The Next Era of Mobile Enterprise and Consumer Application Platforms

William Clark

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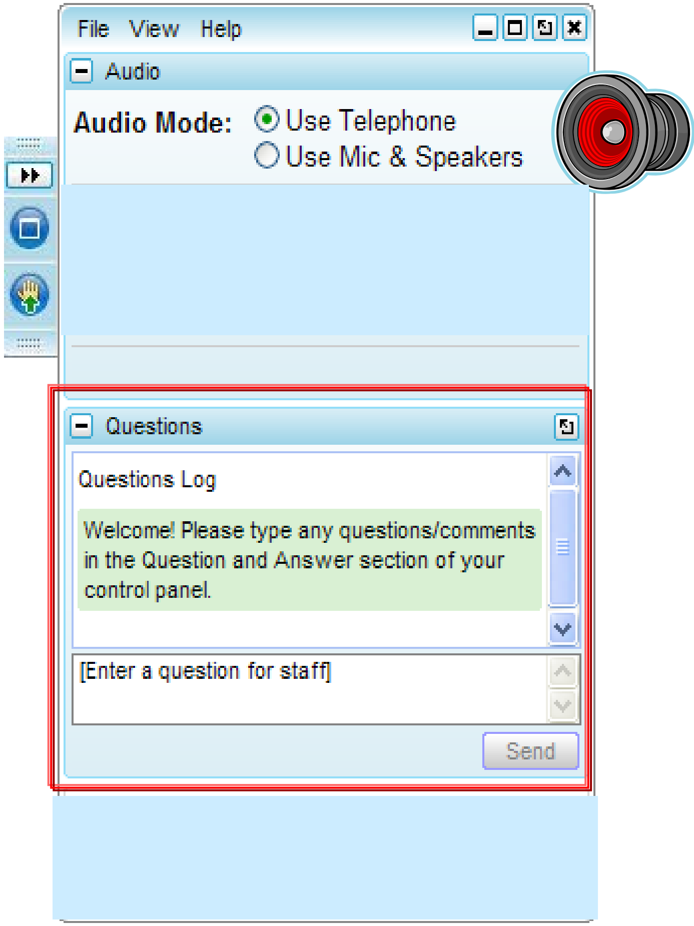

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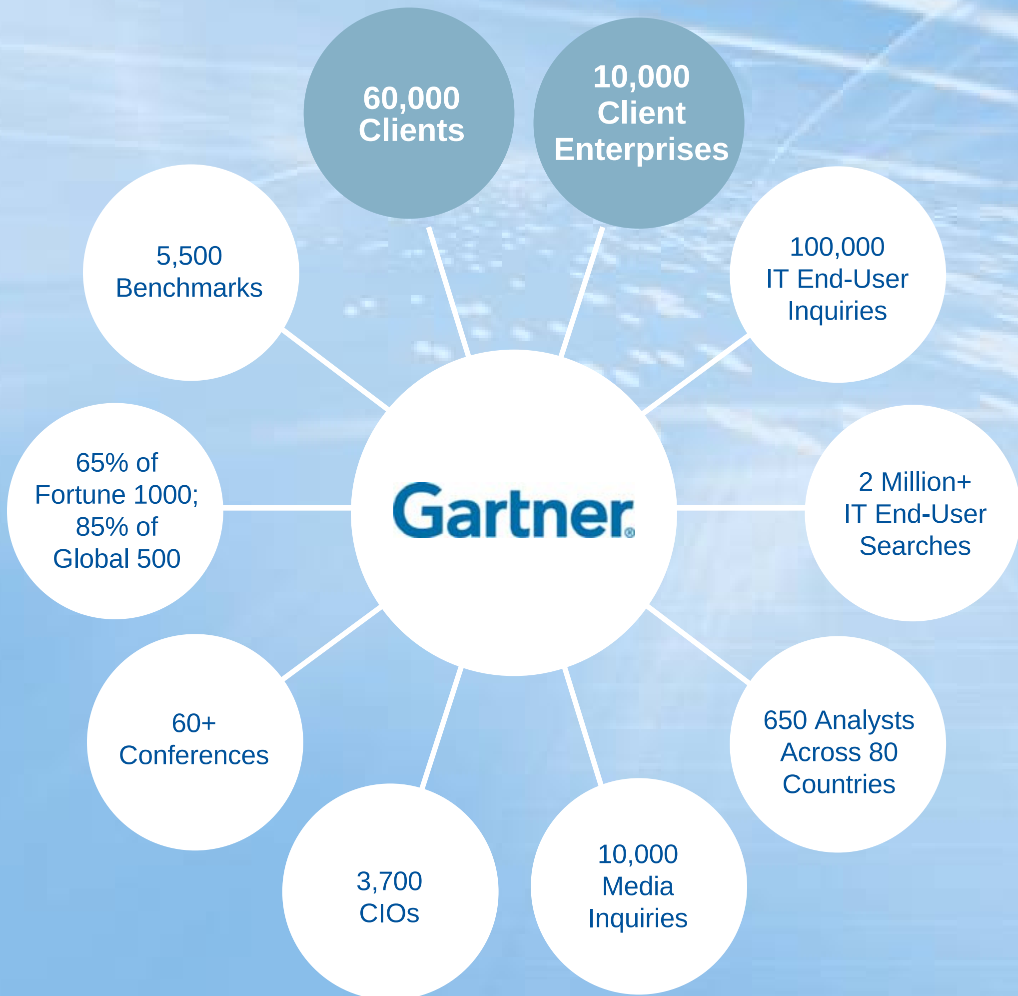

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The Next Era of Mobile Enterprise and Consumer Application Platforms

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Key Issues

- How will enterprises apply wireless, location, and context-aware technologies to best run, grow or transform consumer- or employee-facing business applications and processes?
- How will technologies, development platforms and architectures that enable and support mobile applications evolve?
- How can enterprises best address the proliferation and fragmentation of the mobile browser, operating system and software platforms?

