

Bridging the gap

Telecom operators, internet companies, and the media world seem to be locked in mutual suspicion of each other. Many companies in all three camps are limiting their business opportunities by being unable or unwilling to work with the others. However, hope is on the horizon: IMS can provide a framework to bridge the respective businesses models.

IT'S NO SECRET that industries tend to hold a negative perspective on change. But sometimes change cannot be avoided, and companies that fully embrace the changed circumstances are more likely to overcome the challenges those circumstances bring. However, in the case of the convergence of telecoms with the internet and media businesses, the parties engaged have radically different mindsets and value propositions that would appear difficult to reconcile.

Perhaps we could benefit by looking to history to see if we can learn from industrial convergences in the past: in the last hundred years, the story of the consumer retail and mass-media businesses has been, for the most part, one of enthusiastic cooperation in creating more efficient markets, better distribution, more choice, and happier customers.

Let's start with an examination of the current situation, and lay out the challenges from each industry's perspective. Then we'll look at what problems existed in the early years of the convergence of consumer retail and advertising businesses, and the solutions they came up with. Then we'll see if we can usefully apply similar models in networked multimedia. Finally, we'll look at some technologies that can be employed to make this possible.

The great divide

Traditionally, the telecom business has used retail models (subscription-, content-, or usage-based pricing) to mone-

tize network assets, while most profitable businesses on the internet have adopted the broadcast/advertising model in order to generate revenues. Companies from each side of this divide tend to view the other with suspicion, in fear of losing their customers, markets, or place in the value chain.

The telecom industry has delivered its "goods" for most of the last century as state monopolies, well insulated from the concerns of market forces. The result was a bureaucratic mentality: risk averse, driven by regulation, and more concerned with broad consistency than with innovation. The years since deregulation have led to more competition, but old habits die hard so it is taking some time to change from focusing on protecting technologic ownership and "killer app" type of thinking, to placing the emphasis on maximizing user value and experience.

The internet is currently being used mainly as a mass-publishing tool, and has not seen much success in delivering other business models as users expect almost everything delivered on the internet to be provided free of charge.

The media world is still reeling from declining sales due at least in part to pirating and file sharing. It has been slow to adopt digital distribution channels, fearing disruption of its existing channels, leaving consumers to seek content via other and sometimes illicit means. Countermeasures deployed by the industry have not led to any noticeable decrease in piracy, but rather wasted





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investments in failed technologies, mounting legal costs, and general unhappiness for both the industry and consumers.

It doesn't take a rocket scientist to see that each of these three parties excels in a part of the value chain that is causing grief to the other two. Telecoms offer mobility and tight identity management; the internet offers tools to efficiently make available and find content; and the media industry provides professionally produced music and video. So it's only natural that they are gravitating towards each other. It should come as no surprise however that they are adopting a cautious pace, trying not to make things worse while progressing toward the networked multimedia world. And it does take time to get all these parties to achieve a working consensus on their places in the new value chains, margin sharing, business and technology linkages, and – not least of all – adjusting their company cultures to the new reality.

The traveling salesmen of Babylon

So can we draw useful parallels from the convergence of retail and mass media over the last century?

The retail trade goes back to the mists of human history. Archaeological evidence shows that hunter-gatherer tribes in their seasonal migrations were trading seashells and flint for tool-making over 100,000 years ago. But it was the agricultural revolution over 10,000 years ago that led to human populations becoming concentrated in villages and towns, providing the opportunity for a professional trading class to emerge. Traveling merchants went from town to town, trading goods produced from far away in exchange for what was locally produced. Some towns became places where merchants concentrated (market towns). Then came the industrial and transportation revolutions, and the quantity and variety of goods available to the average person expanded exponentially. But this created a few problems: the local general store could not afford to stock so many products, so how could consumers find

out about what goods were available for purchase? Conversely, how could manufacturers create awareness and demand for their offerings?

Advertising comes to the rescue

The concept of advertising also has a long history; in almost every culture it immediately followed the invention of written language. Archaeologists have discovered commercial messages in ancient Mesopotamia, Egypt, and Greece. With the invention of the movable-type printing press in the 1430s, literacy spread to include much of the total population – and its immediate offshoots were newspapers and magazines that provided a ready audience for print advertising around the world.

In the late 19th century, falling printing and paper costs produced the right tool to solve the “retail abundance” issue, and the mail-order catalogue was invented to provide the link between consumers and manufacturers. If you needed something, you could be sure to find it in the pages of the *Sears, Roebuck and Co.* catalogue if you were American or in Aristide Boucicaut's *Le Bon Marché* catalogue if you were French. Catalogue sales quickly became the prevalent retail model for much of the industrialized world.

