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<table>
<thead>
<tr>
<th>Content</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Editors’ Note</td>
<td></td>
</tr>
<tr>
<td>Converge and Innovation Strategy for Service Provision in Emerging Web-TV Markets</td>
<td></td>
</tr>
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<td>Convergence Now?</td>
<td></td>
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<tr>
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<tr>
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<tr>
<td>Digital News - Paper, Broadcast and more Convergence on the Internet</td>
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<tr>
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<td>35</td>
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<tr>
<td>Order Form</td>
<td>35</td>
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Convergence and Innovation Strategy for Service Provision in Emerging Web-TV Markets

by Bodo Thielmann and Michael Dowling, University of Regensburg, Germany

Abstract

The convergence between online or internet services and television has often been represented by the term “Web-TV”. But one must make a distinction between the type of service Web-TV and the company named “WebTV Networks” who pioneered the business in 1996 and is now a subsidiary of Microsoft. There are also important strategic questions when positioning a new product and service category between the existing markets for online services or TV. Furthermore, we argue that one must distinguish between the direction of innovation and the added value through combining both TV and online content, services, and technology. The strategic positioning along this converging value chain will be an important question for the providers of content, service and transmission, software technology and hardware manufacturers from the online service, personal computer, and TV industries. For players in each industry, it seems possible that they can provide incremental extension of core business by creating convergent solutions and coordinating their distinct competencies and several other critical success factors. Finally we look at barriers and enablers that will face an introduction of this service category in Europe and suggest directions for further research.

A Concept of Convergence

In order to understand the developing Web-TV market, one must first define convergence. Since there is not a clear definition of convergence in the strategic management literature we developed the following one in a previous work:

“Convergence describes a process change in industry structures that combines markets through technological and economic dimensions to meet merging consumer needs. It occurs either through competitive substitution or through the complementary merging of products or services or both at once.” (Dowling; Lechner; Thielmann 1998)

There are many examples of innovation in technology and services eventually leading to a merging of online and television markets in the overall context of convergence between the telecommunications, information, and media sectors. Technologies enable the integration of functions including the emergence of hybrid products between formerly separated categories and the creation of new or additional functions. Mergers, acquisitions, alliances and other forms of collaboration – often enabled by deregulation – affect the industry structures as well as firm-specific managerial creativity to bundle products and services, to join competencies to create new solutions and to remove barriers between different customer segments. The needs dimension refers to the functional basis of converging technologies and industries. Without the customers’ willingness to demand and pay for new forms of fulfilling old needs or the discovery and stimulation of new so called “latent” needs between the old schemes there will be no converging markets. This implies a more customer-focused analysis of industries than in traditional concepts (e.g. Porter 1980), including substitutes and complementors relevant to the functional solution to his needs. However, if convergence is the significant trend, the basic form can differ on a spectrum between competition and complementarity – leading either to a conglomerate market or to the emergence of a new market or market segment. In our previous paper we marked these phenomena as paradigms of 1+1=1 versus 1+1=3 convergence of markets.

Applying this framework to convergence of online services and TV, we observe that the horizontal or inter-media-convergence between online and television may lead to competition or complementarity between both media, their contents, and the actual demand for the service. TV markets are almost saturated, and as a result providers are seeking customer retention and added value to defend their revenues. Online services are often a substitute for TV viewing and therefore take away customer viewing time in the most attractive socio-demographic segments. This is also leading to a movement in advertising spending, for example, advertising and transactions already count for nearly 20 % of America Online’s (AOL) revenues. Online service providers (OSP) hope to extend their customer base to the mass market by establishing alternative devices that reduce the complexity of PC to a minimum for surfing the Internet and providing E-mail service functionality. Many online service providers (OSP) share the vision of leveraging market penetration by 30 to 50 % (estimated according to announcements; e.g. “AOL anywhere”, T-Online) within the next few years, mainly through TV-based access.