New Market Drivers and Challenges for Mobile Consumer Experience


Android — "open-ness
WebOs — "navigation"

iPhone — "consistency"

BlackBerry — "integration"

Symbian — "breadth"

Windows Phone — "hub"

Drivers

- New Client Capabilities
- Mobile Advertising
- Branded and Interactive Experience
- Multichannel Access
- Convergence with Gaming, TV
- Context-Aware Computing
- Advanced Media
- Visualization

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Mobile Technologies on Your Radar Screen

Near Field Wireless

Context

Agents

M2M & embedded wireless

802.11ac

Location awareness & augmented reality

Advanced mobile UIs

LTE

Mobile HTML 5

Bluetooth 3

Widgets

Mobile Web

Pico projectors

802.11n

Bluetooth LE

App Stores

Multicore handsets

Touch interfaces

Wireless broadband

Flexible displays

Platform independent mobile AD

2011-2015	2010-2012	2011-2015

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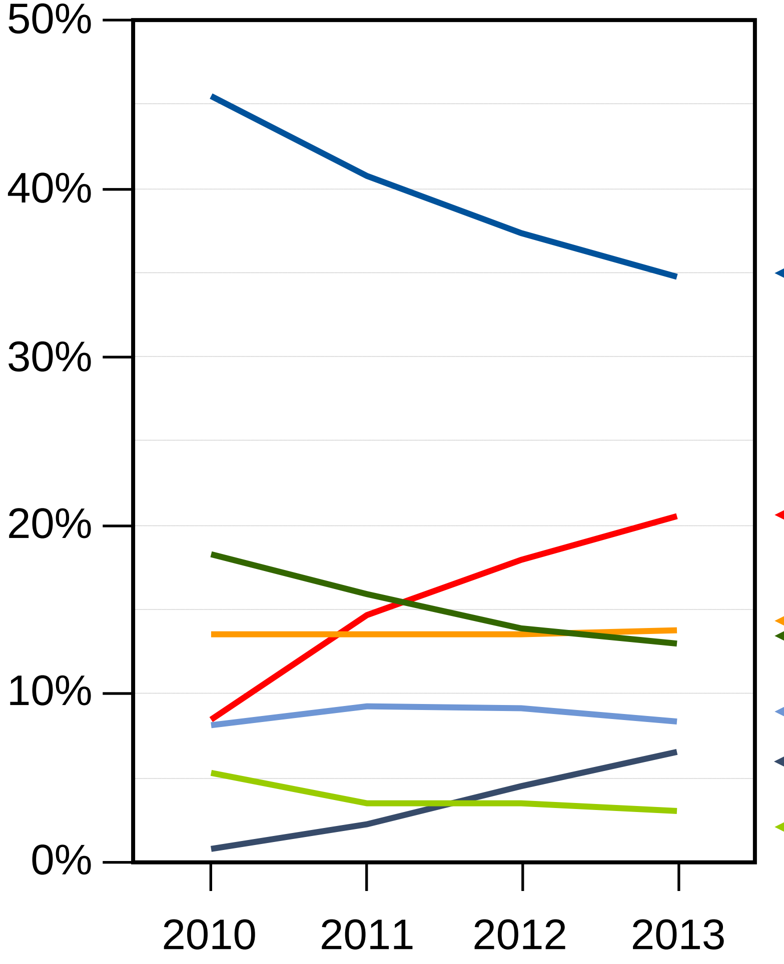
Handset Platforms
No One Can Afford to Slip Up

Mobile Platform Market Share



Symbian holds the lead, dominated by Nokia, despite open source

Android gains share and appears on more devices, such as netbooks, e-books and nonphone MIDs

