



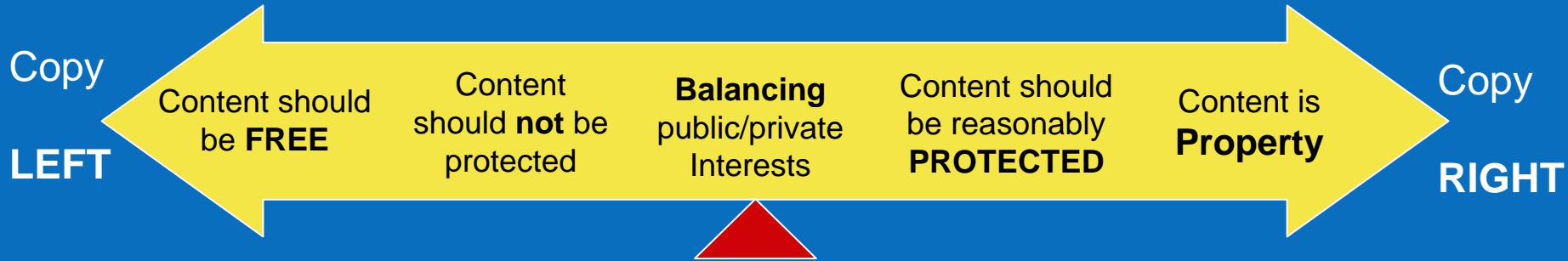
ITU and EBU Presentation

**A perspective on trends and
policy challenges in the digital
content delivery environment**

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Intel's Policy Perspective



Our Content Policy – a *Balancing* act

Respect for Intellectual Property, Rights Holders and Consumers

A Reasonably Protected Digital Environment is Necessary Infrastructure For Digital Future

Protected Digital Environment Should Provide Consumers Flexibility, Portability and Choice

Markets, Not Mandates, Stimulate Innovation and Deliver Consumer Value



Basic Content Protection Security Tools

- **Technology is Basic Tool**

Content distributed in encrypted form. Technology and “keys” are licensing “hook”.

- **License Agreements create Root of Trust and govern Products**

Decryption keys subject to license; license sets out rules for products/manufacturers.

- **Copyright Laws (DMCA, EUCD) target Pirates**

Neither License Nor Technology works against Pirates.

Effectiveness of Specific Tools

Casual copier
Hobbyist
Hacker
Small scale pirate
Professional pirate

Technology



Licensing



Laws



Vision: . . . voice, video- and data-streams can be exchanged seamlessly on all-digital networks, competition between delivery platforms will intensify .

