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MOBILE CONTENT VALUE CHAIN

Evolving Toward Market Maturity

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Research Topic
• Mobile Content

Business Benefit
• Mobile Value Chain Analysis

MOBILE CONTENT VALUE CHAIN

Evolving Toward Market Maturity

Strong branded content is becoming directly available to consumers. Growing interest in mobile entertainment and new personalization formats from major Internet and media companies is reshaping the value chain for mobile content creation and distribution.

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Research Highlights

MVNOs: Toward Market Segmentation

From media owners (e.g., Disney, MTV, NRJ) to retailers and football clubs, many companies are launching, or considering launching, mobile virtual network operators (MVNOs) in the buoyant, but very competitive, wireless market. (European Wireless, September 14, 2005)

European Wireless Forecast, 2005 to 2010

Mobile operators must increase their share of average revenue per user (ARPU) from data services during the next few years—beyond declining short message service (SMS) revenues. This strategy will allow operators to generate return on investment (ROI) in 3G networks and licenses, as well as follow up with continuous improvements in handsets and technology. (European Wireless, May 10, 2005)

Mobile Operators' Portals: Invest in Marketing Content, Features, and Benefits to Drive Use

In 2002, most operators created new brands to relaunch their WAP and data services (e.g., O2 Active, Vodafone live!, t-zones, i-mode Alliance, Orange World). These services currently represent the centerpiece of 3G offerings. (European Wireless, March 24, 2005)

Executive Summary

Strong branded content is becoming directly available to consumers. Growing interest in mobile entertainment and new personalization formats from major Internet and media companies is reshaping the value chain for mobile content creation and distribution.

Key Questions

- What type of content will dominate the mobile content and entertainment market?
- Which trends are shaping the value chain in the market?
- Which industry players will benefit/lose out?
- How will revenue for mobile content be split along the value chain?

Key Findings

Landscape: New Entrants Help Mobile Operators Move Beyond Walled Gardens
An average of 55 percent of content is currently sold outside of operators' portals. Even if carriers are leaders in the distribution of new content (e.g., true tones, games), they will begin moving from a walled garden to an open access model. Disintermediation, consolidation, internationalization, and competition for mobile rights are key trends shaping the value chain, with media and Internet players leveraging their brands in the mobile space.

Outlook: Growing Revenues Lead to Mature Market
Mobile content revenues will increase from €2.4 billion in 2004 to €9.1 billion in 2010, mainly coming from informational entertainment services. Interactive voice response (IVR) and premium short message service (SMS) will suffer due to strong growth of the Internet, wireless application protocol (WAP) premium, and new formats (e.g., memory cards, preloaded content). The market will mature, and carriers will remain key for content distribution.

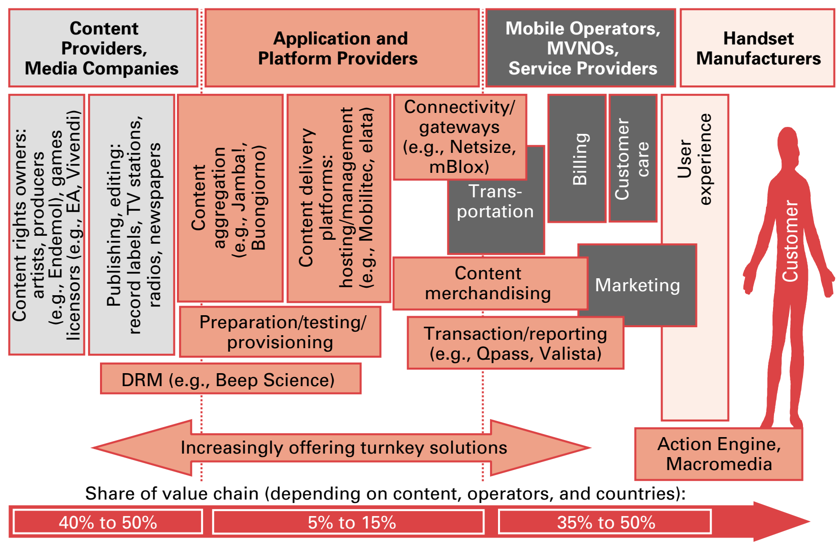
Mandate: Stakeholders Must Redefine Roles to Establish Sound Partnerships
Mobile operators should help content providers market their services, and focus on their core businesses by educating the market, simplifying data tariffs, and improving the user interface. Media companies should partner with mobile operators and pure mobile content providers to reach the widest audience possible. Investing in understanding consumers' behavior to define the best content for target segments will become necessary, taking into consideration that mobile will primarily remain a communications platform.

Landscape

New Entrants Help Mobile Operators Move Beyond Walled Gardens

Aggregators and Middlemen Start Repositioning in the Value Chain

Fig. 1 Value Chain Analysis



Source: JupiterResearch (12/05)

The mobile content value chain is complex because many stakeholders are involved. The landscape was previously fragmented, with many national players providing content and applications. Consolidation and mergers (e.g., iTouch/For-side.com, Jamba!/VeriSign, elata/Qualcomm, Musiwave/Openwave Systems) are taking place, as follows:

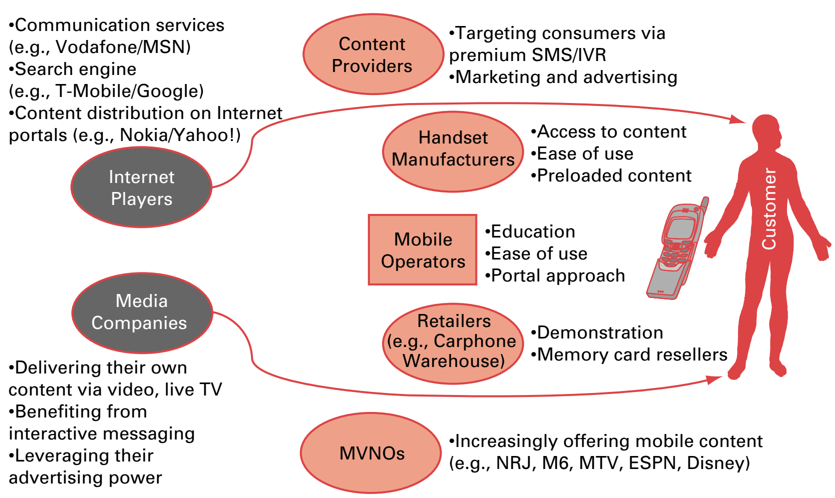
- Internationalization and scale effects are required to address consolidating operators as well as high investments in technology (for software vendors) and advertising (pure mobile ring tone providers investing more than 50 percent of their revenues in press/TV).
- Disintermediation is affecting small content providers because strong brands, media companies, and record labels are striking direct deals with operators and consumers. Margins on new personalization formats such as true tones are decreasing, with record labels asking from 35 percent to 50 percent of retail prices (excluding value-added tax).
- Aggregation and connectivity are becoming commodity services. Margins are consequently decreasing (by five percent to 10 percent) for these offerings. Many players (e.g., Netsize) are thus trying to move up in the value chain by providing content delivery platforms and services.

- Operators are increasingly looking for turnkey solutions and bundling services. Tier-two and tier-three operators are particularly looking to outsource, as content/application portfolio management becomes increasingly complex. They must rationalize content platform/providers, looking for managed services—moving away from separate silo distribution platforms toward increasingly unified systems.

Another major trend affecting the value chain is the fight for mobile rights among broadcasters, mobile operators, producers (e.g., Endemol, FremantleMedia), and other content rights owners. Content rights owners tend to fragment rights on each platform to maximize additional revenues, allowing mobile operators to acquire content and compete with media/TV companies. Legal issues regarding mobile content are extremely complex, and music and images streamed or downloaded around mobile video content have often not been cleared. Content providers such as the Japanese company Index are also investing in the space, and many of them are starting to produce their own for-mobile content.

Media and Internet Players Are Increasingly Going Directly to Consumers

Fig. 2 Role of the Main Stakeholders



Source: JupiterResearch (12/05)

New entrants (e.g., strong brands, media/Internet companies) are starting to leverage their brands in the mobile space. Because their business models currently rely on advertising, their arrival in the mobile landscape implies potential definition of new business models as well as disruption of both the value chain and the current revenue sharing on which mobile operators rely. For example, if mobile TV becomes a mass market, operators will have to rely on new broadcast technologies such as digital video broadcasting for handhelds (DVB-H) or terrestrial digital media broadcasting (T-DMB). In this case, data traffic will not go through cell networks, and mobile operators will probably obtain no more than 25 percent to 30 percent of revenue sharing based on a monthly subscription model.

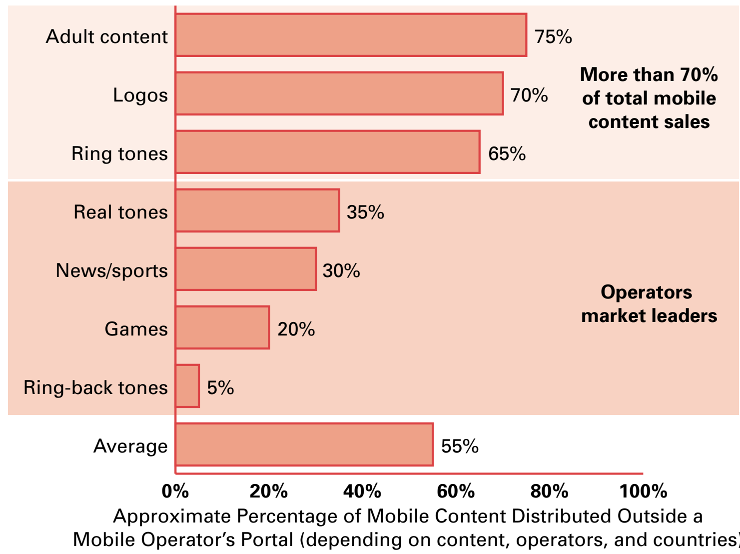
Most broadcasters are involved in mobile video on demand (VoD) and live streaming. They are not only monetizing their content and services on a new platform, but also trying to leverage their advertising power. TF1, the main French TV broadcaster, recently formed a joint venture with Jet Multimedia to directly sell mobile content to consumers. The new company intends to receive 10 percent of total mobile content revenues in the French market by the end of 2006. Pay TV companies such as Sky or Canal+ have the customer relationship management (CRM) expertise, marketing know-how, and billing capabilities to target consumers, bypassing mobile operators.

Most brands, particularly those having young audiences, are considering mobile as a complementary platform and an additional source of revenue. Record labels and major movie companies (e.g., Universal International Pictures, recently launching a mobile division) are beginning to include mobile site addresses and short codes on all above-the-fold marketing materials (in the same way Web URLs are included today) to advertise as well as promote movies and music.

Major deals have been announced with Internet pure players. Some of them involve mobile operators (e.g., T-Mobile/Google agreement), and others do not (e.g., Nokia/Yahoo! partnership). Also, some retailers are increasingly investing in the mobile content space because they have direct contact with customers. The Carphone Warehouse is considering launching its own mobile portal under a recently created brand, playmobile, and has started to sell preloaded memory cards in partnership with the record label EMI.

A Majority of Mobile Content Is Distributed Off-Portal

Fig. 3 Off-Portal Mobile Content Sales per Content Category



Question: For each of the following mobile content categories, what percentage of sales of the content type currently takes place off-portal (i.e., outside a mobile operator's portal) in your opinion?