iPhone shipments grow, but share changes little as the market expands

RIM loses share to more consumer-oriented platforms and ecosystems

Windows Mobile — complex Microsoft strategy, includes WM7, WM6.x, Pink

Maemo/MeeGo replaces Symbian in high-end Nokia devices

Others, including **Linux**, **webOS**, **LIMO**, remain niche platforms

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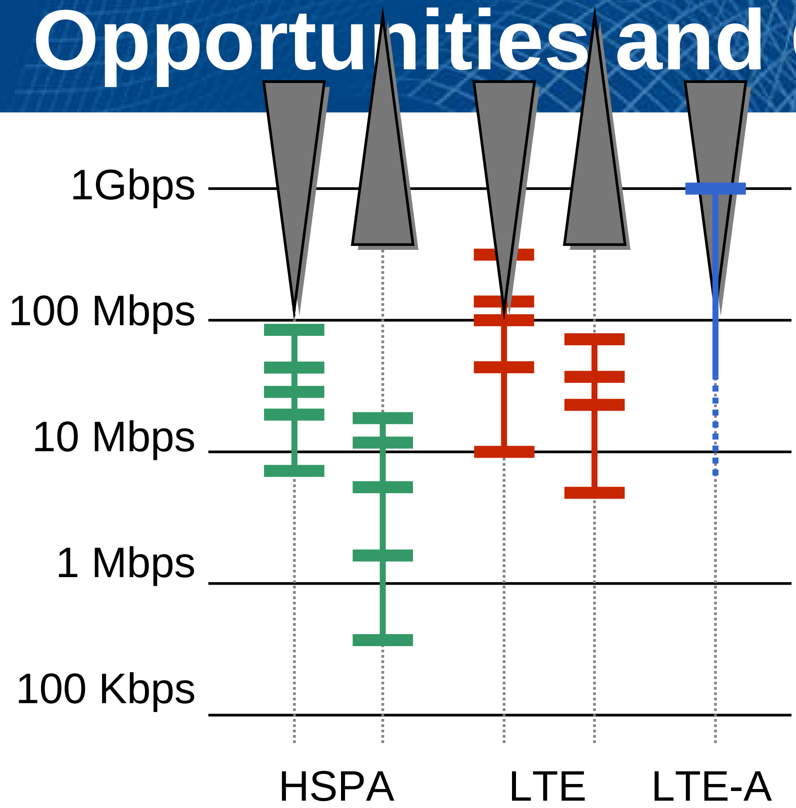
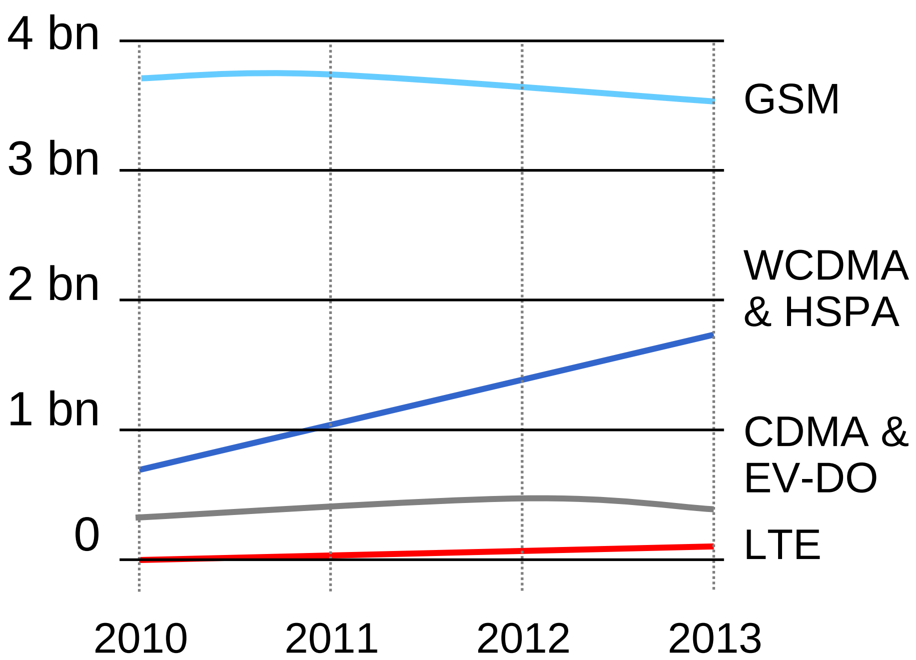
Cellular Network Opportunities and Challenges



Peak theoretical data rates

Downlink Uplink



Cellular subscribers by technology

- Clear technical road map to 4G, but many paths to get there
- Data demand is exploding; providing the capacity is possible but expensive
- Network performance has become a competitive issue
- Several generations of network will coexist in most regions

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Position of Mobility in CIO Technology Priorities, 2010-2013

1	Transportation
2	Retail; Software Developers/Publishers
3	Healthcare; Utilities
4	Agriculture/Mining/Construction; Education
5	Media
6	
7	Government; Manufacturing; Services
8	Financial Services
9	Business/Consumer Services
10	Energy
N/A	Wholesale; Telecommunications

Gartner survey of 1,586 CIOs across all major geographic regions conducted at the start of 2010

"N/A" indicates that mobility did not appear in the CIOs' "top 10" technology priorities

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Mobile Investment Choices

Optimized Customer Experience
- Point of Sale
- Mobile Business 2.0
- B2C — First Generation
- Mobile TV

Capital-Oriented Processes
- Supply Chain
- Warehouse
- Enterprise Asset Management
- M2M

Labor-Oriented Processes
- Location
- Dashboards
- Field Service Management
- Sales Force Automation

Lightweight Extension
- Company Directory
- Travel and Expenses
- HR — Training
- Compliance

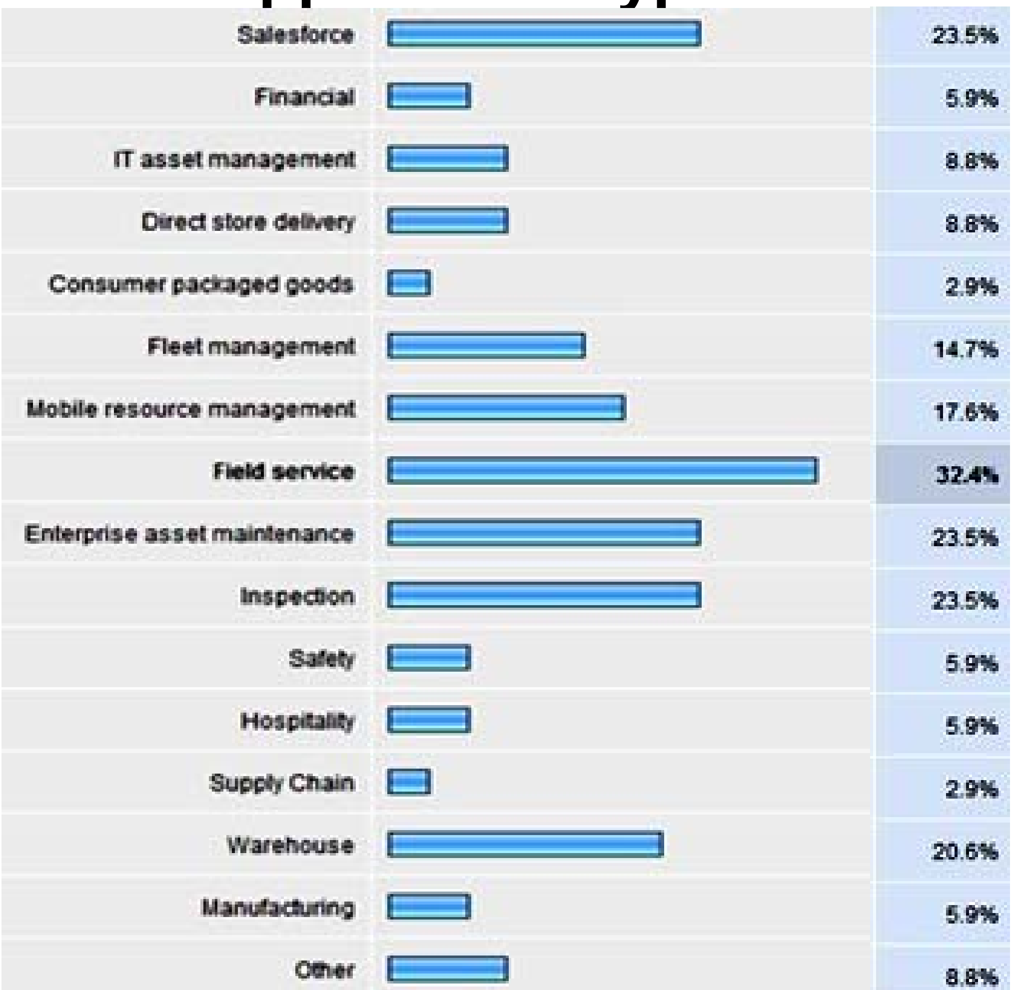
Mobile Collaboration
- Mobile E-mail
- SMS
- Group Voice
- Mobile IM
- Unified Communications
- Mobile Search