To get a sharper image of the innovation categories between online or internet services and television we distinguish a change in the service platform or device as well as a simple additional transfer of service to another platform versus totally new functions
Platform extensions to date have had only limited attractiveness. Diverse forms of web-boxes (Internet-on-TV) are struggling with poor quality of TV-screens as a display medium for web-pages. PC-based television also faces quality or convenience limitations to become an equivalent substitute. Several push or webcasting concepts (automatically updating websites such as the Pointcast service) have so far failed to develop mass markets. Simulating a broadcast function on the internet also brings in pull intelligence, content selection, and channeling. Although it is not yet viable as a business model for service providers, ‘streaming video’ sequences on demand has become a standard software feature (e.g. Real Player) enhancing the attractiveness of entertaining websites and especially of higher bandwidth access provision (e.g. @ Home Network). Added value in this category also comes from integrated solutions within business intranets or dedicated newscasting services combining online information with business or corporate television programs. In the following section we focus on the category of Enhanced-TV which is most likely to become an important consumer market segment.

Cooperative and competitive strategy issues in the innovation process for Web-TV

Innovation strategy can be seen as important driver of convergence. The complementary relationship between distinct providers contributing to the Web-TV value chain raises questions about the innovation process, incentives to forward or backward integration, establishment of bottlenecks, and gatekeeper positions or at least bargaining on drivers of value. Market entry and diffusion of the service face critical success factors.

Different Business Opportunities for different types of Providers

“WebTV Networks” started displaying websites on the TV-screen including transcription to TV-standards via a set-top-box before the company introduced a second generation with Enhanced-TV functionality (“WebTV Plus”). An embedded signal in TV-Programs marks the existence of related background information on the programmers’ or advertisers’ website that can be accessed by a simple click on the “TV-Crossover-Link”. A comparable technology solution among others is provided by “Network Computer Inc.” (NCI), a subsidiary of Oracle. Based on this technology the service provider “NetChannel” competed with WebTV Networks until purchased by AOL in 1998. Supported by its strategic partner Sun Microsystems AOL is supposed to launch a comparable Enhanced-TV service offering called “AOL-TV” by the end of 1999 and may become the most important competitor to Microsoft-WebTV.

The technological invention of the Web-TV solution was based on a coordinated innovation process between the service provider and equipment manufacturer (see figure 2). Consumer electronics firms hope to enter these new markets by offering Web-TV set-top boxes and thereby regain a market segment from the demand for computer hardware. “WebTV Networks” licensed its technology to Philips, Sony, Mitsubishi and others for production, co-promotion and distribution of boxes. The long-term strategy of Microsoft is to promote a new de-facto software standard for alternative Internet-devices in the emerging era of “pervasive computing” where
television sets will take a main part. In a variation of the well-known “Wintel”-alliance between Microsoft and Intel, a strong market position for Microsoft in this market would allow the penetration of the operating system “Windows CE” with a third generation of WebTV’s technology. In cooperation with cable or satellite network providers it could be leveraged over up to 65 million households in the USA – about one third of them is expected to adopt web access through set-top boxes by 2003 (Datamonitor 1999). Microsoft would then offer its proprietary end-to-end concept to cable- and satellite-TV operators. They are planning to roll out digital set-top-boxes coinciding with the implementation of a digital television system in the US until year 2006. But in 1998 a cross-industry agreement defined a minimum common specification on enhanced TV programs compatible with broadcasting, cable, and digital television standards and with the World Wide Web Consortium to stimulate market penetration and assure building of a critical mass and to limit Microsoft’s position. The “Advanced TV Enhancement Forum” (ATVEF) consists of platform providers (Microsoft, Oracle, Intel, Sony), carriers representing 85 % of US-TV subscribers and more than 50 % of US-TV programs. AOL’s strategy seems to be the limitation of cable-TV and internet carriers to the pure sourcing of transport capacity. WebTV Networks’ technology is also marketed as an end-to-end-service to TV programmers, the strategy is to cooperate with most of them and with big advertisers for implementation of the Enhanced TV architecture in their content formats. “WebTV Networks” finally offers an online service to end customers (although they can choose another ISP; see figure 3). The value of the consumer service and the aggregated customer basis of “AOL-TV” is to be leveraged across advertising and Electronic Commerce transactions which would then be the most important revenue streams for the service provider.

