STRATEGIC WHITE PAPER

A Guided Approach to Broadband Entertainment Services

The broadband entertainment market presents many new growth opportunities for service providers and content aggregators alike. While it is still too early to determine the clear market leaders, early successes in the space suggest that this market will emerge as one of the new frontiers in the broadband arena. The opportunity is evident, but to seize it — and stand apart from the ever-growing crowd — requires courage, know-how, and the conviction to find the right partners with the right business model.

ALCATEL

Introduction

Service providers around the world have been debating the merits of entering the broadband entertainment space for some time. They have been looking for new revenue and business growth opportunities spurred on by declining traditional revenues and aggressive new competitors. In 2003, broadband entertainment deployments by service providers in each region have demonstrated strong demand for entertainment services. The debate is no longer about entering the broadband entertainment market but rather about which entertainment services to offer and how best to deploy them.

Alcatel believes there are five fundamental questions on the minds of service providers considering entry into the broadband entertainment services market.

1. What are the market opportunities and challenges for service providers?
2. What are the prospective business models and which models are most likely to succeed?
3. What key groups comprise the value chain and what roles do they play?
4. What is the optimal framework for successful broadband entertainment service deployment?
5. Which service providers have performed early trials and how has the market reacted?

This paper addresses these questions by looking at industry best practices, lessons learned from early adopters, and our own experience as a market leader in both the voice and broadband markets.

Table of Contents

Rising Market Opportunities and Challenges

In the spring of 2003, a European study conducted by InSites E-Research and Consulting asked Internet users to choose the most attractive set of advanced services and the price points they'd be willing to pay. The output showed significant consumer interest in personalized and interactive entertainment applications. Video on Demand (VOD) ranked as the most sought after service both by males and females with a target spend of 30 Euros/month, followed by interactive TV and online gaming. Other market sizing studies such as the Cahners In-Stat study of broadband television subscribers predicts that 15.9 million subscribers globally will take up this service by 2006.

The entertainment industry is also solidly behind enabling a broadband entertainment services model. They've proactively embraced the opportunity, taking a lesson from their brethren in the music industry. The entertainment industry views online distribution as a welcomed alternative to increase their bargaining power over the ever-powerful video rental distributors. The content community has seen the value and is making the content available to broadband subscribers around the world. As an example, Disney Corporation is leveraging online distribution to enable a lower cost business model and reach new market segments.

In support of this industry wide momentum, the consumer electronics industry is developing a large number of broadband-ready devices, ranging from game consoles and set-top boxes to mobile terminals. Recent examples include game consoles from Microsoft and Sony, Home Gateways from Thompson and Samsung and other intelligent devices like wireless PDAs and smart phones. With all of these devices in the hands of consumers, the need for networks capable of delivering broadband content ready for consumer consumption becomes critical. Thus, a market enabled by consumer devices complimented by broadband networks will accelerate adoption rates, and open new revenue streams to service providers.

These market changes offer service providers the business opportunities they need to drive new revenue, business growth and subscriber loyalty. With broadband entertainment services, service providers also have the opportunity to increase their average revenue per user (ARPU) while providing a solid defensive strategy against fast moving competitive providers. Cable Multiple Service Operators (MSOs) and Competitive Local Exchange Carriers (CLECs) have plagued incumbent service providers with competition targeting access speeds and bundling of advanced services. Further, the growing popularity of personal video recorders (PVRs) has sparked a significant shift in the value proposition of broadcast TV providers. Ad-skipping features within PVRs are causing broadcast TV providers to consider pre-emptive action, which would involve service providers deploying PVRs as part of a bundled service offering with control mechanisms to minimize the revenue loss in advertising.

...And the Challenges?

For broadband entertainment, the most significant challenges lie in the opportunities themselves. The sheer complexity of managing the broadband entertainment value chain, the numerous alliance initiatives, and systems integration challenges all require significant effort in business logic, customer trials and standardization. The next few sections will help clarify some of the issues, and later in the paper Alcatel will highlight initiatives to help service providers tackle these issues.