Mobile Connectivity
- WLAN — Data
- Mobile Development Mgmt.
- WWAN — Voice/Data
- Mobile VoIP/IPT
- FMC/MMC

Business Risk Low → High

Enterprise Mobile Applications: Application Type, Key Determinants

Application Type



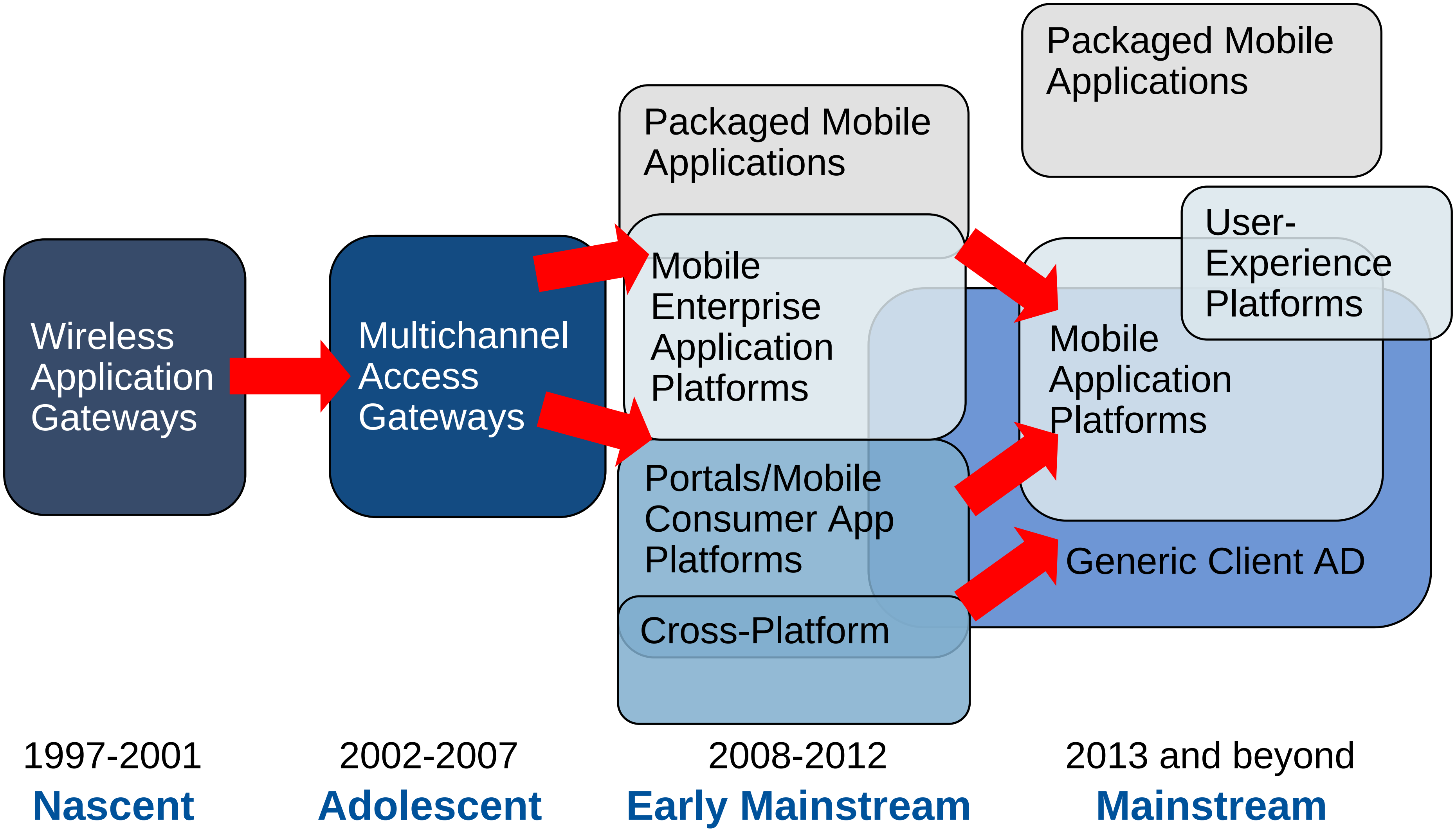
Source: Gartner Survey, 4Q08, n=48

Reasons for Vendor Selectio

Multichannel/Flexibility	27%
Business Process Knowledge/Solution Expertise	21%
Application Functionality	21%
Price	21%
Speed of Deployment	19%
Application Integration	19%
Development Skill Match	8%
Corporate Standard	6%
Security/Management	3%
Performance	3%
Other	2%