Source: JupiterResearch Executive Survey (10/05), n = 37 (Western Europe only)

Because logos and ring tones have been heavily promoted by pure mobile players through premium SMS and IVR, representing more than 70 percent of total mobile content sales, a majority of mobile content is sold outside of mobile operators' portals. Realizing they do not make the most of this lucrative business and trying to improve the quality of consumers' experience, mobile operators and record labels generally have tight control of the distribution of new content formats. Due to relatively high revenue shares asked by record labels, aggregators and content providers tend to promote comparatively profitable content such as logos, polyphonic ring tones, or self-created mobile content cleared of rights (e.g., Crazy Frog from Jamba!, Blingtones, ring tone label from Plurimedia). Margins on real tones are thus low and mainly represent an opportunity to cross-sell other products. Most real tones are currently sold through mobile operators' portals.

This trend may be dangerous for the market as a whole in the long run. Personalization items are an impulse purchase requiring advertising. Mobile operators have limited know-how in promoting these services and have many other items to communicate (e.g., network coverage, customer care, 3G, video). Limiting new personalization formats to pull services downloaded on WAP decks will not increase the total size of the market. If ring-back tones are successful in Korea and Spain, the reason will be that they have been heavily promoted and that their distribution relies on an open model.

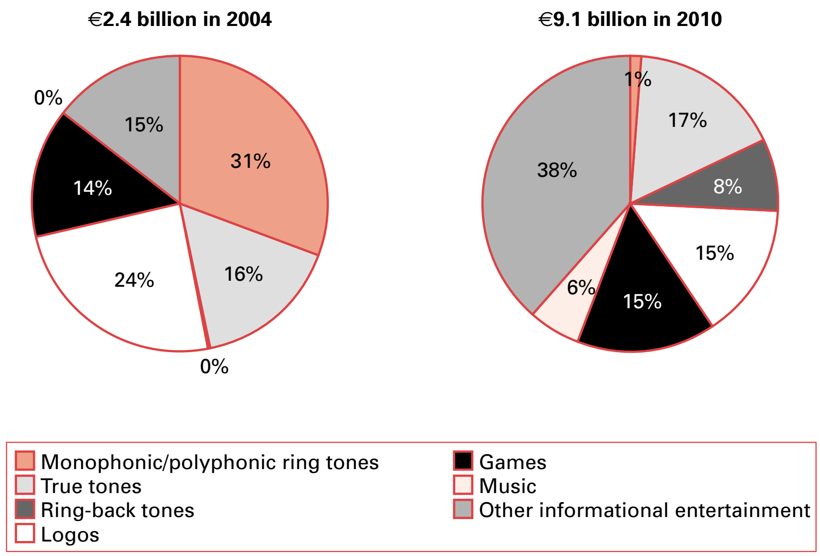
Games are no exception. In some countries, more than 35 percent of games are distributed off-portal. In France, the amount is less than 10 percent. Consequently, the distribution tends to promote the largest content providers, which can invest in co-marketing deals or pay for their ranking in mobile operators' portals. Carriers have predominantly maintained full vertical market integration, trying to increase control over the value chain. Some operators (e.g., Orange France, TIM) remain extremely closed to other forms of distribution and off-portal. Even 3 is moving beyond its walled garden approach, albeit on an approved basis. In September 2005, the company announced plans to allow customers almost unlimited access to Web pages optimized for mobile viewing for about €3.69 per month. However, a majority of operators will start promoting the open access model to widen the ecosystem, benefiting from adult content and data traffic revenues.

Outlook

Growing Revenues Lead to Mature Market

Mobile Content Revenues Will More than Triple by 2010, but Content Categories Will Dramatically Change

Fig. 4 Mobile Content Forecast, 2004 and 2010



Source: JupiterResearch Wireless Forecast, 4/05 (Western Europe only)
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Mobile content revenues will grow from €2.4 billion in 2004 to €9.1 billion by 2010. The share of personalization services will decrease from 71 percent in 2004 to 41 percent in 2010, being progressively overcome by information and entertainment services. The mobile content market remains driven by ring tones, and other content and service formats have not experienced strong adoption due to several inhibitors:

- Mobile users' poor experience regarding complexity of use
- Lack of awareness of device capabilities and services
- Consumers' perception of high content prices
- Difficulty of establishing new business models and lack of new delivery and billing methods

However, several drivers will foster uptake of new services (e.g., video downloads/ streaming, games, other informational entertainment services):

- Growing installed base of multimedia devices
- Availability of branded content that will be segmented and promoted in co-marketing agreements with content providers
- Efforts of mobile operators and handset manufacturers to simplify ease of use
- Uptake of 3G services and multimedia use

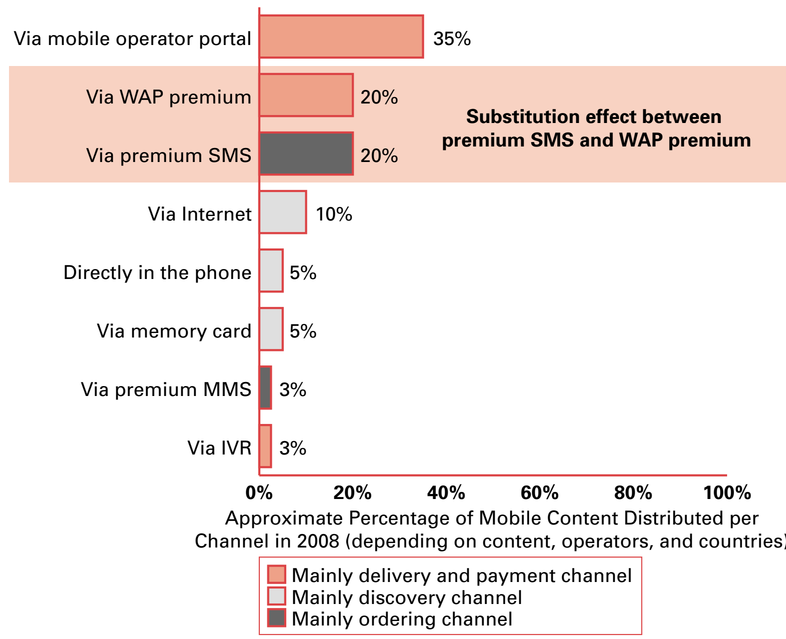
Consumers' demand for mobile entertainment exists, evidenced by the success of iPods, PlayStation Portables, and other portable multimedia devices. Mobile phones will capture a share of this market because they have the following key assets:

- **Ubiquity.** Mobile phones are always on and always with end users, which is particularly important for casual users looking for instantaneity.
- **Individuality.** Unlike PCs or TVs, which are household devices, mobile phones are personal devices allowing direct personalization.
- **Volume.** The penetration rate allows a comparatively direct return on investment.

