Evolution of the Value Chain

Adaptation for Digital Content Delivery in a Broadband World

OECD
Working Party of the Information Economy
Digital Broadband Content Panel

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ICT Development and Market Structure

♦ Demand side:
  3 Adoption of ICTs leads to changes in structure among business users
  ◆ New internal organization, skills
  ◆ New patterns of outsourcing

♦ Supply side:
  3 New generations of ICTs lead to changes in market structure of telecom, information firms
  ◆ Shifting roles, complex interactions among firms in supply chain
Broadband As a Driver of Change

♦ Network operators
  - How to generate revenue to support investment in next-generation networks?
  - Replace loss of traditional business
  - What can you do with 100 MBPS that you can’t do with 3?

♦ Content providers
  - Old distribution methods are fading
  - Need to find new business models

♦ Intermediaries
  - Existing players reinvent themselves, as new ones emerge
Content Offers Over Broadband – Roles of the Players

- **Content Provider**
  - Management of access to content
  - Management publishing offer

- **Payment Management**
  - Supply of connection and access

- **TLC Operator**
  - Manager Technol, authorisation

- **Final User**
  - CONTENT-SERVICE
  - CONTENT-SERVICE

- **Content Service**
  - CONTENT-SERVICE

- **Management of the transaction**
Basic Activities in the Value Chain

1. Rights acquisition / manag.
2. Content protection.
3. Content production.
4. Sale of advert space.
7. Management of emerging publishing services.
8. Profiling user.
10. Payment management.
14. Other activities.
Adaptation of Online Providers

**Industry Shake-ups**

**Fall of the Wall**
1994-1995: The "walled garden" is opened to the Internet, and previously exclusive content providers migrate to the Web, potentially reducing the value of OSPs

**Flat-Rate Pricing**
Flat-rate pricing strictly limits ISPs' expected ARPU and causes a spike in usage, threatening to undermine the user experience and drive customers away

**Commoditization**
Internet access becomes commoditized with an increasing number of providers competing on price only, squeezing ISPs' already thin margins

**Birth of Broadband**
Broadband reaches 5 percent of households, threatening to make dial-up providers obsolete

**The End of Free**
July, 2001: ISP Planet declares the free ISP dead

**Spam & Viruses**
An increase in spam email and computer viruses decrease email's usefulness & reliability, with online subscribers churning away from unprotected, cluttered ISP accounts

**ISP Responses**

- In response to content migration to the Web, ISPs strengthen their proprietary interfaces, category organization (e.g., AOL’s graphical interface) & basic applications to retain subscribers
- Larger ISPs transition to an advertising-based revenue strategy and build out their networks to support increased traffic
- ISPs shed their physical networks, leasing modem banks & network access from others to focus on customer service & differentiation
- AOL, EarthLink & United Online use compression technology to accelerate dialup by “up to 5x faster”
- ISPs offer broadband wireless Internet access through Wi-Fi
- NetZero survives the transition from a free ISP to a paid service provider by maintaining a limited free product and offering significantly lower prices for unlimited access
- Spam filtering and QoS become prime marketing & competition points for ISPs

Evolution of Roles, Alliances for AOL

In Broadband Era, AOL has outsourced network functions, focused on content and applications through alliances with others.

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<tr>
<td>Content</td>
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<td>Netscape, Microsoft</td>
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<td>AOL/LEC</td>
<td>Genuity</td>
<td>MCI (UUNet)</td>
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<tr>
<td>Tier 1 ISP Access</td>
<td>AOL</td>
<td>AOL</td>
<td>MCI (UUNet)</td>
<td>“AOL for Broadband” customers provide their own network</td>
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**Application Key**
- Provided by AOL only
- Provided by AOL in conjunction with partner
- Outsourced completely to partner

MSDW reports that BYOA customers make up 9.3% of total AOL members in 2003.
Current Evolution of AOL – Customer Perspective

