



PRESS RELEASE

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inCode Reveals Top 10 Global Wireless Predictions for 2006
Consolidation, Convergence, New Business Models for Voice Cause Market Shakeups

SAN DIEGO, CA. Nov. 2, 2005—inCode, a global business and technology consulting firm, announces release of its Top 10 Global Wireless Predictions for 2006. The Predictions identify key market changes for the coming year, including: fierce competition that will leave only five handset manufacturers standing, new business models enabled by converging access technologies and new mobile entertainment brands.

“We see two major developments in the market,” said Jorge Fuenzalida, Director, inCode Technology and Strategy Group. “First, new entrants are challenging existing business models, especially in mobile music and mobile TV, which is increasing market competition. Second, network operators are working fast to monetize 3G networks, which cost billions of dollars to deploy. If these operators can better align device design with market-leading applications, they can be at the forefront of a smarter, more nimble wireless industry.”

Here are some highlights of the 2006 Predictions (full text follows this release):

- A digital music innovator will launch a Mobile Virtual Network Operator (MVNO) focused on mobile entertainment services
- Consumers will “snack” on mobile TV, which will not be a killer application
- A new business model for voice services will emerge, based on mobile Voice-over-Internet Protocol (VoIP)
- At least one major network operator will abandon its retail brand and use wholesale access as an innovative business strategy
- China will become a telecommunications leader, and Chinese investors may buy a controlling interest in a wireless company

Ninety percent of the inCode 2005 Predictions have come true, and the 2004 Predictions were 80 percent accurate.

About inCode:

inCode (www.incodewireless.com), a global wireless business and technology consulting firm, develops and implements high-impact strategies and solutions that increase the profitability and performance of wireless networks. In addition, inCode guides enterprises in harnessing the power of wireless communications for productivity and competitive advantage. inCode’s innovative

Next-Generation Wireless Technology Lab enables wireless carriers and enterprises to test advanced wireless solutions prior to making major capital investments.

Founded in 1998 by wireless business veterans and technology pioneers, inCode understands where the wireless world is going and how to get there first. inCode is an ISO 9001 certified company. Headquartered in San Diego, California, inCode has offices in Atlanta, Calgary, Toronto, Guatemala City and Sao Paulo in the Americas; London, Paris, Brussels, Stockholm and Madrid in Europe; and Hong Kong and Beijing in Asia.

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inCode Wireless: 2006 Top 10 Predictions for the Global Wireless Market

- 1. New Entrants in Mobile Music Battle the iTunes Model.** The popularity of ringtones and music downloads has proven that wireless subscribers want mobile tunes. However, if the music industry really wants mobile music to take off, it should control its greed and work with others in the value chain to align pricing, promotions and download times across all access technologies (WiFi, cellular, etc.). Also, look for a digital music innovator to take the industry to a new level of handset/device “coolness” and launch a Mobile Virtual Network Operator (MVNO) focusing solely on mobile entertainment services. Moreover, this innovator will resolve pricing and download disparities.
- 2. First Movers Using a New Business Model Disrupt Voice Services.** eBay’s recent acquisition of Skype and Skype’s deal with German wireless operator E-Plus have accelerated boardroom action. Next year will see a new business model for voice services—the “new voice”—with advertising as the revenue generator and voice as a loss leader. Most wireless operators will adopt a defensive position, preventing access to their networks to avoid revenue cannibalization, but an innovative few will launch aggressively priced services that will rock current tariff plans. Expect the upstarts to garner 5 million users by the end of 2006. These first movers will experience runaway success and be difficult to catch by slower rivals. The market will start to separate between best-effort, low-cost networks and high-quality, pricier networks.
- 3. Mobile TV Struggles, Remains an Experiment.** Video streaming over 3G networks to handsets won’t be a “killer app” any time soon. Instead, subscribers will “snack” on mobile TV where time value of information is important. Mobile TV could quickly use up significant amounts of 3G capacity, so network operators will attempt to limit bandwidth usage and control the customer experience by promoting downloads of news, sports and music video. Internet Protocol Television (IPTV) remains a wireline game for 2006, but may only become a mobile solution in the distant future.
- 4. China Becomes Birthplace of New Telecom Leaders.** China breaks out of its constrained role as a destination for technology transfer and “just a big market” and takes a leadership position in telecommunications, a crucial infrastructure area for any developing economy. So far, the Chinese have invested in computing (Lenovo Group bought IBM’s PC business in 2004) and attempted acquisitions in energy (CNOOC’s July bid for Unocal) and consumer appliances (Haier’s June offer for Maytag). Wireless could be next with a network operator, handset or equipment manufacturer falling under controlling interest of the Chinese.