Growth will continue to attract the largest players in the informational entertainment and messaging industries, leading to further consolidation in the value chain. Media agencies and advertisers will acquire small intermediates, developing and hosting WAP sites as well as defining mobile marketing campaigns, as soon as the market matures. Revenue assurance will also increasingly concern data—not just voice—and most players will have to rely on secure software for content delivery, payments, and reporting, highlighted by the rising awareness of companies such as Qpass. Moreover, market maturation will lead to professionalizing all stakeholders.

Industry Expects New Delivery and Payment Channels to Emerge

Fig. 5 Delivery and Payment Channels Expected



Question: In your opinion, what percentage of mobile content sales will be distributed through the following channels during the next three years?

Source: JupiterResearch Executive Survey (10/05), n = 37 (Western Europe only)

More than 70 percent of respondents to a recent JupiterResearch executive survey said they believe mobile operators' portals will become main distribution channels, accounting for an average of 35 percent of mobile content sales distribution by 2008. The increasing convergence of the mobile and fixed Internet (e.g., XHTML, high speeds, mobile domains, phones becoming PCs) will facilitate access to the true Internet. Also, to some extent, mobile will replicate the fixed Internet model. Although there is no reason why consumers would indefinitely stick to their mobile ISPs' portals without ability to access long-tail content, JupiterResearch estimates carriers will remain key distributors during the next few years because they do the following:

- Control distribution of handsets through subsidies
- Control billing systems, default home pages, and quality of content available
- Are starting to recoup their investments in new brands (e.g., Vodafone live!) and market education

Moreover, the mobile Internet can only provide limited experience and opportunities (e.g., screen and keyboard limitations, comparatively lower advertising revenues for third parties), compared with a true PC-based experience. Due to improved ergonomics of the PC-based Web experience, Internet players will be able to leverage their experience in online distribution and CRM to establish themselves as distributors of mobile content.

Combining all distribution channels, off-portal will consequently represent the majority of content distribution, increasing domination if Java applications (not requiring systematic connection through mobile networks to refresh data) become a new way to bypass mobile operators. The revenue share asked by mobile operators for billing purposes (usually 35 percent) is high enough that most companies are looking for new delivery and payment formats. The rise of off-portal content will also depend on culture, competition, and intervention of regulators (e.g., code of conduct promoted by the Independent Committee for the Supervision of Standards of the Telephone Information Services).

Due to the lack of quality of premium SMS delivery, JupiterResearch believes a substitution effect toward WAP premium will occur during the next few years—a view also widely held by the industry. Using SMS WAP push, premium SMS will shift from a payment to an order channel, in which content is delivered and paid through a comparatively better-designed and more secure off-portal site. IVR will lose significant ground, dropping from 20 percent (in some countries currently) to less than five percent of content distribution by 2008, according to a recent JupiterResearch executive survey. The lack of ergonomics of the platform will only make it appealing for users trying to avoid content appearing on their phone bills (mainly adult content for business users or teens).

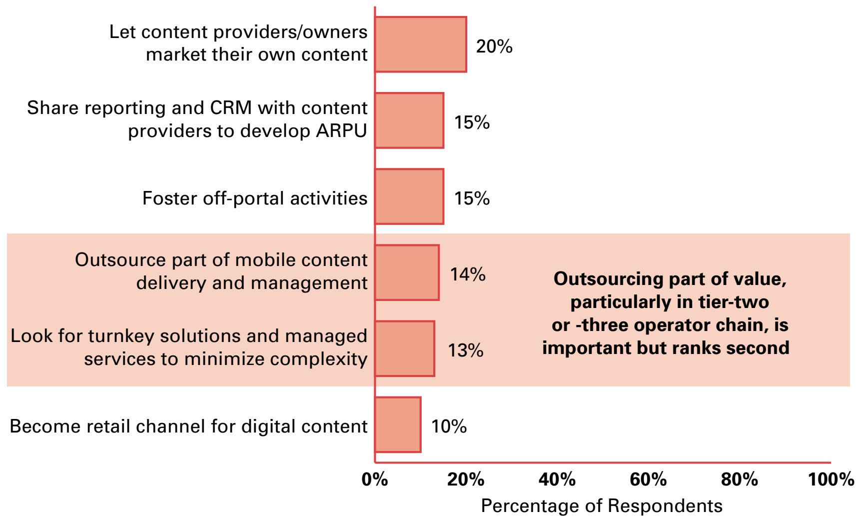
New formats such as preloaded memory cards for music and preloaded content to initiate use (particularly for mobile games) will also gain traction. The increased internal storage capacity of mobile phones and the ability to transfer content from PCs will strongly push consumers toward time-shifted consumption, rather than immediate purchase over the air.

Mandate

Stakeholders Must Redefine Roles to Establish Sound Partnerships

Mobile Operators Should Help Content Providers Market Their Services and Focus on Their Core Businesses

Fig. 6 Strategies of Mobile Operators



Question: Which strategy did you follow or do you intend to follow during the next 12 months? Which of the following mobile content strategies will be most successful at generating revenues for mobile operators?

Source: JupiterResearch Executive Survey (10/05), n = 37 (Western Europe only)

The main strategy the industry believes mobile operators will follow is allowing content providers and owners to market their own content. JupiterResearch estimates many operators have been too highly involved in content acquisition and distribution, without having either the marketing know-how or the legitimacy to do so. They must unleash brands to promote content.

Although consumers' patterns of use and profiles are available to mobile operators, data are not sufficiently analyzed and shared with third parties. Many content providers complain they do not have access to reporting, and operators have not shared the granular data they have collected regarding consumers' buying habits. Going forward, however, operators should contractually monetize this insight to improve their content offers in partnership with companies that can answer consumers' needs.

