

Mobility Strategies for Retail & Supply Chain Enterprises

An Overview for Development

[John Leabeater, Sr. Mobility Architect](#)
[Coca-Cola North America Group](#)

The following is intended to provide a mobility strategy developmental overview for retail and supply chain enterprises. Certain business sectors, such as banking, will need to diverge in some areas. While each topic requires elaboration and is generally focused on a 3-5 year time frame, nevertheless, this list serves to generate thought leadership for further development in mobile enterprise planning.

- **Core Business.** What is your core business? If it is not to build a larger IT organization then you must off-load internal processes that do not contribute to your profitability.
 - **Outsource.** If you can outsource mobile strategic planning and internal process management then it is recommended that you do so.
 - **Rationale.** Mobile technology evolves and spreads too quickly for most enterprises to keep pace with. Application provisioning, help desk support, and asset tracking alone can quickly take your focus off your core competencies.
 - **Goal.** Your goal is not necessarily to reduce headcount as it is to build in efficiencies through the elimination of processes that don't directly feed profits.
- **Mobility Budget:** *TCO and ROI models* will become more critical in an environment where the Americas and Europe have yet to find a solution to their debt problems. Enterprises cannot accept solutions without comparative cost analytics on comparable solutions with proven scalability.
- **Mobile Measurements:** Several suggested mechanisms.
 - **Help Desk Calls.** Thoroughly review Help Desk call statistics. One of the best measures of a good or bad solution is to measure calls by solution, time and frequency.
 - **Failure Rates.** Adopt near real-time data mashable web consoles or, at worst, monthly reports detailing repair frequencies. If you don't measure MTBF you are a poor manager.
 - **MDM.** Should provide asset counts, usage, location, ownership, life cycle, maintenance and Help Desk calls among others.
 - **TEM.** The largest services check you may write every year is to your telecom service provider. Telecom expense management tools that measure usage and eliminates waste or excess.
 - **Eliminate Surveys.** Surveys are an attempt to democratize the truth when you lack objective data.
 - **Centralize.** Bring all reports into a single console where access is profiled and shared.

- **Security:** Enterprises seem to be waiting on the first major corporate leak that makes national headlines before taking mobile device security seriously. We need a single sign-on mechanism like Active Directory that allows use of our intranet and corporate apps. AES 256 hardware encryption is currently a standard for mobile devices.
- **Asset Tracking:** At the risk of sounding like a broken record mobile computing has only exasperated the problem of asset management. We struggle to know where our corporate owned mobile assets are at and whether they are being utilized or just sitting in someone's drawer for months on end.
- **Democratization & Consumerisation of Mobility.** This will continue where there is a fit – mostly sales and field administrative roles. Retail has always led the tech sector – and mobility is no different. However, Manufacturing, Field Service, Fleet, and Warehousing operations will tend to continue to use durable or rugged form factors despite extended experimentation with consumer devices. Note:
 - **Consumerisation is** more about a change in UI expectations than the introduction of consumer devices into the enterprise.
 - **Consumerisation is** more about the enterprization of consumer devices than it is the replacement of enterprise environment standards of data consumption and collection.
- **Outsourcing of Mobile Life Cycle Services.** As mobility has grown so too has the field of supportive services – and these companies can do it more effectively and cheaply. Procure, Provision, Test, Deploy, Train, Maintain (includes Help Desk), and Retirement services are becoming commoditized.
- **Business Mobile Leadership.** Outsourcing life cycle services allows Enterprise Mobile Advisory Teams to spend their time getting newer mobile solutions in front of their business rather than 70% of their current time “keeping the lights on.” Internal Process Management time must drop to 15-20% of their time while Strategic Planning must occupy 60-70% of their work day – they will get in front of the business rather than leading from behind.
- **Mobile Application Platforms.** Hardware and OS agnostic development platforms will increasingly rely on HTML5/CSS/JavaScript/Ajax/WSDL/JSON and other Open Source tools.
 - **Casually Connected.** Mobile applications must be designed and tested around casually connected, high-latency WAN networks. SAP backends are very intolerant of high latency wait states when improperly configured.
 - **Adoption.** User application adoption is key. Field users must be integrated to the conceptualization and design phases early on. Developer's use of native code, whenever possible, assures higher adoption rates.
 - **Runtime Engines.** Reduction or elimination of the use of client runtime engines (e.g. Java on WinCE and WinMo) typically results in higher adoption rates. Use native code wherever possible.