Prospective Business Models

Broadband entertainment is all about selling entertainment services such as video, music and gaming over broadband networks. In the broadband entertainment value chain, as in its offline equivalent, content flows from the content owners, through a distribution network, to the content consumers. In this case, the service provider operates the distribution network. How the service provider positions itself in the service delivery process will define its role in the entertainment services value chain. We'll look at three models here, and offer our recommendations on the most promising model to take to market.

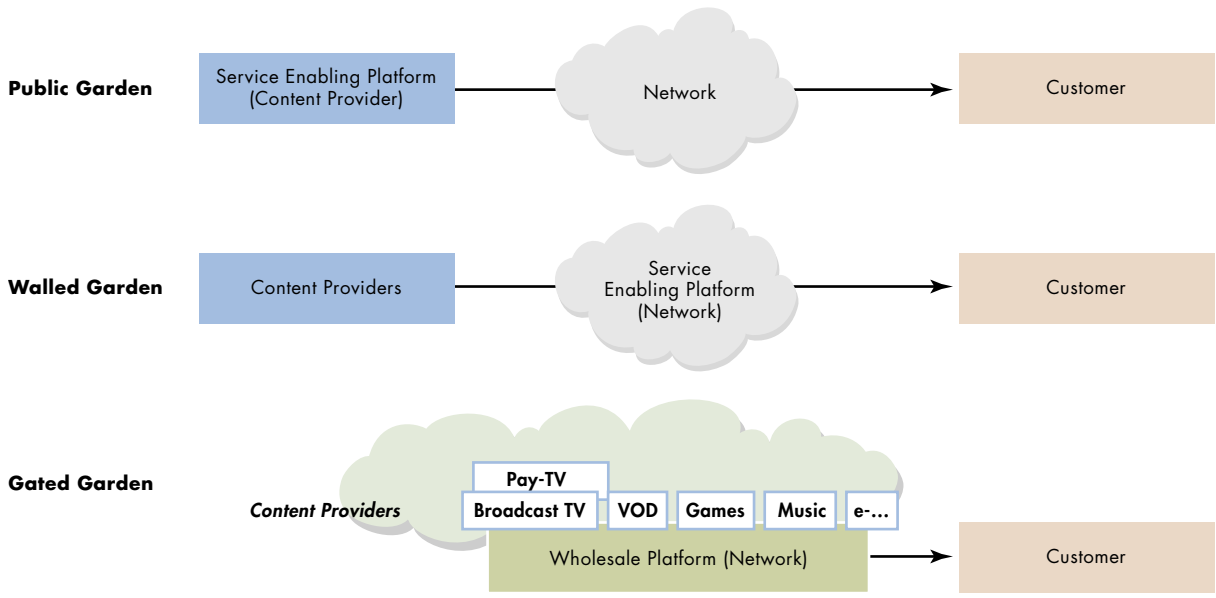
> **The Public Garden Model**

In this model the role of the service provider is limited to providing a transparent connectivity pipe between the consumers and the content owners. When a consumer wants access to content, he or she uses the service provider's network infrastructure to seek out the content owner's website, select the desired content, and consume it. This is much like the Internet, as we know it today.

From a consumer's point of view, the choice in content sources is extremely large. Anyone who has content can put it online and then, in principle, it is available to everybody connected to the Internet. On the other hand, it is nearly impossible for the content provider to guarantee a highly satisfying user experience. For example, when the network connection between the content owner and the consumer is congested, the user experience is sacrificed — especially for video. In addition, the wide spectrum of content sources and its fragmented nature often make it a very difficult and frustrating experience for consumers. With independent payment options for each content source, consumers are reluctant to purchase on-line content in fear of potential fraud.

This is equally the case for content providers. Not only do they establish no long-term customer relationships, but payment authentication and verification becomes quite cumbersome. It is also quite difficult for content providers to conduct targeted marketing for their content, since they have no way to selectively target new consumers.