Operators should also invest in offering management by cross-selling and bundling content from various categories and content providers at various prices. Merchandising mobile content is an issue on which they should increase focus. To do so, they should rely on software companies providing turnkey solutions such as Motricity, Qpass, or End2End. Outsourcing to comparatively more efficient specialists in the value chain will not only benefit technological and financial issues, but also increasingly answer marketing needs.

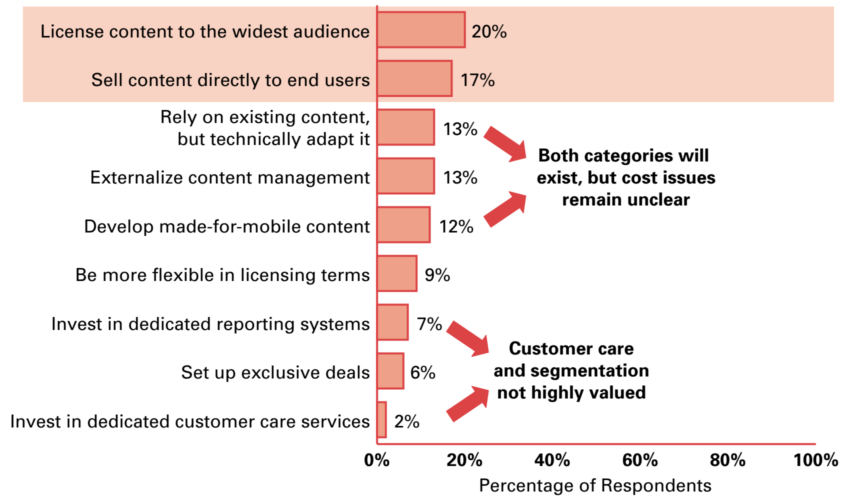
To widen the ecosystem, mobile operators should foster off-portal activities, increasing content available to consumers (particularly adult content, which is difficult to promote under a carrier's brand) and creating incremental data traffic revenues. Some companies such as Vodafone are advocating this approach, but no real incentives have been implemented yet. Consumers still pay comparatively higher prices when browsing outside the Vodafone live! portal.

Mobile operators must consequently focus on their core business, which is providing access to content and only being enablers for content providers and third parties. Their role is to secure simplicity by doing the following:

- **Convincing consumers of the benefits of using services on the move.** They should also raise awareness of services by investing in co-marketing agreements with legitimate content providers.
- **Improving the user interface for better ease of use, and working closely with handset manufacturers.** Complex settings and provisioning remain a reality, and there are still marketing efforts companies must make to improve out-of-the-box experiences as well as educate consumers about methods of discovering and accessing content.
- **Simplifying tariffs to foster use.** Mobile operators must introduce innovative tariffs such as flat-fee subscription models and bundles if they want mobile content to reach critical mass.

To Reach Widest Audience, Media Companies Should Invest in Segmentation

Fig. 7 Strategies of Media Companies



Question: Which strategy did you follow or do you intend to follow during the next 12 months? Which of the following mobile content strategies will be most successful at generating revenues for media companies and content owners?

Source: JupiterResearch Executive Survey (10/05), n = 37 (Western Europe only)

Many exclusive deals between record labels/media companies and mobile operators have been recently announced. However, only six percent of respondents to the recent JupiterResearch executive survey said they thought these deals represented a successful strategy for media companies. Media companies should only make such deals with the largest telecom operators to reach the widest audience possible to recoup investments. Because these deals are limited to short time frames, owning both the pipe and the content is not necessarily a sound strategy in the long run. A good counterexample is Canal+ (part of Vivendi Universal Group) licensing VoD content to Orange, the main player in the French market and a direct competitor of SFR (also part of Vivendi Universal Group).

As previously mentioned, media companies must partner with mobile operators because they will remain a key distributor of mobile content during the next few years. However, significant opportunities exist around going directly to consumers as well as using alternative payments and retail channels. Some companies such as MTV or French radio NRJ are even investing in voice by launching mobile virtual network operators (MVNOs). JupiterResearch estimates few will succeed, and setting up co-marketing agreements is comparatively less risky. (See *MVNOs: Toward Market Segmentation*, European Wireless, September 14, 2005.)

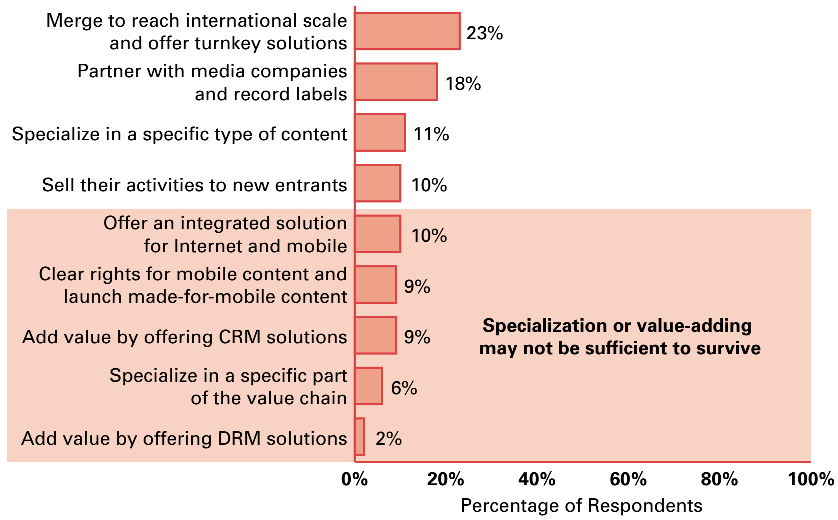
Adoption of mobile content would result from the convergence of two different worlds, the media and telecom industries. They currently view the mobile platform differently. Mobile operators consider content as a source of differentiation and a potential peer-to-peer service, while broadcasters and content owners consider it as a new distribution platform to license content they own. The reality: Mobile phones are—and will remain—a communications platform. JupiterResearch estimates messaging services will account for more than two-thirds of data revenues by 2010. Good proof is both the rising success of user-generated content (from citizen journalism to interactive TV shows) and the role played by mobile communities. Broadcasters must transform viewers into active listeners, not passive ones. They should also trial new business models. By introducing both content super-distribution (using OMA DRM 2.0) and advertising as sponsored content (eschewing the traditional format of 30-second spots), they could benefit from viral marketing effects.

