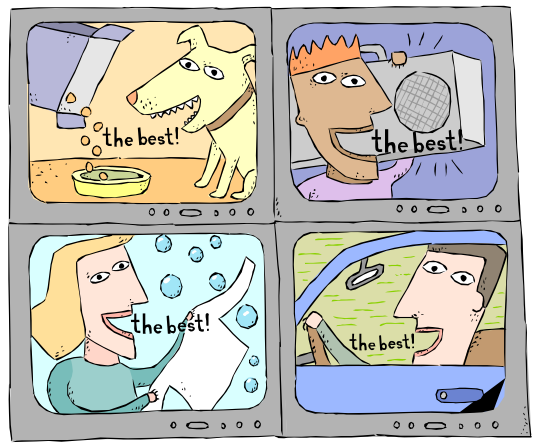
  What am I missing here?"
    - *Rick Adams, founder of UUNet, first US ISP*
- Ironic that large internet applications providers now argue for economic regulation….

Content Regulatory Issues



- Convergence is setting two very different regulatory cultures on a **rapid collision course**: the highly-interventionist regulatory culture of broadcasting and less interventionist (at least with regard to content) culture of telecommunications
- Particularly sensitive topic as the regulation of audiovisual content industries is culturally embedded and tied to national regulatory regimes consistent with cultural and religious values

Content Regulatory Issues



- What about advertising, public broadcasting, content diversity (e.g., support for national content production), licensing, quality, decency and protection from abusive uses and community standards?
- In Europe being tackled in the **Television without Frontiers Directive** - now renamed **Audiovisual Media Services Directive**

Will Content be A Modern Fairy Tale?

- Lessons from history…
- Technology-driven industries like telecommunications historically characterized by steady growth punctuated by “giant leaps” forward, usually when “new” technology is introduced

Communications Revolutions

- 1840's: telegraph
- 1870's: telephone
- 1890's: radio telegraphy or "wireless"
- 1920's: radio broadcasting
- 1950's: television broadcasting
- 1960's: geostationary satellite communications
- 1970's: computer communications
- 1980's: optical communications
- 1990's: internet and mobile
- 2000's: IP-enabled Next Generation Networks (NGNs) or Next Generation Internet?

1865: ITU Created

The Historical Perspective

- Napoleon: “History is the version of past events that people have decided to agree upon.”
- When we look back over history at any advancement in electronic communication networks, we tend to forget about the highs and the lows, the boom-bust cycles and the failed predictions about likely usage
- History teaches us to be humble…

We often get it wrong: telephone

- "For the first 30 years of the telephone, promoters struggled to identify the killer application that would promote its wide adoption by home owners and businesses. At first the telephone was promoted as a replacement for the telegraph, allowing businesses to send messages more easily and without an operator. Telephone promoters in the early years touted the telephone as new service to broadcast news, concerts, church services, weather reports, etc. Industry journals publicized inventive uses of the telephone such as sales by telephone, consulting with doctors, ordering groceries over the telephone, listening to school lectures and even long distance Christian Science healing! The concept that someone would buy the telephone to chat was simply inconceivable at that time."

- C. Fischer, America Calling

We often get it wrong: email

- "The popularity of email was not foreseen by the ARPANET's planners. Roberts had not included electronic mail in the original blueprint for the network. In fact, in 1967 he had called the ability to send messages between users "not an important motivation for a network of scientific computers" . . . . Why then was the popularity of email such a surprise? One answer is that it represented a radical shift in the ARPANET's identity and purpose. The rationale for building the network had focused on providing access to computers rather than to people."

- J. Abbate, Inventing the Internet

We often get it wrong: text messaging

- Few believed that sending text messages from one mobile user to another would be a useful function
- Korea: mid-2005 – 90 million text messages sent each day…
- In 2005:
  - United Kingdom: 29 billion
  - China: 300 billion!

Running the Numbers

- **Content:**
  - Hollywood box office revenues (2003): ~ 11 billion
    - with home rentals perhaps 3 x that (~ 35 billion?)
  - Global music industry revenues ~ 35 billion
- **Telecoms:**
  - US only telecom revenues (2003): 348.0 billion!
  - Global text messaging revenues for 2005: ~ 75 billion

Will Content Be King?

- Probably not… We tend to glamorize "content" and underestimate value of core business of point-to-point communications
  - The "killer application" of communications is always person to person communications
    - voice, email, messaging, chat…
  - People are more willing to pay for point-to-point communications than "content"
  - Not as glamorous as Hollywood but it pays the bills!

And Content is not without some major challenges…

- Regulation of audiovisual content tied to national regulatory regimes consistent with cultural and religious values
- Packaged around geographical boundaries and national/regional licensing regimes
- Initiatives like European Charter on Film Online trying to find balance between rightholders and online service providers
- With shift to audiovisual content, will NGNs and/or the internet become more "localized" to reflect national/regional content regimes?

Links

- Emperor's New Clothes:
  - http://en.wikipedia.org/wiki/The_Emperor's_New_Clothes
- ITU-T NGN Global Standards Initiative:
  - http://www.itu.int/ITU-T/ngn/
- ITU-T IPTV Focus Group
  - http://www.itu.int/ITU-T/IPTV/
- ITU Workshop "What Rules for IP-enabled NGNs?" at
  - http://www.itu.int/osg/spu/ngn/event-march-2006.phtml
- EC Audiovisual Media Services Directive Consultation
  - http://ec.europa.eu/comm/avpolicy/reg/tvwf/modernisation/proposal_2005/
- Statistical Abstract of the US: 2006 Indicators
  - http://www.census.gov/statab/www/
- European Charter on Film Online (released at Cannes 2006)
  - http://ec.europa.eu/comm/avpolicy/docs/other_actions/film_online_en.pdf

Thank you

International Telecommunication Union

Thanks to Andrew Odlyzko who has helped inspire the ideas in this talk