Figure 1 - Business Models for Broadband Entertainment Services



For service providers, this is an unattractive business model. They generate a flat connection fee from their broadband consumers independent of bandwidth consumption. Since bandwidth consumption is a cost driver, service providers would in effect have no control over their network costs. In addition, content providers are using the service provider's infrastructure to generate business without compensating the service provider proportionally for the associated cost.

> **The Walled Garden Model**

The walled garden is the other extreme in the business model spectrum. Here the consumer has access to a limited scope of pre-defined content. All of the content is licensed by the service provider from the content parties and is offered as a service pack to the service provider's customers. The service provider handles all content layout, authentication, royalty tracking and reporting, billing, and quality of service.

For the consumer, this model eliminates the risk associated with credit card payments in lieu of phone bills as a more trustworthy billing mechanism. The end user experience is also guaranteed since there is only one party (the service provider) involved in the end-to-end network path. The presentation of the content is consistent, bearing the mark of the service provider. The limitation of this model is that consumers are restricted in the choice of content that is available to them.

For content providers, this model allows them to focus on their core business, which is to produce content. They can then allocate the distribution of content to the service provider who in turn handles the billing, customer support and quality of service.

Finally, for the service provider, this means that they are now positioning themselves as the center point of the value chain. Since the service provider is taking care of the billing, every penny flows through the service provider's books. Typically, the service provider is compensated for content distribution in a form of revenue split between themselves and the content providers. The trouble with this model is the level of exposure the service provider undertakes to facilitate the service. The service provider should expect a significant amount of resource consumption dedicated to content aggregation, layout, maintenance and support.

> **The Gated Garden Model**

The walled garden model is clearly superior to the public garden approach for all involved parties, but suffers from limited content aggregation and many of the other support issued identified above.

This is where the gated garden model shows its promise. In addition to the content that the service provider is offering in the walled garden model, the service provider establishes a toll gate concept through which a multitude of content parties can offer their content in exchange for a revenue share with the service provider. The service provider is still expected to take care of quality of service, authentication, billing etc. The main enabler for this business model is a horizontal platform that not only provides the features of the walled garden model, but maintains a business-to-business (B2B) interface with content parties, who are held responsible for the content while the service provider focuses on the network and user experience.

This business model has been tested and proven to be effective. FastWeb, an Italian CLEC, has shown that the gated garden model is the best model to manage a huge variety of content options without the associated operational burden. FastWeb focuses on the delivery network and the billing systems while handing off content responsibility to their own subsidiary company, which manages the various content providers, and shares in their revenue stream. The same model has been proven in Japan with the widely successful DoCoMo I-Mode service. I-Mode employs the gated garden model by asking the scores of content vendors to manage their content while tying into DoCoMo's billing systems. DoCoMo also relies on a revenue sharing model with their content partners to eliminate the operational burdens of content management.

Recent discussions at forums like the BCDF and initial consensus among content and telecommunication providers suggest that the gated garden model will emerge as the business model of choice. Given that this model is predicated on open platforms, we view it to be a strong enabler of standardized solutions based on innovative and competitive technologies.

Broadband Entertainment Value Chain and Key Contributors

A complete analysis of the broadband entertainment supply chain is a daunting task, so we'll describe the three major categories that represent the bulk of the supply chain.

- **Content Providers:** This category includes such players as movie studios, music labels, content aggregators, broadcasters and programmers. Their role is to produce, aggregate and sell consumer desired content.
- **Content Retailer:** These are the organizations that distribute the content produced by the content providers. Players here are, for example, cable and satellite distributors, and newly emerging telecom operators.
- **Content Consumers:** These are the consumers of content and are at the end of the value chain. They desire access to content any time, from anywhere and on any terminal.

