Broadcasting in the digital age

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Outline
From industrial silos to ICT ecosystem
Global trends
  South Africa?
  Mobile access and use
  Internet access and use
  Computer access and use
Arising policy issues
End of linear model- Industrial

Deregulation enable entry of new competitors in the production and distribution, digitisation create opportunities for innovation television services and and disruptive business models.
Broadband ecosystem
More than infrastructure...

Figure: The broadband ecosystem

Source: Kim, Kelly, Page (2010)
Convergence
Offering of services across traditionally distinct broadcasting and telecommunications platforms as a result of digitalisation and liberalisation of markets
ICT ecosystem

Internet as a global distribution network, stimulated by convergence between media, telecommunications and IT, facilitated the provision of TV programming over converged IP networks, across multiple devices - ‘TV anywhere’. Digital context of television production, distribution and consumption has evolved into a complex ecosystem.
Disruptive competition

Theory of disruptive competition and innovation pioneered by Clayton Christensen explains how and when a business model is likely to succeed through innovation and disruption of the market.

http://www.claytonchristensen.com/key-concepts/
Concept of innovation disrupted by gurus’ spat

Lepore is right to accuse Christensen and his followers of excessive generalisation from selected examples.

The observation that some companies have succeeded by disrupting their industries, while others have failed because theirs was disrupted, is reduced to the bald slogan “disrupt”. The observation of a tendency — that large companies struggle with discontinuous change — is translated into a universal law. But few generalisations in business carry the wide-ranging validity of the laws of physics.

Which is not to say that there is not much to be learnt from careful observation and thoughtful industrial reasoning. Apple’s, both itself and its suppliers, have been a source of rich analogies. Lepore, by contrast, is less helpful. She has neither the conceptual clarity nor the historical understanding of corporate strategies that Christensen’s has. She has, however, the virtue of devoting an entire book to the subject of innovation.

Yet the stakes here are not negligible. Disruption is central to the vocabulary of corporate strategy directors. Silicon Valley trumpets the disruption of everything. But Lepore is right to advise Christensen and his followers that the observation of a tendency — that large companies struggle with discontinuous change — is translated into a universal law. But few generalisations in business carry the wide-ranging validity of the laws of physics.

Which is not to say that there is not much to be learnt from careful observation and thoughtful industrial reasoning. Apple’s, both itself and its suppliers, have been a source of rich analogies. Lepore, by contrast, is less helpful. She has neither the conceptual clarity nor the historical understanding of corporate strategies that Christensen’s has. She has, however, the virtue of devoting an entire book to the subject of innovation.

So who wins this argument? There are three business models that meet the style standards of The New Yorker, and Christensen’s work is among them. First, it is a happy and readable book. Lepore, who has written down, has polished and rewritten, and often mangled, some of the claims of Christensen and his followers, that Christensen’s original arguments, and Lepore’s response, both suffer the tendency to overstatement that is common to all disruptive writing.
Global trends

Price of cable, satellite or IPTV services on the one hand, the innovative service and content available on the internet on the other coupled with the increasing quality of service of broadband delivery and easier access to Internet content on TV contribute to the switch to over the top services.

- Linear television model based on privileged access to TV set providing competitive advantage
- ‘Cutting the cord’ or ‘cord shaving’ or ‘cord shifting ‘no cord’
- traditional broadcasting ‘push’ model to individualised ‘pull’ model
- changes to the structure of the industry, in advertising and business models and to policy.
Responding to disruptive competition

To what degree are TV channels able to leverage their linear programming to play their aggregator role in an on-demand market?

› Accelerate internal processes, major investments and a willingness to give up some control

› invest in IT and review trade off between linear and on-demand distribution

› partner and merge
  • (NBC Universal and Comcast) - ‘vertical integration from camera lens to eyeball’ - Eli Noam
  • Mitigate chord cutting with channel cutting
  • Content providers disintermediate themselves by going to viewers directly
OTT video and net neutrality

Value chain for video distribution characterised by ongoing struggle between various business players to influence and control access that consumer have to content and applications. Net neutrality refers to the actions by operators that limit open access that end users have to the Internet. Limitations in the access that end users have to disruptive applications, VOIP

2.2 Control points in the value chain

There are a number of important assets or control points in the video value chain. A proper understanding of these control points is crucial to come to a useful value-chain based analysis of net neutrality. Other authors have also pointed at the importance of taking into account the full value network or full internet ecosystem in assessing the need or desirability of regulation, instead of concentrating on the activities performed in isolated markets. Ballon and Van Heesvelde (2011) investigate the role of platforms and associated control points in ICTs in general, while Ballon and Walravens (2008) study their role in mobile services in particular. They point at the specificity of ICT markets, which are often characterized by the creation of multi-sided platforms with different types of business models, involving different degrees of control over assets and consumers. Herzhoff et al. (2010) present a systems-theoretical analysis of mobile VoIP, starting from so-called tussles that emerge around control points. Eaton et al. (2010) develop models for analyzing business models built around control points in the value network for mobile internet and telephony.