Source: Gartner Survey, 4Q08, n=48

2010-2013: Divergence, then Convergence of Mobile Development Platforms



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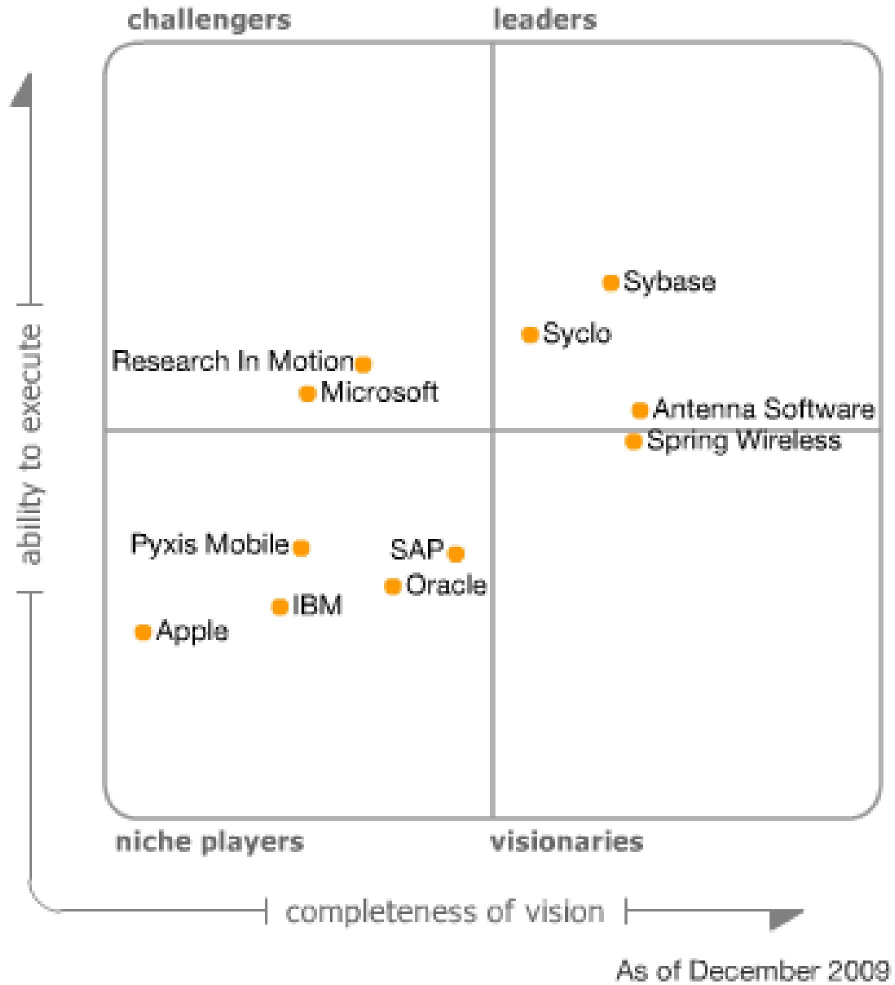
2009 Mobile Enterprise Application Platform Magic Quadrant



Source: “Magic Quadrant for Mobile Enterprise Application Platforms”

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Strategic Planning Assumptions

By 2013, mobile phones will overtake PCs as the most-common Web access device worldwide.

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Value-Based Mobile Business Strategy

What are your business goals & metrics?

Who are the customers?

Where are the customers, what's their context?

Which devices and habits do your customers have?

Non-smartphones	75%
RIM	10%
iPhone	6%
Other smartphones	4%
Android	3%
Microsoft	2%

(illustration, not representative of any specific customer set)

What value will each customer platform deliver?

What will be the most profitable platform & technology mix *(e.g., native vs. mobile Web vs. SMS vs. other)*

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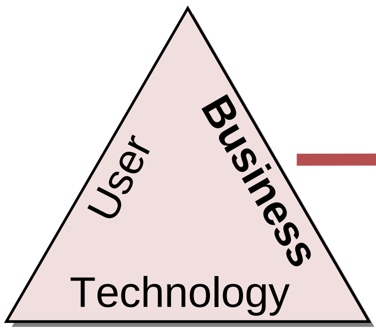
Financial Strategy
What Will M-Business Cost?



Native
- 1 to 3 developers
- Support/training for critical applications
- $20K to $200K p.a. (per platform)

Mobile Web
- $100K to $300K setup
- $5K to $10K pcm hosting (1M pages)

SMS
- Short code: $1,000 setup, $1,000 per month
- $65K per 1M messages

Cost-Justification Approaches

- Ignore the cost: R&D, learning, marketing, skunkworks
- Classic ROI = (benefit - cost), rate of return, NPV
- VOI or options based pricing — Includes less tangible benefits, e.g., the value of "being in the game"

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Case Study: Mobile Retail Applications, January 2010

Average

- Store finder, stock status checks
- Catalog, sometimes with shopping facility
- Marketing, offers, vouchers, information

Innovation

- "Amazon Remembers" — take a photo of a book or item of clothing, Amazon suggests where to buy it
- Nike — Convert a photo into a personalized color palette, and advise on matching Nike products
- Ikea — Augmented reality, see how furniture looks

Observations

- Native apps. must be better than your website
- Mistakes are visible and attract comments
- Users always want more
- People game the system