But then nothing ever lasts, as two new industries – the automobile and radio broadcasting – came along to shake things up. With the advent of the personal car, people could travel much farther and thus could visit a greater number of more varied retail outlets. Mass media such as commercial radio and then television joined printed media and began telling and then showing consumers which products they could buy. Broadcast radio and TV also developed into providing content “free” for the listener/viewer and paid for by the “sponsor,” usually a retailer or manufacturer. Paid advertising of this type soon became a main communications channel for many retailers, and catalogue sales declined as people frequented department stores and shopping malls. There,

they could see and touch a huge variety of goods while choosing what they were told about on radio or shown on TV.

In summary, several industries converged in the period from the mid-19th century to the mid-20th century. The industrial revolution and modern transportation provided goods and got them to the retailer; the broadcast media and personal automobile made consumers aware of what was available; and the retailer provided a pleasant environment where consumers could make their purchase decision. All these industries contributed to a new consumer-driven economy that was a much more efficient marketplace – a classic case of win-win-win, delivering a wider array of products to more people at a better price than was previously possible. And this situation held until the fading years of the 20th century, when the arrival of two new industries again shook things up in unforeseen ways: the internet and personal mobile communications.

This changes everything – again!

With the development of the World Wide Web and search engines, the internet became the easiest and least expensive way for people to publish and find information and content. By the year 2000 it was overtaking print and becoming the place to find information. Amazon, eBay and iTunes were providing ways to spend money on the internet, but for the most part revenues were generated via advertising, and users expected services to be provided at no charge.

During this same period, usage of mobile phones exploded across the planet, bringing affordable communication to even the most remote areas. As costs for mobile phones dropped, even those living in very humble circumstances could benefit by gaining access to a wider social network and better, more current information.

Of course, such a massive adoption of technologies impacts how people behave. One can safely say that people under 25 years old are different from us older folks, and not least because they have

gathered a media and communication experience that no generation before them has had (See “Understanding the digital natives” in this issue).

Just as the industrial revolution created an abundance of manufactured goods, the internet has created yet more abundance of information, of choice, of social interactions, and even of ways to “be.” Sometimes the internet provides a way to get through the clutter to what is needed, and sometimes not. (More on electronic distribution in “Swimming with the Sharks,” EBR 3, 2007). As the internet expands social networking options, users are becoming far less homogeneous in outlook and habits. This forces advertisers to target an ever increasing number of ever smaller market segments, making the mass-market methods of the past less effective.

Three legs make a stool

So let’s apply the lessons from consumer retail in resolving the issues raised in merging the telecom, internet, and media industries into networked multimedia.

1 WHAT TELECOMS CAN PROVIDE:

- Efficient point-of-sale and billing: unlike the media and most internet businesses, telecom maintains a very efficient direct relationship with end users.
- The power of mobility and ubiquitous access. An old joke goes “Question: what are the three most important factors in retail success? Answer: location, location, location.” Cell phone users are virally “in the store” 24/7. What other retailer in history can make such a claim?
- Linking the real world with the data space: location-based advertising and services.
- Presence and availability: finding out what is the immediately addressable market, and using changes in user activities to trigger commercial opportunities.
- User profile information and dealing with preferences, social associations for viral marketing, and identity man-

quote

» **Question: what are the three most important factors in retail success?**

Answer: location, location, location. «

agement for personalized services and targeted advertising.

- A unified, coherent end-user experience that works across terminal, application, network, and geographic borders.

2 WHAT THE INTERNET BRINGS:

- Access to digital information and services such as e-mail, instant messaging, and blogs.
- A place to publish and share information.
- Search engines to find desired content out of the massive sea of text, music and video available.
- Social networking: a way to find people who share common interests, and a place in which to share.
- An audience for advertising in both targeted and broadcast models (individuals and communities).

3 WHAT THE MEDIA INDUSTRY PROVIDES:

- Professionally produced text, music and video for direct sale, or as sponsored content delivered “for free”.
- Content prepared for broadcast media and general advertising.
- Targeted advertising content.

Making services work across networks

Despite the major benefits of doing so, linking these three industries into a common value chain called networked multimedia will not be a walk in the park. But in recent years we have seen the arrival of IP Multimedia Subsystem (IMS) – a framework that if properly applied could provide the media, telecom, and internet businesses with a bridge that unites them. IMS can be used to build a converged user experience that leverages the best from the telecoms, media and internet worlds.