To adhere to the mobile platform's needs, content providers are increasingly promoting made-for-mobile content. The definition of this category remains widely unclear in the industry. Some providers believe it means adapting existing branded content for specificities of a small screen, and others believe it consists of creating new content dedicated to mobile users from scratch. JupiterResearch estimates the cost of adapting content to mobile phones (around €15,000 to produce a 60-second shot, according to TV-For-Mobile, a French start-up) has been underestimated—increasingly so when it involves famous actors and branded content. Mobile episodes (e.g., *24: Conspiracy* from Fox) are more a marketing coup than a real business opportunity. To recoup investments, producers must wait for critical mass of 3G users, which will not occur before 2008, according to JupiterResearch's most recent mobile forecast.

Content companies do not have enough information about customers' needs, purchasing trends, or sales. Only two percent of executives JupiterResearch interviewed said investing in dedicated customer care systems was important. As the market matures, however, media companies must increasingly understand consumers' needs and provide segmented offers as well as care to customers.

Pure Mobile Content Providers and Aggregators Must Reach Scale and Partner

Fig. 8 Strategies of Aggregators and Small to Midsize Content Providers



Question: Which strategy did you follow or do you intend to follow during the next 12 months? Which of the following mobile content strategies will be most successful at generating revenues for aggregators and small to medium content providers?

Source: JupiterResearch Executive Survey (10/05), n = 37 (Western Europe only)

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Consolidation among content providers and aggregators will continue because they must reach scale and scope as well as offer turnkey solutions. Being squeezed between mobile operators and large, traditional content companies, the first mobile players will have difficulty surviving beyond niche markets if they do not reposition their offers or add value with specific proposals. However, a few mobile-only players could emerge like Google and Yahoo! did in the Internet space.

Critics argue that several companies misled consumers by failing to clarify they needed to sign up for monthly subscriptions when downloading ring tones, and thereby damaged the entire industry. A code of conduct must be strictly implemented. To regain consumers' trust, most companies will launch new brands (e.g., the launch of Blinko from Buongiorno).

Companies such as Jamba!, Monstermob, or 123 Multimedia have real marketing and advertising know-how, which should not be underestimated. Most of them are investing in defensive strategies by creating their own content cleared of rights (e.g., Crazy Frog, Blingtones) to improve decreasing margins reduced by high revenue shares asked by record labels. They will also continue to invest in adult and niche content. In the long run, however, they should establish themselves as enablers for media companies and record labels, rather than direct competitors of them. In the future, labels will realize decreased revenue share stimulates the whole market. They will also become increasingly flexible in their licensing terms, understanding that specialist aggregators can comparatively better handle exploitation of their back catalog. Consumers want to access the song or artist of their choice. They have no idea which label is behind it.

Case Study

Gallery, a Unique Multioperator Offering to Foster WAP Premium Services

Participants: The three main mobile operators have launched a common offer branded as Gallery to promote access to a WAP-premium kiosk in addition to their own portals.

Goal: The aim is to widen the ecosystem for long-tail content with increasingly suitable business models and extensive choice of tariffs for content providers and brands. It is also a method for increasing data traffic revenues from downloading and browsing.

Execution: Gallery is available through contract and prepay on most handsets with color screens (roughly 50 percent of the French installed base) and accessible through the following:

- Direct links from mobile operators' portals (Vodafone live! from SFR, Orange World from Orange, as well as i-mode and a classic WAP portal from Bouygues Telecom)
- Banners or ads displayed on portals
- Nonpremium SMS sent to five-digit codes, with end users receiving an SMS WAP push to directly access service
- Mobile search engines, by typing in a name or keyword for service

The French Association of Mobile Multimedia (www.pro.gallery.fr) created in June 2005 is responsible for promoting the Gallery kiosk and simplifying the process for launching Gallery service: booking the service name, selecting partners to develop and host WAP sites, defining communications guidelines, testing services, and ensuring the code of good conduct is respected, among others. A TV communications campaign launched in September 2005 to raise awareness of the service and promote SMS access.

Economics: The cost of deploying the service starts at €5,000, depending on content offered and technology used. Reservation of the name of the service only costs €50, with an annual fee of €100. Being referenced on all mobile operators costs a minimum of €2,000 per year, even if the service can be separately launched with a single operator. The content provider handles promotion. Revenue sharing depends on tariffs chosen, but 67 percent to 70 percent of revenues usually go to the content provider.

Bottom Line: There are more than one million unique visitors per month and more than 400,000 regular users (e.g., ring tones, games, chat, erotic content). Total turnover reached €12 million at the end of 2004 and is expected to reach €20 million to €25 million by the end of 2005. It remains a nascent market, which requires much more awareness and is not a true open off-portal system.

Case Study

Bango, an Innovator Enabling True Off-Portal Content

Participants: Bango is a UK-based company created in 1999, providing billing and payment software for content providers over the mobile Internet.

Goal: Bango has developed an open infrastructure platform that enables content providers to directly market, sell, as well as deliver their products and services to mobile phone users on mobile Internet networks.

Execution: The content provider markets its services directly to end users. Bango handles content discovery, identification, and age verification. Bango collects payment and provides revenue tracking as well as audit for content providers.

Price is dynamic and changes by promotion, user, time, location, and device type, depending on the content provider. Various payment methods are directly available on the phone bill through premium SMS, IVR, prepaid personal-identification-number codes, credit or debit cards, as well as PayPal. Such flexibility is the core of Bango's value proposition, which has attracted many content providers (e.g., Sony BMG, Universal, *Maxim*, News Corporation, *The Sun*).