5. **3G and WiFi Duke it Out for Dominance.** The global 3G handset availability problem will be solved. In Europe, poor 3G coverage, particularly indoors, will damage the user experience and could leave the door open for WiFi to provide a more reliable service in the short term. There is no current vendor solution for this problem, since 3G resides at a frequency that doesn't penetrate buildings cost effectively. However, margins on standalone WiFi business are thin to non-existent, and WiFi doesn't offer full mobility. In the United States, 3G CDMA coverage is good and getting better. Expect more price cuts as Evolution Data Only (EV-DO) CDMA operators seek to knock out WiFi and compete with cable broadband and Digital Subscriber Line (DSL).
6. **A New "Converged Virtual Network Operator" Category Emerges.** The CVNO will look to the consumer like a marriage of Vonage and Virgin Mobile, combining characteristics of a BYOB (Bring Your Own Broadband) Voice-over-Internet Protocol (VoIP) provider and an MVNO. These new operators will attack the convergence space by offering VoIP, mobile voice and mobile data, combining services in new ways that will surprise the industry. In the future, these operators may also add broadband in the form of WiFi hotspots and WiMAX when it becomes widely available. The technology enabling this new operating model is IP Multimedia Subsystem (IMS), the architecture for 3G core networks that allows delivery of IP services in a consistent way to the user device, regardless of the access technology. First offers may be as simple as "number convergence" with a single number for multiple devices. The first CVNOs will likely focus on combining VoIP over WiFi with CDMA or GSM cellular. In the future, they will look to leverage strong existing customer relationships to gradually grow the customer spend and capture the "friends and family" network effect. In 2006, at least two announced CVNEs (Converged Virtual Network Enablers, which are facilities-based wholesale enablers) will launch this phenomenon.
7. **Undifferentiated MVNOs Become MVN"F"s—Managed Virtual Network Failures.** In the MVNO world, those businesses with high added value, complementary retail distribution and a potentially large customer base, such as Walt Disney and Virgin Mobile, will flourish. However, MVNOs that lack differentiation will either fail or be aggregated by a larger player, resembling the shakeout among wireless resellers 10 years ago. In 2006 the first high-profile MVNO will either fail or abandon launch.
8. **First "Bit Pipe" Operators Emerge.** In 2006 the first network operator will depart from conventional wisdom and ditch its retail brand on the premise that it's better to be a terrific wholesaler/access provider than a bad retailer. This operator may be backed by a private equity firm and will drive innovation in the market.
9. **3G Takes Hold Before Fixed WiMAX.** *Wi?* CDMA and 3G technologies, now rolling out worldwide, will be quickly deployed and adopted, especially in urban areas. But when it comes to obtaining affordable wireless broadband, rural and suburban dwellers without access to cable TV or DSL are asking *Wi-Not* us? It's a big issue across the United States. inCode economic analysis indicates that fixed WiMAX could eventually help solve the rural broadband delivery problem if certain equipment costs come down.

10. EV-DO Complements RIM's BlackBerry™, Eventually Kills WiFi Data.

Executives and road warriors devoted to BlackBerry devices are developing an additional addiction—to EV-DO. Now available from Verizon and Sprint Nextel in most U.S. markets, EV-DO enables fast, convenient attachment downloads. However, users are more likely to view EV-DO as a complement to, rather than a replacement for, their purple phones. This year EV-DO pricing is reduced again and displaces paid WiFi because EV-DO offers mobility. The order of preference will become: 1) laptop on free WiFi, 2) laptop on EV-DO, 3) paid WiFi.

BONUS Prediction: More Consolidation

11. Fierce Competition Brutalizes Handset and Infrastructure Equipment Markets.

Expect a pitched battle among manufacturers and more competition from new entrants. Within 12 months, *five* long-term survivors worldwide will emerge from the brutally competitive handset market. Expect high-profile casualties, since rapid price declines have damaged profitability. The winning manufacturers will take all, and profitability will increase in the future. On the infrastructure front, expect a large networking company or even a Chinese manufacturer to buy a wireless equipment vendor hurt by declining revenues and layoffs.

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