

What are the key opportunities and threats raised by the growing use of services over IP, such as voice (VoIP) and television (i.e. IPTV)?

1. Introduction

The liberalization and privatization of the telecommunication industry has changed the competitive landscape over the last 10–15 years. Now the Telecommunications industry is facing further radical change. The convergence of networks, technologies, devices and content, primarily driven through the prevalence of IP networks is taking hold.

The development of multimedia services and solutions of ever-increasing sophistication is blending the boundaries of telecommunication, media and entertainment, information technology, and consumer electronics. With blended bundles, service providers may offer end users personalized services that are simple, seamless, secure and portable - accessible via any network, via any device from anywhere (Lucent Technologies, 2005).

Fixed line operators that traditionally provide telephony and Internet access are now expanding their proposition with television services. They are aiming to provide the triple play, the combined offer of telephony (VoIP), broadband Internet access, and IPTV/VoD over a single IP network.

2. VoIP

From an economic perspective, the use of IP-based networks promises to reduce prices to consumers, and the costs of market entry for operators, especially for long-distance and international calls.

Introduction of IP allows carriers to offer integrated services (voice, text, audio and video) over a single connection, there by further enhancing value to their customers and contributing to profits.

VoIP can significantly lower the cost of delivering telephone service. The cost of switching and transporting voice traffic is dramatically lower than traditional methods.

IP helps spur innovation and development. Infrastructure development on IP can take far less time and cost much less compared to the enormous costs of building out and maintaining a state-of-the-art PSTN network.

2.1 Securing and threats

As voice technology meets the world of IP, many IT, telephony, and business managers are concerned about its safety from attack. Voice requires high security standards, equals to those of high-security data application. The information in voice calls - strategic, personal, or financial - can be just as proprietary as damaging if intercepted as that in data (Crailing, 2004). Moreover, no enterprise or service provider can afford a denial-of-service (DoS) attack that shuts down voice communications.

Many threats to IP voice are, like DoS, familiar from data communications: viruses, worms, Trojan horses, man-in-the-middle-attack, packet sniffing, IP spoofing, password attacks, trust exploitation, and the like (Crailing, 2004). Then there are threats such as toll fraud explicitly directed at voice. Application-layer attacks can specifically target call management, voice mail, and unified messaging systems (Crailing, 2004).

3. IPTV

In a few years, the way subscribers watch video content will change dramatically. Rather than having to conform to a program schedule, the viewer will select all video content from an on-demand menu:

- TV Services (Broadcast Video Services, Digital Video Services, Pay-Per-View, Premium TV, Electronic Program Guide - EPG, Personal Video Recorder - PVR, Network Personal Video Recorder – PVR, Video on Demand [VoD], Standard Definition Streams, High Definition Streams)
- Entertainment/Interactive Services (Gaming, Gambling, Advertising, Distant Learning, Security Applications)

- Integrated Services (Integrated Telephony [i.e. TV Caller ID]), Integrated Internet Services [TV Email, IM, Messaging, Web browsing]

Content providers and video operators will make serial programs available on a menu on a regular schedule, and the consumer will simply download the new episode at leisure. PVR will be used in the event of a live or time-sensitive event, such as sports programming or news.

Operator video offers should match the levels of QoS to which the customer is accustomed with other video services.

Customer expectations are higher for video services than voice and broadband. Customers will not tolerate poor quality of picture and sound, service outages or unpredictable network recovery timeouts, and such occurrences would result in increased churn and damage an operator's brand equity (Altgeld, Zeeman, 2005).

Secure access and protection of personal data are important factors to build trust. Telecom service providers have to leverage their trusted brands to reinforce the message of security to customers. For content providers content protection is a major concern.

