

# Technology Convergence

Current and Future Trends

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# What is Technology Convergence



# What is Technology Convergence

- Convergence is enabled **digital** technology which has been replacing **analogue** technology.
  - Analogue Technology - transformation of content into a direct electronic copy of such content (electronic waves)
  - Digital Technology - encoding of content into digital numbers (0s and 1s)
- Distinguishable characteristics of these two technologies underpin changes to industry structures.
- Resulting in a unification of the back end of all communications infrastructure, amidst increasing proliferation of I/O devices in the hands of consumers

# Current and Future Trends in Convergence Enabling Technology



# Current Trends

- **The move towards ‘triple play’ service offerings by single service providers**
- **The heart of the solution tends to be common IP based packet switched infrastructure that delivers the services**
- **Usual features seen are centralised open standards servers and OS with multiple onboard service management and billing applications, plus SIP or session initiation protocol**
- **Current trend is to develop technologies that enable easier and scaleable migration of service provision from legacy to IP based infrastructure**

# Current Trends contd..

- **Key issues remain: e.g. security and secure encryption against packet sniffing without compromising performance and QoS**
- **Interoperability – triple play/single play IP based vendor solutions need to be easily interoperable with existing infrastructure, plus freely scaleable**
- **Already seeing solutions address such concerns.**

# Future Trends

- **Improving technologies on the infrastructure front allowing improved capacity usage and throughput – e.g. Dense Wave Division Multiplexing**
- **Breakthroughs in Wireless also likely to be another key driver. Cost effective and secure WiMax deployments could result in paradigm shifts away from 2G voice and data services**
- **Improvements in security and interoperability coupled with falling costs of convergence enabled technology solutions should lead to accelerated migration from legacy systems over time**

# Future Trends contd..

- **Industry Structures likely to fuse at the back end with the back ends of telecommunications, media and pure data services, even whilst there continues to be a proliferation of I/O devices in consumer hands at the front end**
- **Obvious concerns about competition – the convergence of back ends can lead to additional competitive dynamics**
- **As such, policy and regulation must actively engage with industry to understand the pros and cons of the innovations, so that policy and regulation may be geared accordingly to encourage innovation, maintain competition and ultimately regulate for the benefit of consumers**



# Interoperability, Standards, Policy and Regulation



# Interoperability and Standards

- **The only constant is change – and standards are no exception, especially in a convergence environment**
- **Commercial reality is that there is likely to remain friction between individual vendor developed standards and those developed collaboratively and/or on an industry basis**
- **Ultimately the market is the best judge, and policy and regulation can reflect that by taking a technologically neutral stance within licensable categories**

# Interoperability and Standards

- **As such, it is preferable not to impose standards on industry, as innovation will always seek to fill efficiency gaps and the demand they create for better solutions**
- **At the same time, it is worthwhile encouraging interoperability, and indeed mandating it if incumbents attempt, or are likely to attempt to limit interoperability with their systems/infrastructure**
- **Ultimately the market is the best judge, and policy and regulation can reflect that by taking a technologically neutral stance within licensable categories, whilst encouraging and/or mandating interoperability**



**Any questions?**