In summary, in this brief case study we analyze an ongoing redefinition of interfaces, roles, and distribution of value-added activities between the different steps in the value chain for WebTV. This analysis suggests that the path of innovation towards convergent media requires effective coordination strategies, that is service providers must balance the different innovation cycles of the relevant industries or partners. As a result, collaboration becomes a necessity and incentives must be created for bundling or building distinctive competencies through strategic alliances. In particular, value drivers in the whole value chain will result from a strong positioning of the “architectural” (software) business and/or service providers with access to customer information (e.g. Microsoft Network/WebTV, AOL-Sun). Besides possible vertical integration this means competitive or substitutive aspects in terms of value shifts. Through that mix of cooperative and potentially competitive relationships, the business model will be altered according to the bargaining power of the service provider. As other authors have pointed out: in broadband online markets neither pure content nor pure transport will provide excessive profits and “... the internet ensures that synergy does not exist between the transport of bits and the provision of information services” (Garcia-Murillo; McInnes 1998 ). Web-TV service providers collaborate with content providers but attempt to gain more of the packaging activity traditionally performed by TV stations. They also try to profit from competition among carriers and at the level of internet service providers. There will be increasing competition between different types of aggregators (OSP or unbundled ISP, originated from data, telephone or television carriers like @Home) all compet-

![Figure 2: Linkage between Technology and Service Innovation Processes for Web-TV](image-url)
ing for customer relationships and critical mass in this emerging interactive media business with a window of opportunity on E-Commerce revenues. Although there will remain a slight inter-media substitution between pure online and television, their will be added value achieved by combining both media, segmenting the cross-media market, and using synergies.

Critical succes factors for diffusion and market development

Having set-up a new value chain, the remaining stage of the innovation process is diffusion in the marketplace. The penetration of WebTV Networks’ service grew significantly with introduction of the enhanced-TV version in 1998 to about 700,000 North American subscribers, which is still a modest number, but large compared to other similar services. Addressing the full market potential and driving the diffusion of enhanced-TV Service provision faces some critical success factors. There was pressure on Microsoft-WebTV to open its proprietary technology to a cross-industry agreed standard to ensure non-discriminatory offerings. Another key success factor will be bundling the product and service with set-top-boxes for digital television. In the long run, interactive or enhanced-TV functionality will probably migrate into digital TV boxes or even directly into television sets as a dominant design. Because of the attractiveness of content, the cooperation with as many television programs as possible to provide enhanced-TV formats will be crucial for a more advertising and E-commerce based business model. But aggregating advertisers and transaction-seekers directly and thus by-passing the packaging role of television programs raises competition to them. Microsoft and AOL will have to adapt their business models in order to play a broader game, that is they will have to find a “modus vivendi” with TV Stations on sharing revenue streams from advertising and transaction commissions. Segmenting the heterogeneous customer potential will be helpful to get better market acceptance by providing them with adequate functionality and pricing schemes. There are at least two target groups to be distinguished by their online experience – the “absolute beginners” who need a simple and convenient access to certain web-content and e-mail service, and those who are using the service as a convenient addition in the living room to their desktop located elsewhere (28% of WebTV Networks’ subscribers also own a PC). Further segmentation is possible with different versions of hardware (low-cost or high-level boxes, limited or unrestricted web access), subsidization by service fees, usage pricing and advertising revenues. Finally additional killer applications may be shopping, games, music and video on demand – the same categories media and communication corporations tested in their interactive TV trials some years ago. Today, the reason for their failure can be seen in neglecting the ubiquity, universality, and economics of the internet that could be better combined with the strengths of television in stimulating and guiding the mass audience. In summary, these arguments clearly reflect the general criteria for diffusion of innovations especially in critical-mass communication markets (e.g. Rogers 1995). Important are available content and communication service, based on compatibility with existing applications, low barriers to usage through attractive (penetration) pricing, moderate complexity and a certain proximity of the user interface to existing habits. All over a relative advantage has to be obvious in terms of customer perceived value.

