

Mobile Device Management (MDM) – Reducing OPEX  
and Improving Customer Service



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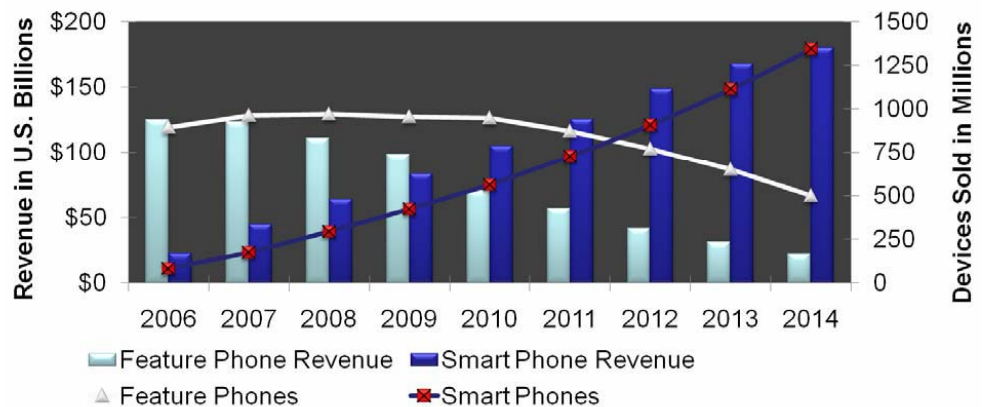
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## Mobile Device Management (MDM) – Reducing OPEX and Improving Customer Service

*The cost of supporting smart phones is growing faster than operator revenue. Mobile Device Management (MDM) offers service providers a solution, by providing a cost effective way to support these new devices and the advanced services they deliver. MDM technology, available today, has the potential to save operators billions of dollars annually.*

As wireless communication service providers (CSPs) rush to bring more and varied services to market quickly, a unique problem is presenting itself. The intelligent devices or smart phones that customers are choosing are becoming more and more sophisticated and are being used for delivery of multiple services (voice, data, and video). That results in more calls to customer support for configuration and operational issues. Frost & Sullivan estimates that, of the nearly 1.3 billion mobile devices expected to ship worldwide this year, 23% will be smart phones. As shown in Figure 1, that figure jumps to 30% in 2009 and 37% in 2010 with penetration increasing to 73% by 2014.

**Figure 1: Global Mobile Device Units and Revenue**



Source: *Stratecast/Frost & Sullivan*

### What is MDM...

Mobile Device Management (MDM) is the ability to connect to and manage a mobile device over-the-air. MDM allows a CSP to view the current configuration of features and

applications while also enabling the download and update of applications and configuration commands. The Open Mobile Alliance (OMA) has defined both the handset client and the over-the-air communication protocol for MDM. Known as OMA-DM, the latest version of the standard was released in 2006 to enable over-the-air management of mobile devices using a common protocol. Specifically, OMA-DM supports device provisioning, configuration, firmware updates, diagnostics, security, and lifecycle application management. OMA-DM is currently supported by the majority of handset manufacturers and mobile device operating systems, and permits operators to deploy best-in-class MDM solutions without vendor lock-in. Almost all high-end phones now ship with an OMA-DM client, and overall penetration is expected to grow from just less than 50% in 2009 to nearly 100% of all mobile devices shipped by 2014.

### **... Why Does it Matter Now?**

Global wireless customer support costs are skyrocketing. The costs of delivering services combined with the sales, general, and administrative costs – which include customer support, salaries, and administrative support for customer support personnel – are overwhelming increases in service revenues.

In North America, the portion of opex attributable to customer support increased an average of 11% over the past year. While the opex increases for North American service providers have not yet exceeded revenue gains, the time will come when the number of more expensive data plans being sold plateaus and the associated service revenue increases slow down. That is already occurring in Europe where growth is slowing and opex increases are beginning to exceed revenue gains. In APAC, there are many new customers being added and that continues to grow service revenues, however support costs are increasing even faster as there is a higher penetration of smart phones in those countries.

