

# Worldwide Mobile Imaging: Stimulating Demand and Usage

Focused

Responsive

Credible

Visionary



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- **Usage Models by Major Global Markets**
- **Mobile Imaging Behavior over Time**
- **Product and Service Trade-Offs**
- **Handset Features and Brand Preferences**
- **Messaging and Related Services**
- **Home vs. Retail Photo Printing**
- **Pricing, Alliance, and Strategy Recommendations**



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## Introduction

Camera phones are entering the rapid growth stage and they will soon be the most common image capture device in the world. InfoTrends/CAP Ventures estimates that over 175 million camera phones were shipped in 2004, and that by the end of the decade there will be a global population of over one billion mobile imaging handsets -- more than double the number of digital still cameras (DSCs).

Although handset shipments are booming, consumers are not using their camera phones to the fullest extent. InfoTrends/CAP Ventures research reveals that the number of photos taken, shared, and printed is relatively low compared with DSCs, resulting in a significant unrealized revenue potential for the mobile imaging industry. Additionally, our research indicates:

- On a monthly basis, consumers take twice as many photos and print more than five times as many prints with their DSC than with their camera phone.
- Camera phones are much more likely to be used for capturing pictures of unplanned and relatively unimportant events like socializing with friends, whereas DSCs are more likely to be used for vacations and family events.
- Poor image quality is the most commonly cited factor for not taking, sharing, and printing more camera phone pictures.
- Additional inhibitors to camera phone photo activity include lack of friends with compatible devices and high costs.

For the camera phone to quickly reach its potential, technology vendors, carriers, and photo printing service providers must provide consumers with a compelling experience. Today, most camera phones lack the image quality and functionality necessary for many types of pictures. Additionally, for most customers the camera phone usage model is not as easy, convenient, or satisfying as the DSC.

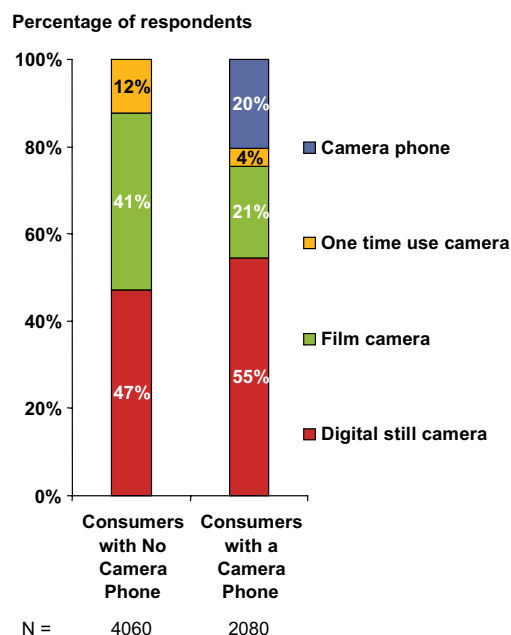
Despite the current limitations, recent InfoTrends/CAP Ventures research reveals that 20% of camera phone users indicate the camera phone is their primary camera. The research suggests that with improvements in functionality and usage model, camera phones have the potential to be the most common AND most frequently used type of camera.

Improvements in the camera phone experience are occurring, but they have been relatively slow due to differing priorities of handset manufacturers, wireless carriers, and retail photofinishers. Concerns regarding costs, usage models, pricing, and revenue opportunities are affecting product design and service offerings to the detriment of maximizing the mobile imaging potential.

InfoTrends/CAP Ventures believes the industry needs to stimulate more photo activity among camera phone owners to accelerate (1) handset purchases, (2) picture taking, and (3) sharing, storing and printing services. Our research indicates that camera phone owners that take more pictures tend to share more images, print more images, and purchase handsets more frequently.

InfoTrends/CAP Ventures is conducting an extensive study of consumers, retailers, carriers, and technology providers to understand the opportunities and requirements for mobile imaging devices, software and services.