Bango has partnered with leading mobile operators including Vodafone, Orange, Telefonica, O2, and Cingular (recently) to accelerate growth of the direct-to-consumer business. The company is increasingly working with these operators and their search engine partners to define relevant sites for mobile Internet search sessions.

Economics: The business model is attractive for content providers because they get 63 percent of the revenue share. The remaining part is split between Bango and other stakeholders (e.g., operators, banks). The margin for Bango obviously depends on the payment method selected. Content providers also pay a monthly fee of €15 to €100.

Bottom Line: The company went public on the London Stock Exchange (AIM:BGO) in June 2005 to raise funds to strengthen its development. It achieved a turnover of about €4.7 million at the end of September 2005. The company must now successfully expand outside the UK—particularly in its targeted countries (i.e., the US, Germany, and Spain)—and increase the average consumer's transaction value (currently around €1.4).

Report Methodology

The core of JupiterResearch's products is the perspective and opinion of JupiterResearch's professionals. JupiterResearch's analysts are immersed in the industries they cover through ongoing contact with corporate and technology leaders, daily study of trends and events in the online world, and their collective professional experience. Individual analysts' perspectives are filtered through rigorous collective debate and deliberation, producing research that reflects the combined sensibility of JupiterResearch's entire team.

Analysts' perspectives are enhanced and refined through JupiterResearch-designed market research. JupiterResearch uses many data research tools, including consumer surveys, systematic polling of leading industry executives, comScore Media Metrix measurement data, and a rigorous approach to building market forecasting models. Specialists with JupiterResearch's data research group assist analysts in the technical development of these tools, such as survey design, sample building, data weighting, and data analysis.

This report benefited from a number of specific market research projects, described below.

JupiterResearch Executive Survey

To gain insight into corporate strategies and macro-level trends, JupiterResearch conducted a formal survey of leading executives within market-driving companies. JupiterResearch surveyed 37 companies, based on JupiterResearch's judgment of the most important and representative firms in this space. Executives from these companies were contacted via e-mail requesting their participation in the survey, with the questionnaire attached. JupiterResearch followed up by conducting phone interviews with the executives. Although the sample is not fully inclusive, JupiterResearch believes the high positions held by respondents and the relatively low number of total companies in this sector make the data directionally indicative and illustrative of important market trends. Key issues addressed by this survey were drivers and inhibitors of uptake of mobile content, role and position of various stakeholders along the value chain, repartition regarding distribution of on- and off-portal content, as well as mobile content strategies for generating revenue.

JupiterResearch European Wireless Forecast

Forecast Drivers and Inhibitors

Mobile phone penetration. The growth of handset ownership was forecast for each market over a five-year period to gauge the total potential market.

Mobile phone handset taxonomy. To determine potential audience for mobile content and services, JupiterResearch segmented handset sales and the installed base of wireless subscribers by handset type. (See Definitions section for more details.)

Next-generation networks. This element represents the progress of next-generation network rollout and coverage.

Competitive landscape. This element represents the impact of operators' strategies and budgets on network evolution.

Consumers' behavior. This element represents differing usage patterns and receptivity to services among various consumer segments.

Sources of Data

Consumer survey. JupiterResearch referred to its proprietary European consumer survey data to quantify current mobile penetration, consumers' behavior, and forward-looking attitudes about mobile services and advertising.

Formal executive survey. To gain insight into corporate strategies and macro-level trends, JupiterResearch conducted a formal survey of leading executives in market-driving companies in the mobile telecommunications sector in Europe.

Mobile operator reports. Annual and quarterly reports of European mobile operators were collated to assess mobile subscribers and revenues.

Official statistics. This category encompasses official data from national statistical institutes and trade bodies.

Other secondary research. Using official sources, news items, and company information, JupiterResearch gathered an exhaustive collection of key data points.

Wireless Forecast Approach

Subscriber penetration and handset sales. JupiterResearch used full-year figures published by mobile operators for 2004 in conjunction with proprietary consumer survey data to quantify total subscriber numbers on a country-by-country basis. The resultant wireless-subscriber data set determines the unique mobile audience (i.e., the number of people with mobile phones). The saturation point for this metric is typically about 80 percent. This metric provides like-for-like comparison with adoption of other platforms.

However, mobile operators typically report number of subscriptions, not individuals. Consequently, the sum total of operator-reported subscriptions for a given market will exceed the total penetration rate. To facilitate comparison with operator-reported numbers (particularly for calculating ARPU), JupiterResearch additionally forecast the number of active mobile subscriptions. It represents the number of mobile accounts (both prepaid and subscriptions), which inherently includes double counting (e.g., individuals with both work and personal phone accounts), and penetration rates already exceed 100 percent in mature markets.

Similarly, JupiterResearch used reported sales figures and information gathered through executive interviews to quantify total handset sales for each country. JupiterResearch added the resultant data sets to historical trend data to help differentiate new and replacement handset sales. Handset sales were forecast for a five-year period, based on separate replacement and new sales forecasts. JupiterResearch factored in handset-replacement cycles, new technologies, and availability of handsets in the marketplace. JupiterResearch further segmented handset sales into various categories, each of which was a subset of the former, as follows:

- WAP-enabled (more in following Definitions section)
- Packet-based
- Multimedia
- Non-camera multimedia
- 2.5G multimedia
- 2.5G open OS
- 3G multimedia
- 3G open OS

Growth for each segment was forecast using a series of scorecards that factored in a wide range of macroeconomic and microeconomic factors, such as total available wallet share, per capita expenditure on telecommunications services, and per capita telecommunications equipment expenditure. Using these handset sales forecasts, JupiterResearch quantified the growth of the wireless subscriber base, segmented by each handset subset.

To assess the size of the potential user base for wireless Internet advertising, JupiterResearch forecast the percentage of mobile subscribers with data-enabled handsets that are active (i.e., using data services at least once per month).