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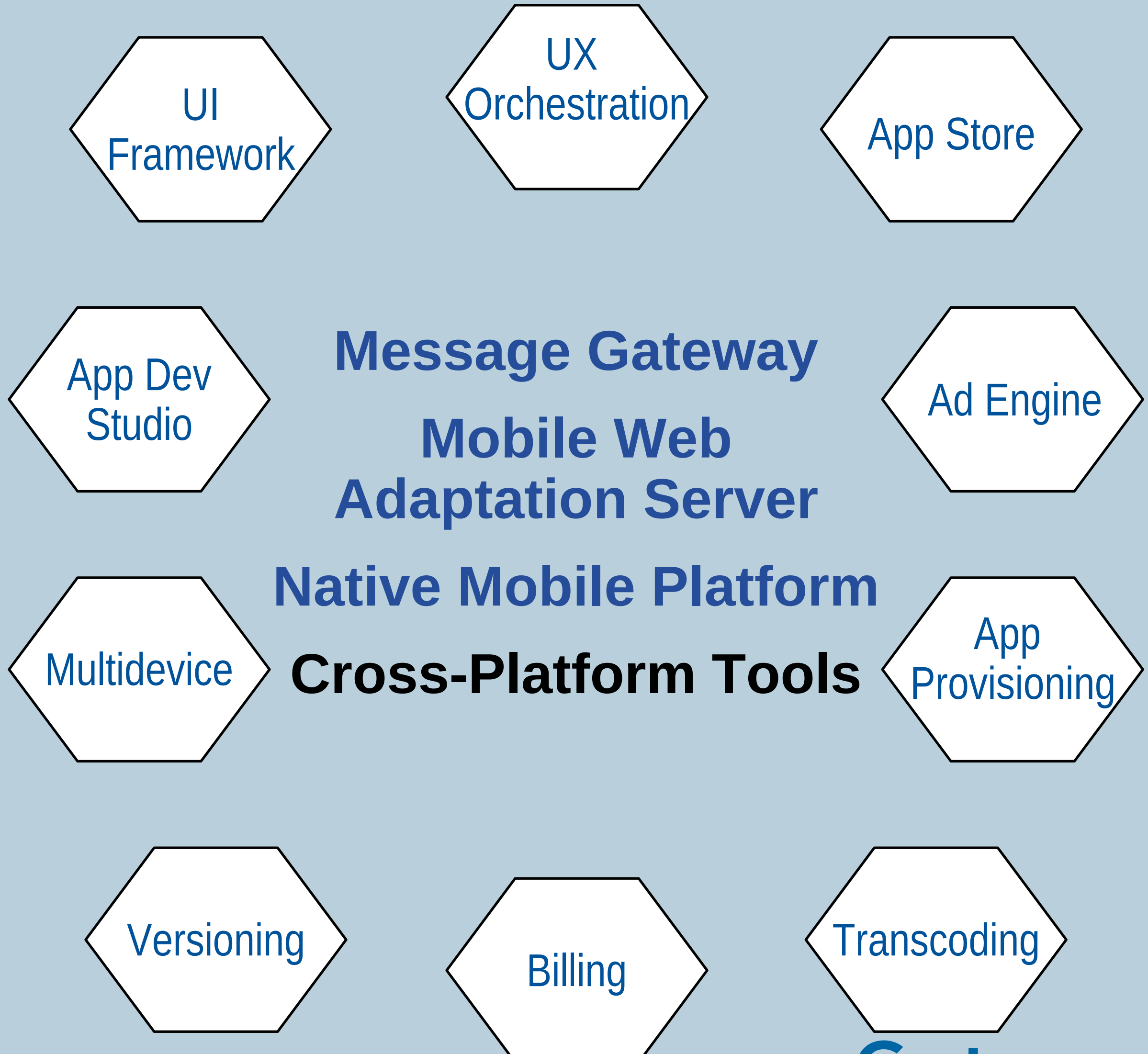
Mobile Consumer Application Platforms (a.k.a. MCAPs)

- MCAPs allow enterprises to provide services to consumers through a mix of texting or Web browsing or native applications
- Enterprises need to understand the components, as no single vendor can provide entire breadth of capability
- MCAPs are backbone of mobile and context-aware commerce



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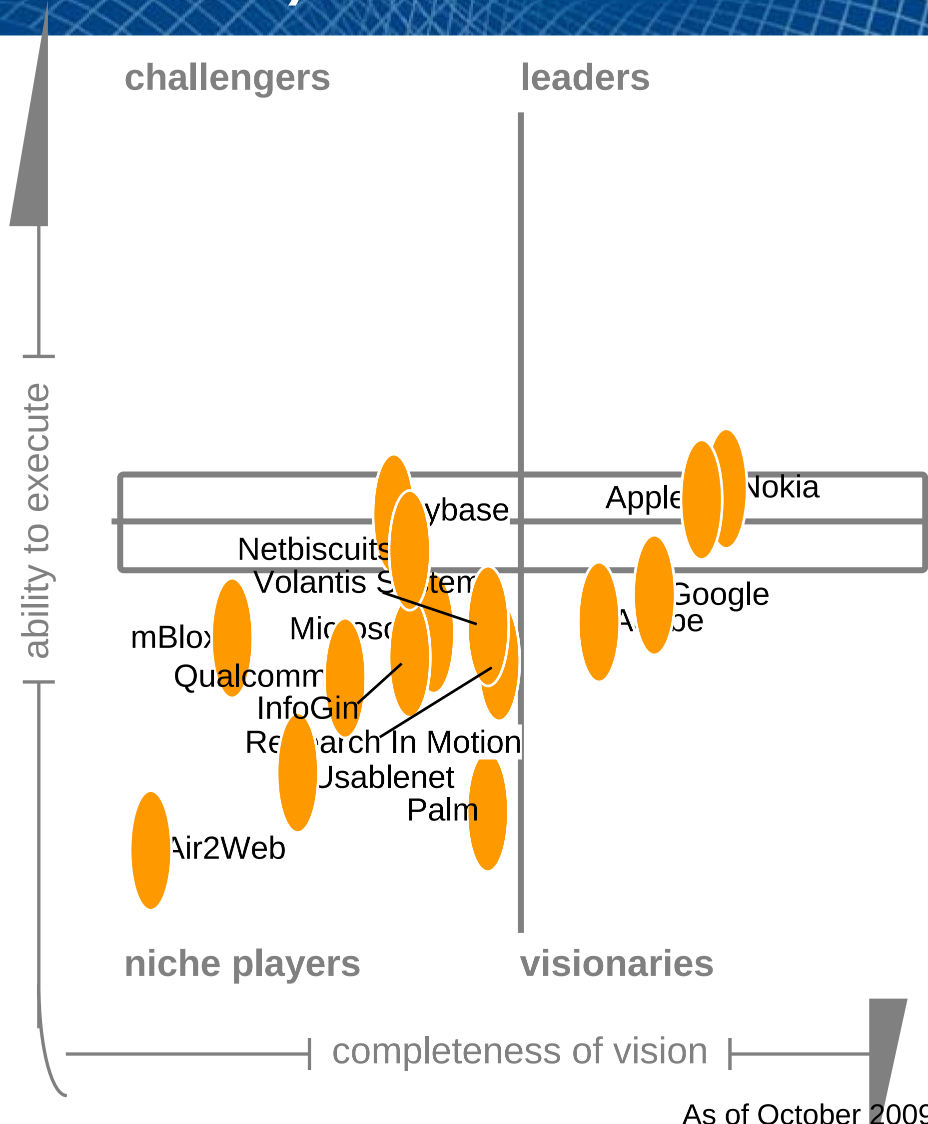
Mobile Consumer Application Platform Magic Quadrant, October 2009