In this paper we distinguish the following crucial assets in the value chain for internet video:

- A first asset is the possession of content or content rights, which is ultimately what consumers watch and pay for, either in money or in exchange for 'eyeballs', i.e. attention to commercials.
- A second important asset is the possession of a direct relationship with customers, enabling payment and billing transactions and, especially in combination with information on consumer profiles, sophisticated marketing and consumer loyalty campaigns.
- Third, the ability to guide people's attention and thereby their preferences and consumption patterns through search engines, electronic program guides, opening screens, and other navigation tools is also becoming an increasingly important asset in the online world.
- Last but not least, access to networks and bandwidth of course remains crucial. The distribution of these assets over the different players determines their position and negotiation power. All of these assets might come into play when content providers and (vertically integrated) network and service providers negotiate agreements on transport and delivery of video content.

Figure 1 Value chain for video with a two-lane distribution model for complementing (and partly competing) OTT and managed video services

Source: Nooren et al. Net neutrality and the value chain
Value chain asset for Internet video

Distribution of these assets over different players determines their position and negotiation power and come into play when content providers and vertically integrated networks negotiate agreements on transport of video content.

- **Possession of content or content rights that consumers watch and pay for (either in money or exchange for eyeballs)**
- **Possession of direct relationship with customers, enabling payment and billing transactions, especially in combination with information on consumer profiles, sophisticated marketing and consumer loyalty campaigns**
- **Ability to guide people attention and preferences and consumption patterns through search engines, EPG, opening screen and navigation tools**
- **Access to networks and bandwidth**
Net neutrality
Policy measures aimed at the public internet lane transfer issues to other parts of the value chain where struggle by players in video distribution value chain are trying to influence and control access that consumers have to content and applications.

- **Transparency as first, non-intrusive measure**
  - provide end users with meaningful insight into traffic management measures to make informed choices
  - focus at the public internet lane in the distribution part of the value chain
  - response constrained by bundled (triple play) strategies

- **No blocking/throttling as next step**
  - Reasonable network management

- **No retail tariffing by ISPs of OTT as business**
New net neutrality issues

Do these measures promote neutrality and openness of the public internet lane as intended or do they make the public internet lane less attractive for network operators as they introduce a number of obligations and restrictions in the network management and business models?

‣ Interconnection and peering
  • conflict driven by strongly asymmetric traffic profiles associated with large scale distribution of streaming video
  • Operators widen the managed services lane and focus their resources there

‣ Steering eyeballs: EPG, app stores, devices, cloud services
  • Search and navigation increasingly linked to devices and apps than to tradition search engine on the open used in battle for eyeballs and advertisers.

‣ CONTENT RIGHTS, PEERING, RESOURCE ALLOCATION, SEARCH
## ICT access in South Africa

Census vs RIA ICT Survey data

<table>
<thead>
<tr>
<th></th>
<th>Census</th>
<th>RIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household with fixed line</td>
<td>18,5%</td>
<td>14,5%</td>
</tr>
<tr>
<td>Household with computer</td>
<td>15,6%</td>
<td>21,4%</td>
</tr>
<tr>
<td>Household with ratio</td>
<td>76,5%</td>
<td>67,5%</td>
</tr>
<tr>
<td>Household with TV</td>
<td>65,5%</td>
<td>74,5%</td>
</tr>
<tr>
<td>Household with internet</td>
<td>35,2%</td>
<td>4.8% (household) 4.8% (individual)</td>
</tr>
<tr>
<td>Cellphone ownership (household)</td>
<td>72,7%</td>
<td>88,9%</td>
</tr>
</tbody>
</table>

Source: 2012 RIA ICT Survey; StatsSA 2011
Radio still main source of information
TV luxury good in several countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Households with Radio</th>
<th>Households with TV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>81%</td>
<td>78%</td>
</tr>
<tr>
<td>Uganda</td>
<td>77%</td>
<td></td>
</tr>
<tr>
<td>Rwanda</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>Namibia</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>70%</td>
<td>44%</td>
</tr>
<tr>
<td>Botswana</td>
<td>66%</td>
<td>18%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>63%</td>
<td>10%</td>
</tr>
<tr>
<td>South Africa</td>
<td>62%</td>
<td>9%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>41%</td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>34%</td>
<td></td>
</tr>
</tbody>
</table>

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ga
Less than a quarter of households have a computer and even fewer Internet access.
Share of households with fixed-lines

<table>
<thead>
<tr>
<th>Country</th>
<th>2007/8</th>
<th>2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>18,2%</td>
<td>18,0%</td>
</tr>
<tr>
<td>Namibia</td>
<td>17,4%</td>
<td>17,4%</td>
</tr>
<tr>
<td>Botswana</td>
<td>11,5%</td>
<td>11,0%</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>7,6%</td>
<td>15,0%</td>
</tr>
<tr>
<td>Ghana</td>
<td>2,6%</td>
<td>1,8%</td>
</tr>
<tr>
<td>Kenya</td>
<td>2,3%</td>
<td>0,6%</td>
</tr>
<tr>
<td>Cameroon</td>
<td>1,8%</td>
<td>2,2%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0,9%</td>
<td>0,2%</td>
</tr>
<tr>
<td>Uganda</td>
<td>1,5%</td>
<td>0,3%</td>
</tr>
<tr>
<td>Rwanda</td>
<td>0,1%</td>
<td>0,2%</td>
</tr>
<tr>
<td>Nigeria</td>
<td>0,3%</td>
<td>0,3%</td>
</tr>
</tbody>
</table>

