Mobile Phone Evolution: Critical Answers for the Next $100 Billion in Sales

Multiclient Study Proposal
December 5, 2006

In collaboration with Datacomm Research.

Summary

This document is a proposal for multiple companies to participate in an in-depth investigation to be conducted jointly by Datacomm Research and Rysavy Research. The research will characterize and analyze mobile phone evolution, focusing on the ability of different core technologies to serve increasingly complex application and networking requirements.

Mission

The mobile phone is history's most successful consumer electronics product. An estimated one billion handsets will be shipped in 2006. Yet mobile phone technologies, functions, and applications are evolving rapidly, often in new and untested directions, with participating companies having to make technology decisions that span multiple years. Operators, handset manufacturers, application developers, content providers and other vendors need a clear and accurate picture of how mobile phones will evolve to ensure their future success. A wrong decision today can cause loss of market share tomorrow.

Handsets must increasingly support diverse and highly complex functions at extremely low price points. The purpose of this investigation is to gauge the suitability of leading chipset and operating system architectures to serve expected, probable, and potentially disruptive functions. The results will assist clients in creating more flexible strategies to aggressively pursue target markets while minimizing risks.

This unique study will be directed by researchers with extensive knowledge and contacts in the mobile computing and wireless industries, as well as experience defining, developing, and launching successful new products. It will provide a comprehensive mobile phone technology

and product roadmap—a guide to where mobile phones and allied technologies are headed and an incisive and in-depth comparison of the competing pathways.

Dozens of the world's leading technologists, business planners, product developers, market researchers, and end-users will be interviewed.

Recognizing the widespread failure to fully anticipate the impact of the Internet, the study's top priority is to ensure clients are prepared for all significant opportunities and challenges. In particular, the study will assess how advances in mobile phone processing power, memory, and broadband networking will affect and even displace traditional computing and communications models.

Meeting our clients' objectives

The study will consist of a core investigation, the results of which will be shared with all participating clients, and client-specific investigations, which will remain proprietary to the respective clients. Each client may submit up to six focused questions of proprietary interest.

Clients will be briefed on the preliminary findings once the research phase is approximately 50% complete. Adjustments to specific research objectives will be made in response to recent market developments and research findings.

Clients will also receive a detailed Statement of Objectives for the core investigation. The Statement of Objectives will provide a more detailed and extensive list of issues to be investigated. Each client will have an opportunity to contribute to the Statement of Objectives prior to approval.

Evolution of handset hardware/software architectures

Mobile phones' features, performance, cost, and styling are enabled (and constrained) by the core technology. This investigation will identify, probe, and compare the leading chipset and operating system choices. How are specific core technology choices positioned to meet mobile operators' and end-users' needs? How will specific core technology choices affect application developers, content producers, and third-party products and services? What risks are associated with specific core platform choices?

Specific questions to be answered include:

Business implications

- How suitable are leading chipset solutions from companies including Texas Instruments, Qualcomm, Marvell, Freescale, and Broadcom for specific application and market segment requirements?

- How suitable are leading operating system solutions including BlackBerry, Enea, Linux, Microsoft Windows CE/Mobile, Palm OS, and Symbian for specific application and market segment requirements?
- How do emerging technologies, such as voice over WLAN, municipal/metro Wi-Fi, femtocells, Evolved EDGE, and WiMAX threaten current business plans?
- Will high level operating systems (HLOSs) penetrate the mid-range market? Which HLOSs will win? Which current solutions are most at risk?
- Will a large market emerge for computing-centric handheld devices? How will it alter core technology evolution? How will it affect mobile operators?
- How will key market segments such as youth, women, minorities, early adopters, enterprise users, and developing countries influence core technology evolution?
- Who are the likely winners in the handset ecosystem? What entities are likely to be marginalized?

Technology evolution

- How will mobile phone chipsets evolve over the next five years in terms of architecture, cost, processing power and speed, memory, power efficiency, and integration?
- Will security requirements for content and mobile commerce favor certain architectures and/or hardware support?
- How will mobile phone operating systems evolve over the next five years in terms of architecture, integrated services, development environment, interoperability, and user interface/ergonomics?
- Is one phone operating system likely to dominate? Can Palm OS survive?
- Which device platforms are best-suited for evolving wide-area wireless technologies including EV-DO Rev A/B/C, HSPA, HSPA+ and WiMAX?
- Which short-range wireless technologies such as infrared, Bluetooth, UWB, and near field communications (NFC) must be supported?
- What are the implications for handsets of supporting multiple radio interfaces?
- Will API standardization (e.g., Open Source Development Lab) strengthen Linux' position and to what extent does Linux threaten other OSs?
- How will battery life and power consumption enable or constrain handset capabilities?

Implications of key applications/technologies on mobile platforms

- IP Multimedia Subsystem (IMS) capabilities (e.g. location, presence, VoIP, and video)
- Fixed/mobile and WLAN/cellular convergence
- Camera phone evolution
- MP3 and other media players
- Mobile TV
- Conditional access and digital rights management
- Voice over IP (VoIP)
- Location-based services
- Storage technologies

- The user interface: likely developments in displays, voice recognition, and ancillary input devices

Methodology

The research will be conducted using a combination of techniques. The primary research methods will be on-site visits and telephone interviews with leading technologists, vendor executives, and enterprise users. Other resources will include industry associations, research centers, pioneering end-users, consultants, and written material and presentations.

The core study is expected to entail more than 30 in-depth interviews. Client-specific questions may entail additional interviews.

Delivery

The results will contain information obtained through the investigation as well as the authors' analysis. The results will be delivered in report and presentation formats.
The main report will consist of an Executive Summary, discussion of Likely Technology Evolution, Platform Capability Assessment, an analysis of the Impact on Business Models, an exploration of Technology Wildcard Scenarios, and Summaries of all Interviews. In particular, the report will assess in detail the ability of different handset platforms to address different application requirements.

Each client will also receive a brief report directly addressing the respective client's proprietary interest questions.

The research will commence February 1, 2007 and will be completed by May 30, 2007.

Price

The cost to clients will be $12,500. A 50% deposit ($6,250) is required in advance to participate. The balance is due within 30 days of receipt of the final report. An on-site presentation of the results may be ordered for an additional $3,000 plus travel expenses.

Investigators' qualifications

Ira Brodsky and Peter Rysavy have more than 50 years of combined experience in telecommunications.

Peter Rysavy is President of Rysavy Research and has authored numerous white papers, market/technology research studies, articles, and columns. He has researched and produced white papers for major industry organizations such as 3G Americas. Prior to founding Rysavy Research, he was VP of Engineering and Technology for Traveling Software. He earned his BSEE and MSEE from Stanford University.

Ira Brodsky is president of Datacomm Research Company and has authored two books, dozens of market research studies, and more than one-hundred white papers, articles, and columns on wireless communications. He has been a regular columnist with Network World for ten years. Prior to founding Datacomm Research, Brodsky was Director of Product Marketing for US Robotics. He holds a BA in Philosophy from Northwestern University.