- **Multi-functional.** Silo applications that only run on a single platform will gradually diminish.
- **Scalability.** Customization will always be needed. In-house SLAs with software vendors eliminate customization and scalability issues. MEAPs and other RADs tend to complicate customization.
- **MEAP-RAD.** Cross-platform MEAP and RAD tools are what they have always been: 70-20-10 tools. 70% of legacy and new applications *might* migrate from one platform to another at a high adoption rate, 20% require extensive customization (cost + time) to raise the possibility of being adopted, and 10% of your cross- platform requirements will, in all likelihood, never be adopted.
- **'Gamification' of Apps.** We need to ask ourselves whether we are dumbing down our applications and treating adults like children, or whether we are maintaining our employee expectations while making apps that look and work better, are easier to learn, and leave out things that waste an employees' time.
- **Communication.** A number of improvements are suggested.
 - **Free Form.** Use free-form surveys or forms wherever possible rather than rigid, content restricting communication tools that squash honesty.
 - **Frequency.** Communication tools should allow short, frequent, and verifiable content with closed-loop mechanism that insure follow-up.
 - **Eliminate Redundancy.** Show that you value other people's time by getting rid of duplicate information and building in automation.
 - **Incentivize.** Incentivize employee feed-back. You get what you are willing to pay for.
- **Compensation.** Build real-time work load distribution mechanisms that reward hard work and punish sloth.
 - **Rationale.** People are your most valuable asset – not technology. Technology can never fix a process that incentivizes bad behavior.
 - **Reduces Risk.** Even a bad solution will work when you have good people.
- **Cloud Mobility.** Application and data storage in the cloud must replace many of our current IT infrastructures for two simple reasons: cost and access. Business critical applications and data can reside in the cloud for less than 2% (\$300/Server) of the cost of hosting internally (15K/server) and guarantee 99.99% uptime, 1GB of storage, and SQL 2008 R2 with 500MB of data. The cloud allows devices to provision themselves in the field.
- **Mobile BI:** Mobilizing data is far easier than creating applications. While getting data on a web page does not resolve the problem of disconnected devices it does resolve about 80% of the immediate needs in the field.
- **Mobile Workflow:** The first phase of this is to add mobility rather than redesign a process. The second stage is movement toward data driven rather than process driven behaviors.
- **All-Day Mobile Power.** Minimal 10 hour battery life with the industry driving requirements for 12-16 continuous hours of operation. Battery expectations assume use of Bluetooth, WAN, Wi-

Fi, scanner, GPS, and other functionality. Reduction or elimination of in-vehicle charging (it simply costs too much to maintain and kills battery life).

- **Seamless Mobile Communication.** Store and forward, integrated VPN, and simple WAN/Wi-Fi (Hotspot, Home Wi-Fi) radio management as a requirement for all application development and/or mobile hardware going forward. Failure in this area will cripple field mobile solutions and significantly add to costs – all OEMs and AppDev services ought to prove their effectiveness in this area before they are even considered as a mobile solution.
- **Mobile Carrier Management.** The *largest* services check we write every year goes to our WAN carriers.
 - **TEM.** We absolutely must manage AT&T, Verizon, and other WAN carriers more closely as I strongly believe these costs are out of control. One model is to adopt a 3rd party service that eliminates inaccurate provider billing, reduces service dependence, etc. and charges us 20% of whatever they recover from the carrier under a 2 year contract.
 - **Carrier Agnostic.** Require OEMs to provide carrier agnostic WAN radio architectures.
 - **Subsidize.** If you lock yourself into GSM or CDMA radios in the US then tell the carrier to subsidize the cost of that hardware. We use RIM with our merchandisers because the hardware is free.
 - **Data + Voice.** Consecutive use of both voice and data should be a requirement for carriers and hardware OEMs.
- **BYOD:** Adoption of BYOD in the enterprise will be restricted largely to services such as contacts, calendar, and email.
 - **Legacy Application Porting.** Enterprises have 25 years and more of investment in Intel solutions. Porting these solutions to a device agnostic mobile platform is costly, time consuming, and iterates 12-18 months.
 - **Adoption is Low.** In 2010 Intel's VP and CIO, Diane Bryant, introduced BYOD. Out of 97,000 employees worldwide they integrated 13,000 personal phones, 1,500 tablets, 80 Macs, and 0 (zero) PCs.
 - **Limited.** We use BYOD in a limited sense. Bring in your personal iPhone, iPad, and Android or WP7 device and connect through Active Directory for email, calendar, and contacts. We provide minimal support and users experience slightly more flexible work hours and are more frequently informed. For us it works and costs very little to employ.
 - **Risk.** Several.
 - **Security.** However, regardless of your annual SOX/HIPPA/etc. compliance agreements, it will only take one very high profile lawsuit to call this model into question. We all know what happens when bank account information on a company laptop goes missing. Further, we cannot allow employees to bring in their own personal computers due to a loss of network control, software