**Primary Camera**



## Critical Questions

This study will address a variety of interrelated questions affecting your product and business planning in key geographic markets, including:

- What values and benefits do consumers derive from their camera phone?
- How is usage changing over time?
- What are the differences in the mobile imaging use case and consumer behavior by key geographic markets?
- What do consumers view as the primary limitations and sources of frustration with their camera phone and related services?
- What are the relationships between camera phone photo capturing, viewing, sharing, archiving, and printing activities?
- How important is viewing vs. sharing vs. printing?
- How does the mobile imaging market segment by key demographic and behavioral characteristics?
- How do consumers prefer to view, manage, share, and print their camera phone pictures?
- How important to consumers is easy retail photo printing from their camera phone? What methods do they prefer?
- What product features and services will increase camera phone photo activity?
- What are the key features and service thresholds for making the camera phone consumers' primary camera?
- What are the risks and opportunities for mobile imaging under different product design, use case, and business models? How will ARPU change?
- What technology investments and alliances must vendors make to maximize their revenue opportunity?

## Project Objectives

This study is designed to help mobile imaging technology vendors, wireless service providers, and retail photofinishers expand the market for camera phones and related imaging services. Participants in this study will gain a global perspective based on insights from understanding the experiences and differences in four major geographic markets: China, Japan, Western Europe, and North America.

The research will address the following objectives:

- Segment the market of camera phone users and non-users
  - Demographics
  - Devices and services
  - Values, attitudes, and behavior
- Map out customer camera phone photo usage models and identify problems
  - Capture
  - View
  - Share
  - Store
  - Manage
  - Edit
  - Print

## Project Objectives (Contd.)

- Understand how consumers' mobile imaging attitudes and behavior are changing
  - When and why customers are using and not using camera phones
  - Unmet needs and sources of friction in current mobile imaging use case (i.e. image quality, network speed, ease of use, data storage, management, interoperability, pricing)
  - Comparisons with DSCs and OTUCs (i.e. photos, volume, sharing, printing)
  - Enablers and inhibitors to increasing camera phone photo activity (i.e. more photos, sharing, printing, handset purchases)
  - Requirements for shifting imaging to camera phones
- Assess consumer perceptions and preferences
  - Viewing vs. printing
  - Value of imaging functions and services
  - Trade-offs for features, design, price, convenience, and brand
  - Photo print models (home vs. retail vs. online)
  - Preferences for storing, managing, and moving images
  - Pricing and bundling
  - Motivators for device and service provider purchases
- Understand the relative importance of key handset features and functions
  - Image resolution, zoom, and flash
  - Removable media, connectivity (i.e. Bluetooth, infrared, USB)
  - Display
  - Software (i.e. editing, management, sending, printing)
  - Video
- Assess potential impact of alternative mobile imaging scenarios
  - Handset design factors
  - Service model factors (i.e. carriers, photo retailers, online, home)
  - Pricing and bundling
  - Impact on photo activities and other revenue streams
- Forecast the market
  - Handsets by image quality (i.e. shipments, installed base)
  - Photos, sharing, prints by location, and value of services
  - Understand the impact on OTUCs and DSCs
- Identify key services, infrastructure investments, and alliances
  - Service offerings
  - Software
  - Production equipment
  - Alliances (i.e. technology vendors, wireless carriers, and photofinishing retailers)
- Recommend product, pricing, positioning, and service strategies

## Market Research

The project will include extensive review of existing research and interviews with technology vendors, end-users, and photo service providers across a variety of market segments. Ultimately, the study will identify market segments, critical success factors, customer requirements, usage patterns, purchase plans, and other items that will drive vendors' product, service, marketing, and sales activities.

## Secondary Research

InfoTrends/CAP Ventures has conducted extensive research over the last 24 months with technology vendors, service providers, and consumers related to digital imaging. Relevant research reports that we can leverage as part of this study include:

- Online Photo Services Forecast
- Worldwide Digital Camera Forecast
- Worldwide Camera Phone and Mobile Imaging Forecast
- Photo Kiosk and Retail Digital Photofinishing Forecast
- Digital Camera End-User Survey\*
- Online Photo Services End-User Survey\*
- Digital Photo Printing End-User Study\*
- Worldwide Mobile Imaging Study\*

\*Reports based on at least 1,000 structured interviews.