3.1 Business model

The appropriate business model in today's market depends on considerations such as the following:

- The provider's strategic objectives (e.g., retain or win xDSL customers, increase xDSL usage, provide the triple play, or build new and profitable TV business, etc.)
- The target customers (e.g., TV mass market or PC-centric youth)
- The market (e.g., low cable TV competition or strong triple-play threat)
- The regulatory and legal environment (e.g., satellite dish installation restricted or prohibition against bundling [triple play])
- The chosen or inherited technology (e.g. the unicast, multicast, or download distribution technology; the xDSL, FTTx, or cable access network; the network's quality of service standards, etc.)
- Potential or existing partnerships with content providers (e.g., exclusive premium content, specialty content, etc.)

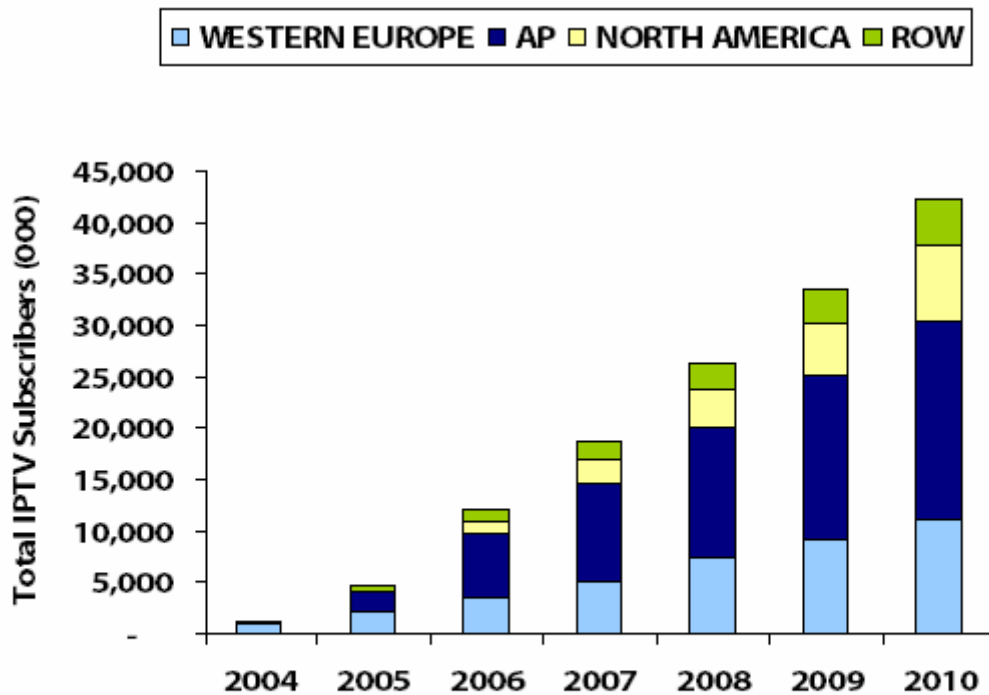
Business models can vary in their characteristic form, and be mixed or combined (Altgeld, Zeeman, 2005).

3.2 IPTV subscriber number estimates

It is anticipated that the global IPTV subscriber base will grow from just above 5 million in 2005 to nearly 40 million by 2010. By Pyramid Research, it is estimated that Europe will account for about 45% of the world's IPTV subscriptions. Over the next five years, the forecast is that the European IPTV base will grow to almost 10 million (Aytar, Pyramid Research, 2005).

Asia is another growth area for IPTV. In volume terms, it is expected the Asian market to add nearly 18 millions IPTV subscriptions between the end of 2005 and the end of 2010. The real upside lies in China, which forecasting at 10 million by 2010 but could hit 20 million depending on the flexibility of the regulatory framework (Aytar, Pyramid Research, 2005).

IPTV subscribers by region



RoW: Rest of the world.

Source: Pyramid Research estimates.

4. Conclusion

Content on demand is probably one of the key applications that will drive the success of IPTV. In addition to broadcast TV, the customer can have access to a wide range of content whenever he wants. Ease of use, enabled by intuitive user interfaces and effective portal services including the EPG, as well as performance criteria such as channel change speeds or immediate viewing are essential for a positive user experience. Especially in today's phase of IPTV's implementation, initial experiences are important; otherwise users will stick with traditional services.

References:

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