These three categories represent the stakeholders in this business and the challenge is to find the business model that fits the needs of all three. This may seem straightforward on the surface, but the reality is that the relationships that exist between these and other market players are complex and ever changing. To illustrate, consider the following issues:

- The multitude of components and their integration coming from networking vendors, application vendors and consumer electronics vendors that deliver on broadband entertainment networking technologies and devices
- The often-overlapping value chain for service delivery with various players and technologies causing friction and affecting customer service
- The dynamic regulatory environment that plays a prominent role in determining the nature of the relationships between the various market players

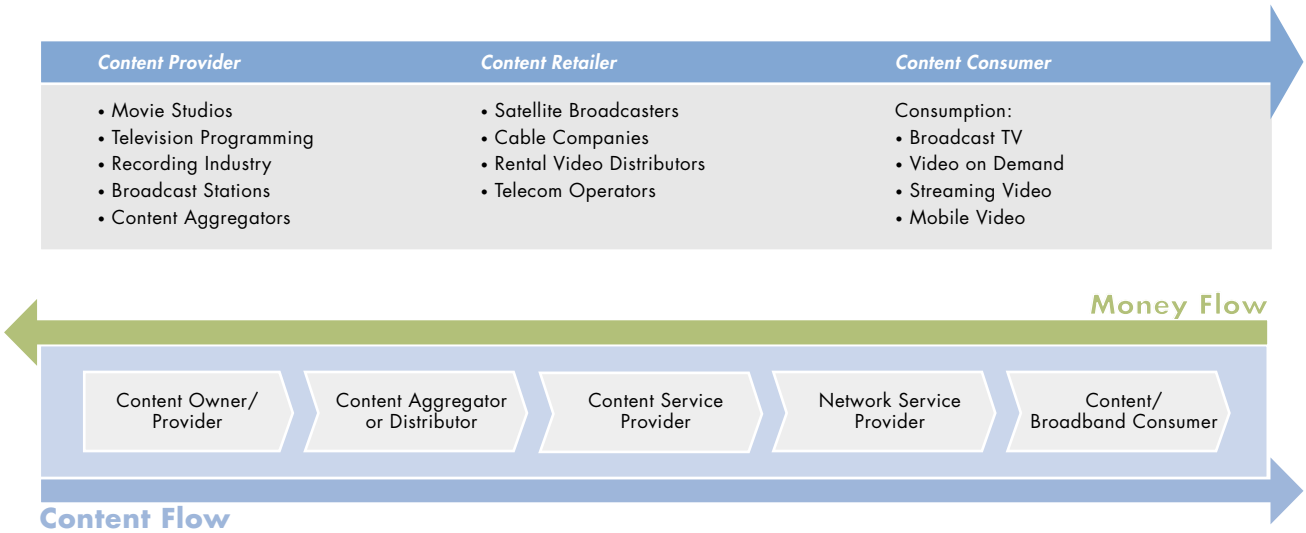
Optimal Framework for Broadband Entertainment Service Deployment

The gated garden architecture is emerging as the model of choice, as it gives rise to greater economies of scale, strong brand recognition, and innovative technology development. The optimal framework, which is likely to be built around this architecture, will comprise the following items:

- Consumer desired content sources
- Business relationships with the broadband entertainment supply chain
- Go-to-market service model
- "OPEN" network platform for service deployment

Alcatel has long been a leader in broadband access, and in facilitating broadband entertainment services. That technological leadership and market experience prompted Alcatel to establish and lead the pioneering work conducted within Dances with Alps (DwA). DwA was a cross-industry initiative to bring the various stakeholders in the entertainment industry (content, service providers, and technology) together with a

Figure 2 - Broadband entertainment value chain



common goal of building broadband entertainment services. As of fall 2003, DwA has transferred its concern to a like-minded group to expand the scope of influence by merging with the Broadband Content Delivery Forum (BCDF).

BCDF is an independent trade association that addresses both technology and business issues affecting the end-to-end delivery of broadband content and services to consumers and businesses. Members work collaboratively to gain consensus on technology and business requirements, documenting collective thinking and sharing findings with standards bodies. http://www.bcdforum.org/

Alcatel's chairmanship role at BCDF brings with it the responsibility to guide the organization toward standards-based solutions that bridge the gap between content and service provider industries. Also within the context of our chairmanship, Alcatel in conjunction with BCDF, has authored broadband service delivery architectures for rich media services that have garnered the support from content and service provider industries.