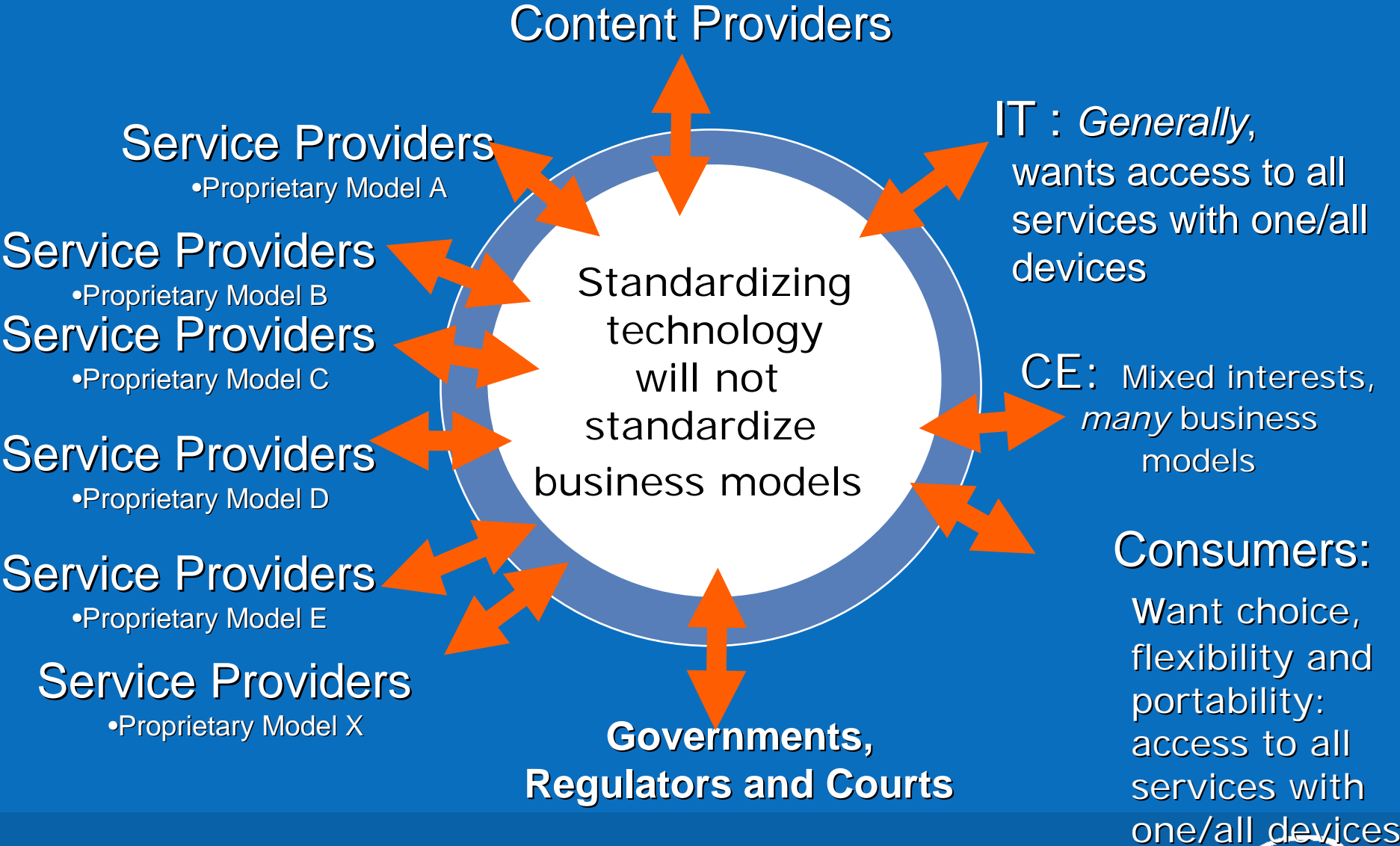


Vision assumes consumer choice, flexibility and portability based on interoperability



Interoperability Challenge:

Competing Interests and Business Models



Can laws compel interoperability?



Multiple Services on Common Platforms Maximize Consumer Choice and Leverage Volume Manufacturing

Personal & premium content
Internet ecosystem
Open environment

Premium content
Service provider ecosystem
Closed environment
Standards Based Security*

Open Platform

Service Security
(e.g. STB)



PC

Service

Computing Platform



Some Key Policy Challenges

Service: How to bring proprietary verticals to common platforms?

Standard Security: Consumer is "not" trusted from service perspective;
Need for common robustness and compliance?

Service/Content Protection: Protection, Consumer policing

Privacy and Consumer Notice: Device control, personal information,

Security Challenges:

Security Goals: Keep “Honest People Honest”

- “Reasonable Protection”
- Perfect systems not possible/necessary (CSS)
- Commercial Viability is Key

Technology Challenge: Cost-Effective End to End Systems

- Many security standards assume user is trusted
- Low Cost Technology Licenses
- Hardware and/or Software, PC and/or CE Implementation OK
- Reasonable System Resources
- Reasonable Implementation Costs

Trends:

- Increasing security requirements creating a bidding war
- Bidding wars lead to proprietary HW and gate maximum choice



Privacy and Consumer Notice

“Protecting Content”

- Content is encrypted
- Consumer buys and “opts in”
- Devices maintain protection of the specific content.
- Examples:
 - DVD Content
 - MSDRM Sourced Content
 - Cable/Satellite Content
 - AACCS Content

Use Technology to Enable a Protected and Productive Digital Market.

“Policing Consumer”

- Consumer gets clear content
- No consumer “opt in”, BUT
- Device looks for an invisible mark and won't play content anyway
- Examples:
 - DVRA/Holling: Screen CGMSD
 - SCD: “Spy-ware” limits coping
 - DVD: Audio Watermark?
 - AACCS: Audio Watermark

Use Technology to Police Consumer in Home and Internet.

What Notice is adequate?



Consumer Notice and Privacy

“Tracking”

- Content marked at distribution
- Mark identifies the distributor
- Mark is invisible to consumers
- Escaped Content traced back to distributor
- Examples:
 - “United” mark on airline content

Use technology to track escaped content back to licensed distributors

“Policing”

- Invisible mark inserted into content in consumer device
- Mark is invisible to consumer
- Mark identifies consumers
- Escaped Content forensically traced to consumer
- Examples:
 - CableSTB adds consumer ID
 - Purchased audio file contains purchaser’s email address

Use Technology to Police Consumer in Home and Internet.

What notice is good enough?



Levies, Private Copies and Market Dynamics

- Markets function best when consumers with full information pay directly at the point of sale for all rights associated with specific goods and services.
- Levies undermine market principles and emphasize importance of information and notice.
 - What rights do I get, express and implied?
 - What is my total cost, direct and indirect?
 - What technical limitations
- What is the role of government? Private parties?