Source: AOL for Broadband Welcome page, AOL Press Releases
Elfenbein and Lerner (2003) examine a large sample of contracts for distribution between web portals and content owners. Contracts are complex, idiosyncratic:

- Allocation of revenues
- Exclusivity
  - For portal
  - For content owner
- Contingency provisions
BT Click&buy

Communication / acquisition

Delivery

subscription

account

$ affiliation

service

licence Click&Buy

payment

$
BT Click & Buy - Activities

1. Rights acquisition / manag.
2. Content protection.
3. Content production.
4. Sale of advert space.
7. Management of advanced publishing services.
8. Profiling user.
10. Payment management.
14. Other activities.
BT Yahoo! Broadband

♦ BT Broadband online gaming:
  - Customer receives ADSL connection – BT Broadband or BT Yahoo! Broadband
  - Compatible PS2 or Xbox console

♦ From btyahoo.com/ps2 and btyahoo.com/xboxlive users can access to:
  - multiplayer online games;
  - voice communication;
  - Downloading of new games

♦ The roles are subdivided as follows:
  - The video games are supplied by Microsoft and Sony
  - Yahoo! UK supplies services and Internet content to BT Yahoo! Broadband subscribers
  - BT Openworld supplies DSL connection
BT Yahoo! Broadband

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Content providers:
- TV operators and pay tv (Sogecable);
- TV and cinema producers and distributors;
- Telefónica is publisher/aggregator of content and final distributor of the service

TLC Operator:
- Telefónica

Billing Management:
- Telefónica takes care of payment in its telephone bill
1. Rights acquisition / Manag.  
2. Content Protection  
3. Content Production  
4. Sale of Advert space  
5. Packaging & distrib. content  
6. Marketing of publishing offer  
7. Management of emerging publishing services  
8. Profiling user  
9. Billing Management  
10. Payment Management  
12. Security/control offer  
13. Access Management  
14. Other activities
Service Control

- IM
- SMS
- Messaging
- VM Alert
- VM Retrieval
- iobi
- End User Portal
- Broadsoft Application Server
- PSTN/VoIP
- Call Control
- Outlook
- Conferencing and Collaboration
- Web Sharing
- Addr book
- Calendar
- Content
- Directories
- Conferencing
- And Collaboration
- Web Sharing
- Broadsoft Application Server
- L1 Gateway
- EPG
- Internet
Upstream/downstream Coordination of Network Functions

Local Admission and Policy Control

Allows network providers to monitor and control network resources based on user identification, security considerations, time of day/week, etc.

Bandwidth Management

Service providers can maximize the use of network bandwidth according to types of services.

QoS by Partner

The network provider can strike network management agreements with different 3rd party providers.

Online Gaming via Converged Networks

- Caching close to the customer
- The ISP can collaborate with the ILEC to ensure bandwidth availability across the servers administering the network games and to ensure security and parental controls at the network level
- Because of the high performance requirements, the ISP also signs a more rigorous repair response contract
Cautions for Future Policy on Digital Content Delivery

♦ Information markets characterized by
  1. Rapid technological change which require investments not just in technology but in resources, adaptation of companies’ structure
  2. Risk in launching new services which require adaptation of the consumer

♦ High degree of coordination required up and down supply chain
  1. Highly specific contracts with new parties that need to share the information
  2. Each firm’s role evolving towards a new environment

♦ Risky to:
  1. Predict market structure
  2. Draw lines, define rules
  3. Transfer old business models to emerging markets
Cautions for Thinking About Digital Content Over Broadband

- All the players must reinvent themselves
  - New roles, new business models

- Markets characterized by
  - Rapid technological change
  - Risk

- High degree of coordination up and down supply chain
  - Business relationships complex, idiosyncratic

- This morning, we will hear specific examples from:
  - Music, scientific publishing, online video gaming

- Risky to:
  - Predict market structure
  - Draw lines, define rules
  - Transfer old business models to new markets