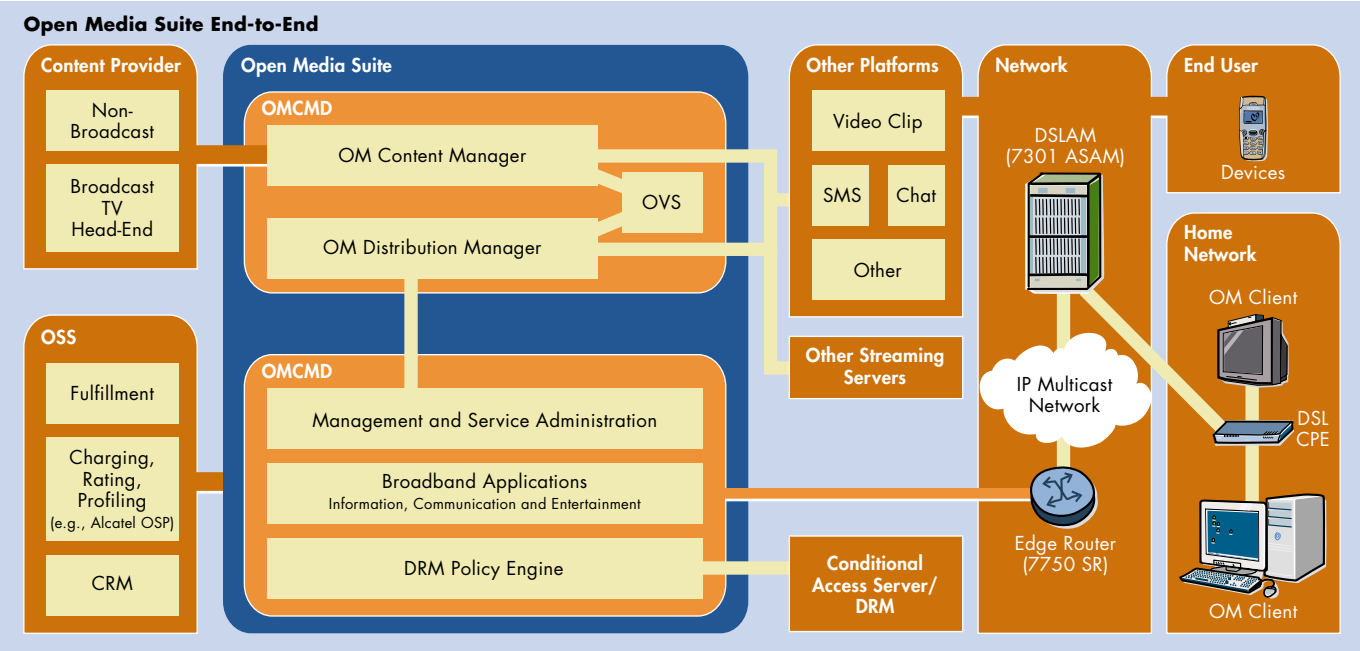
After years of chairing this initiative and leading the broadband entertainment technology charge, Alcatel has developed the most viable framework and practical business models that satisfy consumer demand while also satisfying the current and future business objectives of the market players.

With its comprehensive network of certified partners, Alcatel has spent a great deal of time and effort to develop and field-test an open broadband entertainment services platform, strengthened by acquisitions in 2003. The resulting Alcatel Open Media Suite (OMS) enables the timely and efficient deployment of standardized value-added broadband entertainment services through its 5950 Open Media Platform and 5959 Open Media Content Management and Delivery System.

The Alcatel 5950 Open Media Suite includes:

- An open platform architecture to support multiple applications, multiple terminals and a standards based implementation.
- A software development kit and support program that allows service providers to extend and customize pre-integrated

Figure 3 - The Alcatel Open Media Suite



Open Media applications or implement other applications supplied by third parties to meet local requirements and opportunities.