We will also thoroughly examine existing market information on government regulations, market segments, competitors, and product categories. InfoTrends/CAP Ventures anticipates utilizing a variety of sources, including:

- Industry trade associations
- Published industry reports
- Periodicals and trade articles
- User groups
- Web sites
- Government statistics and regulations
- Industry databases
- Vendor white papers
- Research reports

## Personal Interviews with Technology Vendors and Service Providers (15)

InfoTrends/CAP Ventures will conduct up to 15 in-depth interviews with product and market managers for handset manufacturers, service providers, and photo printing equipment vendors. The intent of the interviews will be to understand product positioning, product development directions, and perspectives on how the market will develop. The interviews will include:

- Product design and service trends
- Industry standards
- Pricing and bundling
- Strategies
- Alliances

## In-Depth User Interviews and Use Case Profiles (80)

InfoTrends/CAP Ventures will conduct a series of in-depth personal interviews with a wide range of consumers to understand their camera phone and DSC usage activities, workflow, and sources of frustration. We will select a diversity of participants based on characteristics such as different geographies, demographics, service providers, handset models, and level of photo activity. The interviews will include:

- Purchase and usage drivers
- Photo activities
- Usage models
- Sources of fulfillment and frustration
- Product requirements and service preferences
- Future intentions
- Pricing and bundling

## Structured Survey with Consumers (2,000)

InfoTrends/CAP Ventures will conduct a structured survey with at least 2,000 consumers across the four major regions that are using or plan to purchase a camera phone. The end-user research will be essential in understanding the factors influencing the adoption and usage of camera phone equipment and services, including:

- Attributes
- Behavior
- Product and service preferences
- Price sensitivity
- Brand preferences

InfoTrends/CAP Ventures will speak with existing camera phone users as well as non-users in each market. The analysis will enable comparisons by customer attributes such as demographics and behavior.

## Analysis and Project Deliverables

Extensive analysis of the desk research, personal interviews, and structured surveys will be conducted to develop a comprehensive understanding of the opportunities and issues for equipment vendors and service providers. Clients will receive a combination of reports, presentation material, and research data for senior management, product managers and planners, and sales and marketing executives. The material will include:

- Executive summary that addresses key issues, findings, and overall recommendations
- Detailed written report (at least 150 pages) with text, charts, and graphs addressing the objectives of the study:
  - Technology vendor and service provider perspectives
  - Mobile imaging usage models
  - Consumer behavior profiles and market research
  - Market size and growth scenarios
  - Strategy recommendations
- Set of presentation-style overheads for internal communication of the research results
- Data book of the survey tabulations for additional analysis of key questions and market segments

## Project Schedule

InfoTrends/CAP Ventures intends to start the project in June 2005. Based on the following schedule, the project will be completed with material distributed by the end of October 2005. Throughout the project, InfoTrends/CAP Ventures will issue regular updates on the project status.

Key project milestones are as follows:

June 2005	Desk research
July 2005	In-depth interviews with vendors
August 2005	Interviews with end-users
September 2005	Data analysis and report development
October 2005	Report delivery

## Project Fees

Clients may have multiple business units participate in the study, review the questionnaires, and receive a copy of the report at no additional charge. InfoTrends/CAP Ventures invoices the first half of the fee upon initiation of the contract and the second half upon delivery of the report.

### Before June 30, 2005:

Base report with data tabulations and forecast for any one region	\$9,995
Data tabs and forecast for each additional region	\$2,500
Personal presentation	\$2,000 plus travel expenses

\*Clients that sign up before June 30 can provide input and review the interview guides and questionnaire.

### After June 30, 2005:

Base report with data tabulations and forecast for any one region	\$11,995
Data tabs and forecast for each additional region	\$3,500
Personal presentation	\$2,000 plus travel expenses

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