In this text I will focus on the interfaces IMS provides for linking the three parties involved in networked multimedia. Specifically, I will mention the Communications Services (CoSe) defined in IMS in order to provide end-to-end interoperability of key IMS capabilities across networks. These are:

- Telephony: the ability to create, merge, split, and tear down voice and video sessions in real time.
- Messaging: the ability to create and transmit deferred messages (such as SMS and MMS).
- Push-to-talk: the ability to do “floor control,” in other words, push a message (text, voice, video) out to a group of receivers (as if they were walkie-talkies on the same frequency).
- Subscriber profile: user location, presence status, group management, identity handling, user profiles, and so forth.

None of these functions are unique to IMS, but IMS is the only standard that covers all these areas for mobile-, fixed-, and cable-based communications in the same framework. Because there still exists some confusion in regard to IMS, especially in the internet world, it’s also perhaps worth mentioning what IMS **is not**:

- An **all-encompassing** grab for control of users by the telecom operators and vendors: the walled garden model is fast disappearing, and IMS vendors are providing tools that give network operators and developers more choice in business models (such as paid subscription, pay per use, promotional pricing) than the predominantly advertising-based model of the internet.
- A **panacea**: IMS provides a specific set of technical capabilities. The parties involved still need to set up the business relationships that will create a true win-win scenario.

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- **Finished:** IMS is still a new technology in deployment. This also means there is a great opportunity for first movers to establish dominant positions in IMS-enabled services.
- **Fully implemented:** Ericsson estimates there are some 40 commercial deployments of IMS around the world, and over 130 contracts for IMS network installations.

Powerful new sales tools

IMS provides networked multimedia with a framework for a win-win-win scenario. Not only is IMS a bridge between telecoms, media, and the internet, it also provides the underlying architecture needed to provide a truly well-integrated and coherent consumer experience.

For instance, IMS helps advertisers and retailers work together by providing *reliable profile information*, which can then be used to build targeted advertising. IMS permits customers to opt out and control which information in their profiles they will allow external parties to see. The targeted advert can then be sent as a push-to-talk message, requiring little direct participation unless the customer is interested. The message could contain a premium offer or discount coupon, in which case the customer can respond via telephony or messaging services, using the network operator's charging services to bill a user who wants to buy now.

Alternatively, the advertiser could reach a deal with a social networking provider to provide adverts and premium offers on the social networking site itself. The *group list management* functions on IMS will allow the customer to "share" the experience of his premium with the other members of his social network, spreading the campaign by "viral" means. The one who makes a successful referral could then get a discount coupon, sent by MMS to his mobile, which might even lead to a follow-on sale.

In a third scenario, a woman is walking down the street and finds out, via *location services*, that several friends are in the area. She then uses an IMS enabled

"active address book" to see who would be available for coffee, and sends out an invitation via instant messaging to see who wants to join in, and where. With a restaurant location service she finds a nearby favorite coffee shop; and using the white-boarding facility of IMS, shows the group of friends where to meet. In the meantime the coffee shop gets her "frequent patron" number from her profile and issues a special members' only discount coupon. As each member of the group leaves the restaurant, they receive a personalized message thanking them for their patronage, and offering them each a different discount coupon based on their age and previous buying history.

Another interesting usage of IMS capability is to use *presence status* in order to identify any changes in someone's activity to see if this would present a commercial opportunity. For example, while commuting a man is watching a sports event broadcast in real time. He arrives at his destination before the program is finished, and is obliged to stop watching the program. IMS detects this change of status and initiates a service that sends him a text message with an offer to provide a short video when any significant action happens for the rest of the game. He accepts the service by sending a message in response, and receives the highlights of the remainder of the event as multimedia messages (for a fee of course!).

And a final example that brings together many of these concepts into a single service: *active queue management*.

In this case a person wants a new passport, without waiting hours in line. She first goes to the local passport office's website and registers with her mobile number for a place in line. She is sent an electronic ticket to phone, and is advised that the current waiting time is about 2 hours. The service monitors her distance from the passport office via her location information, and informs her when the waiting time is 10 minutes plus the time it should take for her to get to the passport office. The message also provides her a map with directions, informs her which queue to join, and reserves a block of time in her agenda sufficient for the passport interview. A few days later she receives a message stating that her new passport is ready to be picked up, again with instructions on where to go to pick it up.

The road ahead

Just like with the retail revolution of the late 19th and early 20th centuries, the early 21st century will have to deal with how the changes in society affect the efficiency of value chains, and adjust accordingly. Telecoms, the media, and the internet have much to gain by working together to create a unified market for networked multimedia, and IMS provides a way of reaching this destination. Of course, the ones who stand to gain the most in this convergence are the consumers – and that is perhaps the best indication that we are on the right path. ■



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