(From "Magic Quadrant for Mobile Consumer Application Platforms," 3 December 2009)

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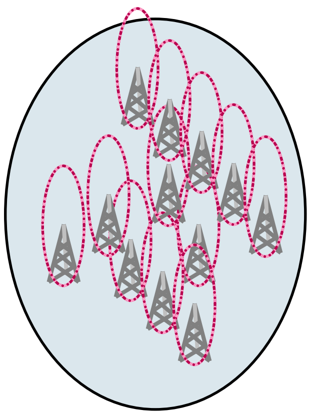
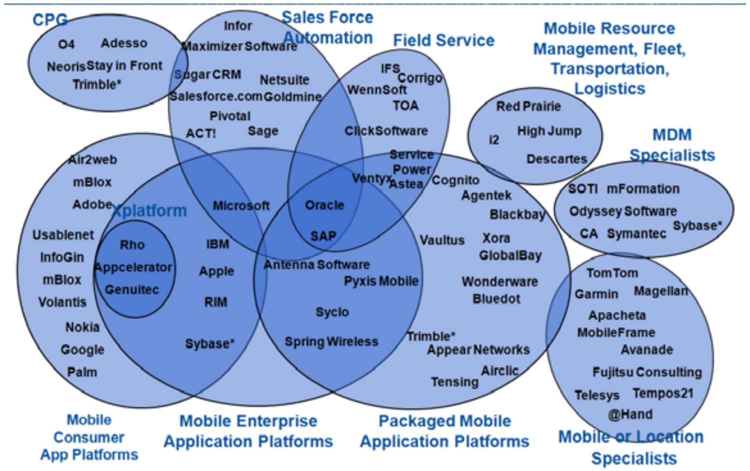
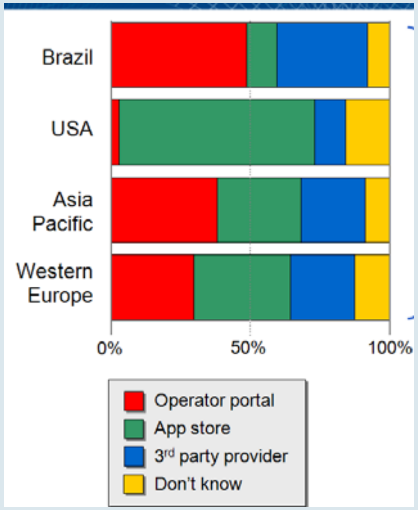
The Degree of Mobile Market Fragmentation Worldwide

1,150 Network Operators



400+ Mobile Software Vendors





Variations in App Delivery

- Preload
- Side-load
- Single Appstore
- Multiple Appstore
- Web
- Via Text

11 OS, 49 Manufacturers, 8,000 devices

- Native
- Adapted
- Overlay
- Augmented
- Web
- Text

Varying smartphone application UI approaches

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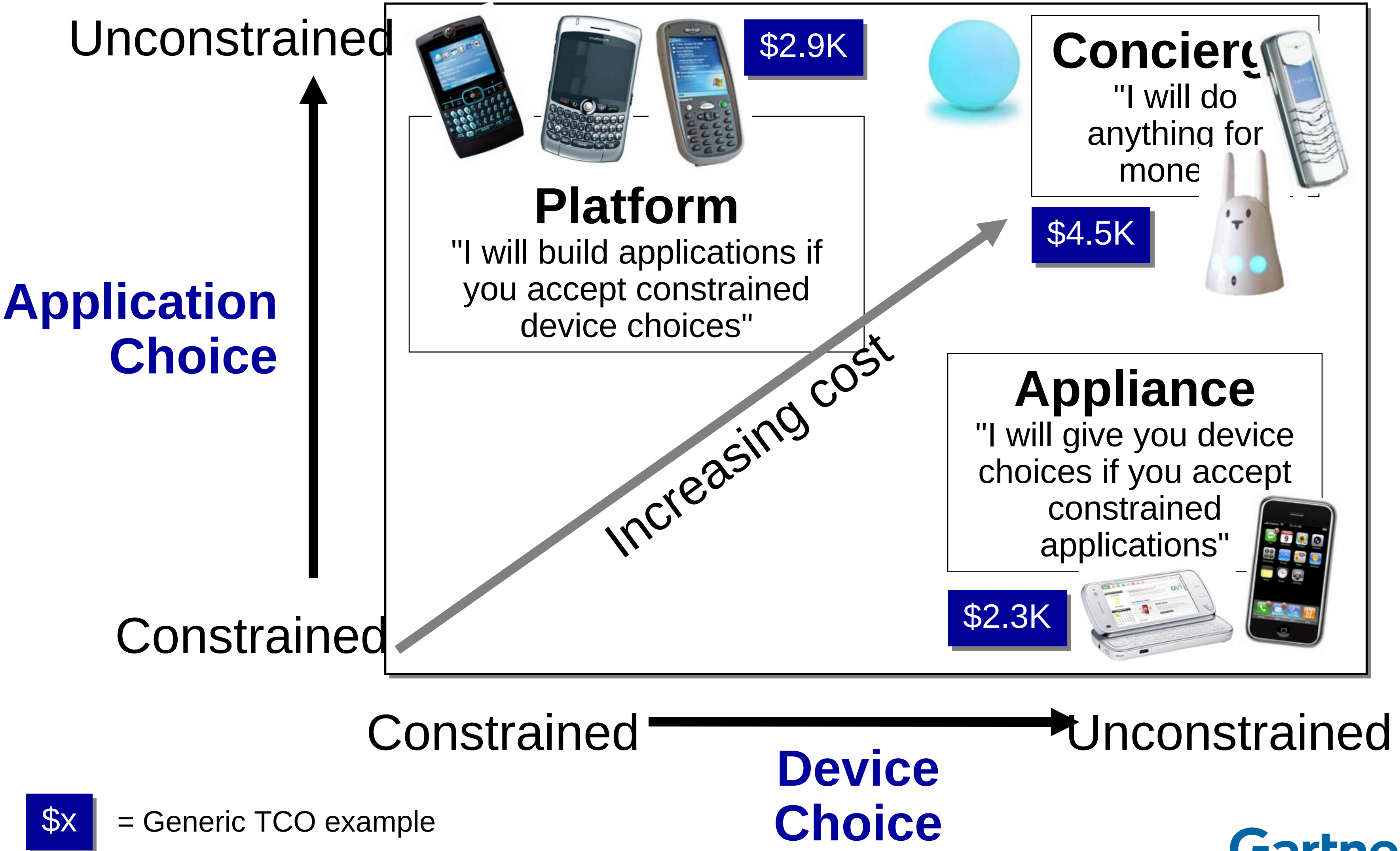
Accommodate Consumerization, and Control Costs With Managed Diversity