Fixed-lines on the way out except Botswana, Cameroon, Uganda and Rwanda.
## Internet use and social networking

Income disaggregation - BoP vs RoP in South Africa

<table>
<thead>
<tr>
<th>Internet acces and use</th>
<th>BoP</th>
<th>RoP</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>15+ using the internet</td>
<td>18,4%</td>
<td>40,3%</td>
<td>21,9%</td>
</tr>
<tr>
<td>Used the internet first on a computer</td>
<td>52,5%</td>
<td>70%</td>
<td>17,5%</td>
</tr>
<tr>
<td>Used the internet first on a mobile</td>
<td>47,5%</td>
<td>30%</td>
<td>-17,5%</td>
</tr>
<tr>
<td>Are you signed up for any social network?</td>
<td>52%</td>
<td>78%</td>
<td>26%</td>
</tr>
</tbody>
</table>

Source: 2012 RIA ICT Survey
## Internet access and use

### Urban VS Rural

<table>
<thead>
<tr>
<th>Internet access and use</th>
<th>National</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>15+ using the internet</td>
<td>33,7%</td>
<td>41,3%</td>
<td>21,4%</td>
</tr>
<tr>
<td>Used the internet first on a computer</td>
<td>65%</td>
<td>64,2%</td>
<td>67,2%</td>
</tr>
<tr>
<td>Used the internet first on a mobile</td>
<td>35%</td>
<td>35,8%</td>
<td>32,8%</td>
</tr>
<tr>
<td>Are you signed up for any social network?</td>
<td>74,9%</td>
<td>78,9%</td>
<td>60,8%</td>
</tr>
</tbody>
</table>

Source: 2012 RIA ICT Survey
## Internet use

### Gender disaggregation

<table>
<thead>
<tr>
<th>Why individuals do not use the internet</th>
<th>National</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don't know how to use it</td>
<td>33.7%</td>
<td>40.6%</td>
<td>28.6%</td>
</tr>
<tr>
<td>no computer/internet connection</td>
<td>69.1%</td>
<td>67.6%</td>
<td>70.6%</td>
</tr>
<tr>
<td>Don't know what the internet is</td>
<td>64.4%</td>
<td>60.5%</td>
<td>68.2%</td>
</tr>
<tr>
<td>Too expensive</td>
<td>55%</td>
<td>53.8%</td>
<td>56.1%</td>
</tr>
<tr>
<td>no interest/not useful</td>
<td>38.3%</td>
<td>38%</td>
<td>38.5%</td>
</tr>
<tr>
<td>too slow, limited bandwidth</td>
<td>13.4%</td>
<td>15.9%</td>
<td>11.2%</td>
</tr>
</tbody>
</table>

Source: 2012 RIA ICT Survey
Ranking and cost of cheapest prepaid mobile product available in SA and Africa for OECD 40 calls/60 SMS basket.
Download/Upload speed kbps

- Balancem
- Telcom Namibia Mobile
- Vodacom South Africa
- MTN
- Smile Nigeria
- Smile Tanzania
- MTN Uganda
- Vodacom Mozambique
- MTN Nigeria
- CellC
- Smile Uganda
- Airtel Ghana
- Orange Kenya
- MTN South Africa
- Vodafone Ghana
- Tigo Rwanda
- Orange Uganda
- Mascom
- Airtel Rwanda
- MTN Rwanda
- Vodacom Tanzania
- Orange Botswana
- Airtel Uganda
- Airtel Nigeria
- Glo Mobile Ghana

- Average Combined kbps
- Average Download kbps
- Average Upload kbps
Q1 2014 - Value for money index
Combined average speed in kbps/1GB price in USD
Emerging public interest issues

Can traditional public service broadcasting value be preserved in this environment? What are the unintended consequences of retaining ‘positive’ content regulation? Can ‘negative’ content regulation (child pornography) be enforced?

‣ Net neutrality in broadcasting and video streaming?

‣ Prevent the ghettoising of public broadcasting?

‣ Public service broadcasting or public broadcasting service?

‣ Public broadcasting service funding or public service content funding?
Policy bottlenecks

- Institutional arrangements (interplay between state, regulator, market)
  - New executive arrangements impact on sector
  - Legal challenges
  - Enabling environment for growth and development of sector, economy, job creation
  - Impact on investment

- Digital migration - digital dividend
  - Set top box standards and subsidisation
  - Spectrum re-farming and assignment
  - Dynamic assignment technologies - white space
  - No DTT - the satellite and broadband solution?