Transfer and Implementation of Enhanced-TV in Europe and Germany

Although the online market in the US is usually about 18 months ahead of Europe, a quicker acceptance and penetration of enhanced-TV devices and services can be expected in European countries. Architecture providers such as WebTV Networks and NCI are already partnering with European carriers in trials (e.g. WebTV Networks with British Telecom and the BBC or with Deutsche Telekom and ZDF) to imple-
ment the technology with European TV standards. *Enablers* to that innovation are a huge customer potential beyond PC penetration with an interest in access to the internet. For example, it is forecasted that in Germany 1.6 Million dedicated set-top-boxes will be in the market by 2001 (Inteco 1998) and an even higher penetration rate is expected for Spain, France and Italy (Datamonitor 1999). Teletext, to which Enhanced-TV would be the functional substitute, has a relatively high usage. Nearly 22% of German TV viewers and up to 36% of online users (Emnid 1996, GfK 1998) use it on a daily basis for general and program information and at the same time the majority wishes improvements in quality and user interface of the service. TV programmers are using this service to cross reference offerings, in some case coupled with commercials. Furthermore there is already a rich portfolio of TV-oriented Websites (from stations to single programs) in the German language internet. In the long run Enhanced-TV could implement narrowcasting special interest information channels that, in contrast to the US, could not be sustained successfully by the European television system because of small audiences, e.g. weather, learning, or hobby channels. Important *barriers* for an introduction to the German market will certainly be the measured service pricing of online and connectivity services that will affect the costs of enhanced-TV offerings. Such costs will reduce the willingness of many people to adopt and try out such new services. In most European countries the Cable-TV network infrastructure needs an upgrading to sustain two-way-interactivity and in the short run it has to be connected to telephone lines in peoples’ homes. Nevertheless AOL Bertelsmann is expected to roll out an “AOL-TV” offering in Europe and has even more interest in developing this market as a competitor to the Pay-TV segment Bertelsmann gave up in Germany recently. T-Online is motivated to leverage its branding and leading position over this additional online market and to generate more traffic in the network business for Deutsche Telekom by introducing an Enhanced-TV service. These and other European players’ activities clearly show that Web-TV is still in the stage of standardization and configuration of the value chain as shown above. But there are favourable arguments for a significant market potential and a rapid diffusion.

**Conclusions**

Convergence of online services and television is technologically enabled by the combination of functions and economically pursued by major players in the multimedia industries. It is likely to become an important market (segment) in the form of Enhanced-TV with the integration of more functionality – at least the basic functions “Internet-on-TV”. “Enhanced-TV” and receiving digital television will probably be a successful leverage to reach critical mass audience. And by gaining direct customer relationships, these services can be segmented and even personalized by the service provider to stimulate a convergence of needs by effective marketing efforts. Although it will possibly push online penetration slowly but slightly for the next 20% it is unlikely to replace pure online or TV markets. At least in the short run we expect a dominance of complementary convergence (1+1=3) over competitive aspects. The phenomenon of convergence can be seen in other contexts as well, e.g. between fixed and mobile telecommunications a horizontal competition and/or complementarity could be analyzed with our concept of convergence. Definition of new interfaces and distribution of value drivers, e.g. network effects or sales channels, in the newly combined underlying value chain will have to be analyzed in the same way. There is also need for further research on organizational and interfirm linkages for combination of innovation processes and for marketing theory to discover latent needs and the migration of customer perceived value.
Inteco “The TV will not bring the Internet to the masses”,


Wössner, M. “Vorlesung zur Medienwirtschaft”, MCM Institute, St. Gallen, 3.2.1999.

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