- Back-office systems that support the management of subscribers, services packaging and content.
- Standards based interfaces towards service provider OSS, content providers, and content protection systems.

Trials, Deployments and Market Momentum

Some service providers, spurred on by strong competition from cable companies, have already launched their broadband entertainment services offering. Not surprisingly, these early adopters experienced some hardship in terms of technical integration and business case scenarios. For instance, the initial capital expenditure (CAPEX) for deploying broadband entertainment services per subscriber three years ago was five to six times higher than it is today.

While broadband entertainment services are still relatively new, broadband entertainment service providers have begun to deliver standardized and scalable services and products. Market pioneers like Kingston Communications (UK) and Aliant (Canada) have played an important role in helping the industry to develop innovative and cost effective services tailored to the unique needs of end users.

Over the last two years many trials have been conducted and the market is beginning to demand broadband entertainment services more loudly. Gartner Group conducted a survey of carriers in EMEA and asked about their interest in launching entertainment services in the near future. The survey showed interest peaking from 42 to 76 percent on a year over year basis. As the market and business models mature, the relative success of others will help market players more easily assess the technological and commercial viability of the various business models and determine which model best meets

Figure 4 - Global Deployments of Fully Customized Broadband Entertainment Services Using Alcatel OMS

their broadband needs. Having conducted technological trials and explored a variety of business case scenarios, operators like FastWeb (Italy), Yahoo! BB Cable TV (Softbank, Japan), Spanish Telefonica, France Telecom and Telekom Austria have positioned themselves at the forefront of this emerging market.

Success stories like Italy's FastWeb, which is delivering voice, data and video services to tens of thousands of users over both fiber and DSL infrastructures, demonstrate the growth potential for broadband entertainment. FastWeb has publicly stated their ARPU growth in video services to climb from 78 Euros/year in Sept. 2002 to 272 Euros in Sept. 2003. They have reached this goal by offering a mix of pay channels contributing 149 Euros and VoD contributing 123 Euros of the total 272 Euros/year. This growth in ARPU has been complimented by subscriber uptake that has reached an enviable 70 percent by Sept. 2003 — a feat accomplished within a year's time.

FastWeb has employed the walled garden model when it comes to managing their own VOD service via license agreements with movie studios, but has chosen to migrate to the gated garden model for reasons of scale and added variety of content. A similar trend is emerging in Japan, where competition from broadband Cable TV is actively pushing the incumbent service provider to begin deploying triple play services. Yahoo Japan had started with the public garden model for hosting content provided primarily by Yahoo, but has now migrated to the gated garden model to expand their entertainment services offering to a wide variety of content providers. Over the next six months, Alcatel expects to see more competitive service providers and incumbent telcos alike begin deploying broadband entertainment services over advanced fiber- and copper-based networks.

In most of the trials and deployments mentioned, Alcatel plays an important role. Ranging from the supply of components to complete turnkey solutions, Alcatel continues to use its mix of software products, hardware integration and professional services to solidify its position as the global leader in delivering cost effective, bundled broadband solutions.

Conclusion

The broadband entertainment market presents many new growth opportunities for service providers and content aggregators alike. While it is still too early to determine the clear market leaders, early successes in the space suggest that this market will emerge as one of the new frontiers in the broadband arena.

While it is clear that telecommunications companies have made the decision to enter into this space, it remains to be seen how aggressive they will be in upgrading their network infrastructure and adopting the right business model for bandwidth-intensive entertainment services.

Alcatel believes that the market for broadband entertainment services has taken root and is in a unique position to transfer its business experience, industry partnerships and technical depth to capitalize on this opportunity. Many successful customer deployments to date were enabled by Alcatel's system integration, professional services and software products. The flexibility for service providers to align with their unique network operations and customize services for a differentiated subscriber experience demonstrates the maturity and breadth of Alcatel's portfolio.

The opportunity is evident, but to seize it — and stand apart from the ever-growing crowd — requires courage, know-how, and the conviction to find the right partners with the right business model. Alcatel can help.

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