licensing complexities, human resource issues, and other very ugly consequences.

- **Cost.** If you developed a custom application to run on a Blackberry in 2010 what are you going to do when RIM moves to QNX in January 2013?
- **Interim Enterprise Mobile OS.** Currently iOS and Android are *interim* stop-gap measures through 2014. Anticipate Microsoft coming from behind again as they did in 2002-2003. I have written a separate white paper that delineates the advantages and disadvantages of both platforms (An Assessment of Future Mobile OS States).
- **Microsoft Dominance.** Like a herd of elephants MS turns slowly. Once they turn then efficiencies and momentum will clear the field. Motorola and Intermec have made the commitment (at the executive level of both companies) to support Windows Mobile for the foreseeable future. Additionally, Motorola specifically, is supporting both Android and Windows Mobile. Commitment with Motorola to support Windows Mobile was made at the Steve Ballmer (CEO) level. Regarding Microsoft's direction in the Windows Mobile space, there are several key commitments you can base your direction from:
 - **Commitment.** Microsoft is 100% committed to Windows Mobile going forward. The product has been rebranded going forward to be called Windows Embedded Compact.
 - **Legacy Support.** From a current support perspective, Microsoft Windows Mobile 6.5 Professional was generally released in November of 2009. It has an official 10 year support life cycle from Microsoft.
 - **Iterative Builds.** From a next minor version perspective, Microsoft is releasing iterative builds to Windows Mobile (now called Windows Embedded Compact) with the most current iterative build being Windows Embedded Compact 7, Update 3 – which will be released to general availability in Q4 of Calendar Year 2012. Microsoft is committed to delivering these iterative builds going forward.
 - **Windows 8 UI.** From a next major version perspective, Microsoft will be basing the next major version of Windows Mobile (now called Windows Embedded Compact) on Windows 8 technology. It's key to note that Windows 8 will support ARM and X86 architectures in general – though there are functional caveats.
 - **Roadmap.** The support life cycle for current Windows Mobile 6.5 devices will last until 2019. Microsoft will continue to build and release minor releases on the current Windows Mobile (now called Windows Embedded Compact) until the next major version which will be based on Windows 8. Now, that is a very firm commitment to a roadmap support model that you will not see out of Apple or Android.
 - With regard to questions about Win8 traditional desktop support for ARM that is another question. Whether the focus will be on Metro only, or a combination of both, or a subset of desktop on ARM waits to be seen. But one thing is certain: whatever keeps Microsoft's coffers full will be supported.
- **Mobile Social Networking.** Leveraging the power of SMS, Twitter, Facebook, Skype and other social mechanisms can be used to drive B2B, B2M, B2C, and M2M collaboration. Effectively applied these same types of tools can also be the means to drive enterprise marketing, sales and supply chain efficiencies. Geosocial networking is a means to collaborate regardless of time, location, environment, and language.

- **Context Aware Services.** Real-time traffic, live video feeds, planned routing, and context aware delegation of security access are all examples of better ways to manufacture, sell, and delivery products and services. Enterprises are interested in how to efficiently and effectively implement such services into their business.
- **Vehicle Use Management.**
 - **Eliminate Distracted Driving.** The risk of not addressing distracted driving, both in policy and solutions, is extremely high.
 - **Hands-Free.** Where possible the use of hands-free technology should be adopted.
 - **Geo-location.** Customer and product information should be available based on geocodes.
 - **Charging.** Ask any fleet manager and he will tell you that he does not want to add anything else to his dash or floorboards. Get rid of in-vehicle charging wherever practicable by changing process and employee behavior.