Data revenues. JupiterResearch segmented data revenues into four key segments:

- Personalization
- Informational entertainment
- Communication
- Advertising

Total revenues for each segment were derived on a spending-per-buyer basis. Using extensive baseline research, executive interview results, and consumer survey data, JupiterResearch determined the number of mobile subscribers who pay for each content and service segment and the average amount spent per buyer. JupiterResearch forecast these data sets forward considering a range of factors, including evolution of mobile services, rollout of next-generation infrastructure, total available wallet share, suitability of service to platform, and availability of service. Total revenues were determined by multiplying the average spending per buyer by the number of buyers.

Personalization. This segment includes the following:

- Ring tones
- Logos and icons
- Animations

Ring tones. Due to the significant variation in ring tone purchasing behavior among age groups, JupiterResearch devised another level of modeling that forecast different rates of adoption and participation by age.

The percentage of mobile subscribers in each age group who would purchase ring tones was defined for each country and forecast forward over the five-year period. Next, the average number of ring tones purchased per year was quantified for each age group and forecast forward.

Factors considered in this stage included the following:

- Total available disposable income (e.g., teenagers largely depending on a fixed amount of income from parents for mobile expenditure)
- Changing social behavior with age (e.g., usage intensity tending to lessen as mobile subscribers age—taking into account that young demographics will continue engaging in some current activity during their later years, making their behavior in the future somewhat dissimilar to behavior of currently senior demographics)
- General maturity of ring tones market (e.g., increased usage among comparatively senior age groups as ring tones become increasingly widely established, with new adopters having lower rates of adoption than core-demographic users have currently)

Ring tone revenues are further segmented by the following:

- Monophonic/polyphonic ring tones
- Real tones (or hi-fi ring tones)
- Ring-back tones

Informational entertainment. This segment includes the following:

- Games
- Music
- Other

Communication. This segment includes the following:

- SMS
- MMS
- E-mail
- IM/other

Advertising. This segment includes the following:

- Mobile messaging marketing
- Wireless Internet advertising

Mobile messaging marketing. Using baseline supply-side research in conjunction with proprietary consumer survey data, JupiterResearch defined the average number of mobile marketing messages received per user, and forecast these levels forward over a five-year period. JupiterResearch created separate forecasts for SMS and MMS marketing, and further segmented each by operator-generated and promotional categories.

Mobile Internet advertising. For this segment, JupiterResearch defined the average number of sessions per active interactive wireless subscriber and the average number of ads per session. JupiterResearch forecast these data sets over a five-year period and subsequently applied them to wireless Internet cost-per-thousand (or otherwise applicable price modeling) forecasts. Levers in this segment were informed by benchmarks from the PC Internet space (scaled down for the difficulty of advertising through the limited user interface) and the adoption of packet-based interactivity (which will boost usage time).

Definitions

Wireless subscribers. This segment includes individuals who either subscribe to a mobile phone service or use a prepaid mobile phone. It also refers to the total number of individuals, not accounts.

WAP handsets. This open global specification enables users of wireless devices to access and interact with wireless information services and applications. WAP specifications are based on Internet standards, with extensions to reflect the wireless device environment.

Packet-based handsets. These are WAP handsets that use packet-based networks for data communication (e.g., GPRS, UMTS).

UMTS. This 3G wireless standard is used throughout Europe.

HSDPA. This enhancement to the UMTS terrestrial radio access network increases the downlink data rate to a theoretical maximum of 10 Mbps. HSDPA is being defined by The 3rd Generation Partnership Project as part of Release 5, building on the core network of IP migrations included in Release 4.

GPRS. This 2.5G wireless standard extends GSM.

Multimedia handsets. These packet-based handsets have (as a minimum) a color display and are capable of receiving MMS. They are mainly Java-enabled phones.

Photo phone handsets. These multimedia handsets contain built-in cameras.

Smart phones. These voice-centric mobile terminals use an open-market OS. Examples of this type of OS come from Symbian, Microsoft, Palm, or Linux. Examples of smart phones on the market include the SPV manufactured by HTC, the Nokia 6680 (a 3G smart phone), the Siemens SX1, the Motorola MPx200, or the Sony Ericsson P910.

Active wireless data users. This segment includes only wireless Internet users who access interactive services at least once per month.

Mobile content revenues. The levers in this segment include penetration of services among active users, multiplied by revenue per service. These levers were informed by increased use with adoption of packet-based interactivity, counterbalanced by consumers' decreasing interest as the wireless population becomes mass market (as opposed to youth-skewed).

Ring tones. These are monophonic, polyphonic, and real tones (or real hi-fi tones) for which a fee has been paid.

Ring-back tones. Consumers can now use this service to greet their callers with music or any message they want. Customers who want callers to hear something more original than the usual beep-beep dial tone can now activate a ring-back tone.

Mobile music. This service allows mobile phone users to select and download full music tracks through the cellular network.

Logos, animations, and screen savers. These include graphical content for which a fee has been paid.

Other information content. These fee-based content types provide information and entertainment services to end users (e.g., SMS mobile alerts, MMS sports information, video download and streaming, horoscope news, adult content).

Mobile messaging advertising. Included in this segment are the following:

- Distribution cost of marketing messages
- Cost of renting consumers' mobile phone numbers from list providers to use for campaigns
- Cost of renting a sponsorship space in someone else's message (e.g., having a tag line in a publisher's news alert)
- Publishers' and service providers' promotion outside of content or service delivery (e.g., when promoting a new product apart from one subscribers already have)
- Sponsored message sent from a Web service to a mobile device

Excluded in this segment are the following:

- Wireless messaging services or content such as publishers' SMS news alerts, even if consumers don't pay for it
- Production cost of creating campaigns
- The cost of promoting campaigns outside of the wireless messaging channel (e.g., through a TV ad)
- Consumers' cost of either interacting with marketers through wireless messaging or forwarding the promotional message to friends
- Sponsored message sent from a Web service to a non-mobile device such as an e-mail address

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