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Native "Appstore" Mobile Development Tools

Single-Platform SDK	Microsoft Visual Studio, Apple iPhone SDK
Cross-Platform SDK	Nokia Qt, Adobe Flash
Cross-Platform High-Level Tool	HTML/AJAX, Ruby, Appcelerator Titanium, Kony Mobile Application Platform, Rhodes RhoMobile, Mobiforms
Template-Oriented Generator	AppBreeder, MyAppCreator, SwebApps, BuildAnApp, MobileAppLoader
Application-Specific Tools	Mobile Roadie, MixMatchMusic (bands), GameSalad (games), MobileStoreMaker (retail storefronts
Content-Oriented Tools	Appanda, EyeMags, Kanchoo, Mobile Magazines
On-Device Portal	modomodo, BuzzTouch

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Decision Drivers for Mobile App Dev Tool Selection

Driver	Description
Application Life Span	If more than a year, tool viability important
Strategic or Tactical Application?	If strategic consider outsourcer, long term
Time to Market	How fast? Can we restrict functionality?
Functional Volatility	How frequently will app or content change?
User Experience	If high end, then native IDE
Non-Negotiable Requirements	Must there be Facebook or other integration?
Business Model	Is per download ok? Will vendor change rules?
Available Developer Skills	What do you have on board, what can you acquire?

Strategic Planning Assumptions

By 2015, context will be as influential to mobile consumer services and relationships as search engines are to the Web.

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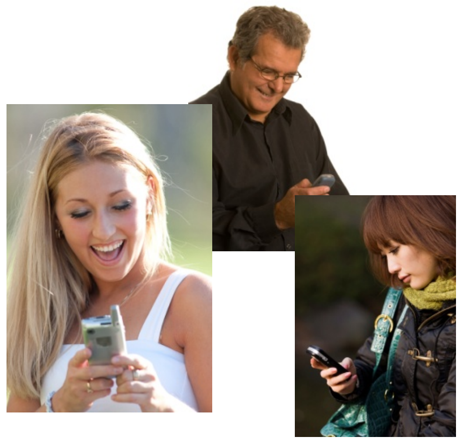
The Emergence of Contextual Mobility

Pre-context	Simple single-vendor systems and walled gardens	Open systems and federations



Device-centric

Presence
PIM

Device-centric

Location
Identity
Simple behavior and habits
Location-aware social networks
Simple proactive alerts

People-centric

Sensors, bio sensors
Adjacent devices and people
Complex anticipatory behavior
Complex federated services
Contextual social networking

2009 **2010-2012** **2015-2020**

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Recommendations

Next 3 months

- ✓ Expect that every worker IT supports will become more mobile.
- ✓ Define a strategy that can deliver both agility and innovation.
- ✓ Focus on deciding what to deliver; this will likely be more challenging than delivering it.

Next 12 months

- ✓ Place more scrutiny on UX, testing, and support
- ✓ Educate your organization of a coming sea change in app develop toward fragmentation
- ✓ Reset budget expectations for mobile app development
- ✓ Adjust skill sets or outsourcing plans accordingly

Next 24 to 36 months

- ✓ Start thinking in terms of ensemble programming – e.g., make every mobile experience pluggable to context-enriched services
- ✓ Expect rapid evolution of tactical and MCAP tools

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Related Research on Mobile Enterprise Applications

- Mobile Architectures, 2009 Through 2012: A Trend Toward Thin
  Nick Jones and William Clark, (G00166465)
- Mobile Sales Force Automation: Architecture, Support, and Technology Choices Can Cut Costs 12%
  William Clark (G00166655)
- How Many Mobile Development Tools Do You Need?
  Nick Jones and William Clark, (G00162365)
- Magic Quadrant for Mobile Enterprise Application Platforms, 2009
  William Clark and Michael King, (G00162969)
- Marketscope on Packaged Mobile Application Platforms
  William Clark and Michael King (G00164980)
- Location Technologies
  William Clark and Nick Jones (G00162627)
- *10 Smartphone Security Failures You Want to Avoid John Girard (G00166323)*
- *Upcoming updates Key Issues for Mobile Applications, Guide for Mobile Application Development and Sourcing*

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Related Research on Mobile Consumer Applications

- What the CIO Needs to Know About Mobile-App Stores and Ecosystems
  Nick Jones, (G00169623)
- The Case for and Against Device-Specific Mobile Applications
  Nick Jones, (G00160659)
- Hype Cycle for Consumer Mobile Applications, 2009
  Various authors, (G00168324)
- *Context Aware Computing: The Importance of Mobile Consumer Application Platforms*
  William Clark, Michael King (G00170815)
- *Magic Quadrant for Mobile Consumer Application Platforms*

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