To ensure customer satisfaction while still managing costs, CSPs have outlined a number of key business arguments for MDM:

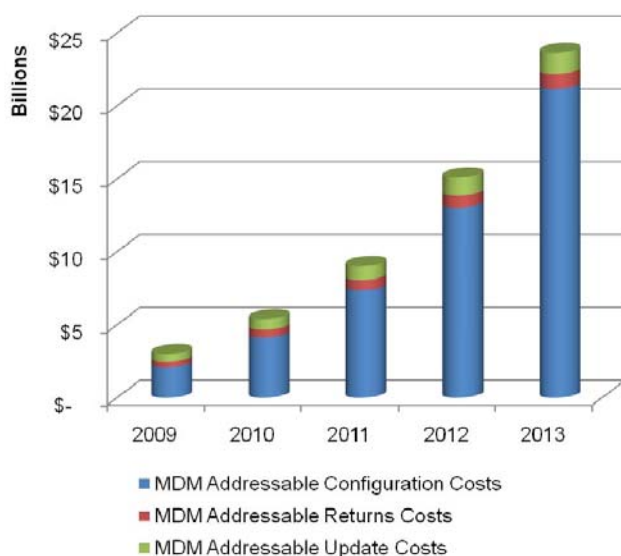
- Rapid penetration of intelligent devices
- Increased complexity for users
- Increased call volume and complexity for support personnel
- Customers want self-service
- Device updates become more critical
- Operations and support costs increasing faster than revenue

Both the number of support calls and the amount of time spent on each call is increasing. Likewise, the amount of training required for customer support representatives (CSRs) increases because each device is more complex, there are more applications and features enabled by each one, and each device has unique configuration requirements.

## MDM Reduces Opex

InnoPath and Stratecast jointly developed a model that uses over 25 different parameters to understand the operational savings that can be achieved using MDM to reduce the time spent on configuration support calls, reduce the number of devices returned due to configuration problems, and reduce the time and inconvenience associated with delivering software or firmware updates. Data was collected from a variety of sources to arrive at conservative assumptions for the number of smart phones, support costs, costs of returns, logistics costs, etc. Based on the model, global CSPs could save nearly \$5 billion in 2010, as shown in Figure 2. MDM savings are entirely the result of small time and support cost savings in the areas of configuration support costs, device returns, and device updates. Reducing the amount of time spent on each call or each store visit quickly adds up. Saving even \$1 per subscriber per year equals millions in reduced operational expenses.

**Figure 2: Global MDM Savings**



Source: InnoPath/Stratecast

## Customer care costs will continue to rise

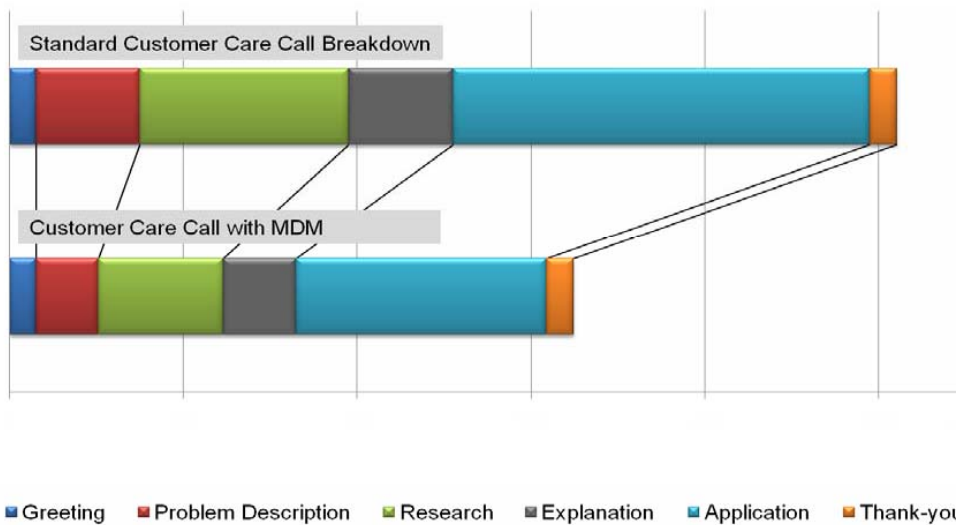
Even as service providers implement on-line and Interactive Voice Response (IVR) capabilities to enable more self-service, the number and complexity of support calls will increase. There will be more calls about how to use intelligent devices, what applications are available, how the applications work, how they integrate with other applications (e.g. “How do I use the navigation feature?”). And it is those types of calls that last longer and cost more to address. In this environment, MDM becomes critical to reducing customer support costs. Based on the model, customer care costs are reduced by 12% worldwide in 2009 and as smart phone penetration increases so does opex savings. The most promising

support mechanisms that can contribute to cost savings – self-care and IVR – also benefit from the implementation of MDM. While the cost savings from implementing customer self-care are not included in the model, using MDM to support customer self-care can reduce the number of support calls even further. If a customer can manage their own updates online or can see the configuration of their own device and be given the option to fix it, they will – and that saves a call and could save a customer.

### Reducing Configuration Support Costs

The inability of service providers to quickly and accurately diagnose and fix a configuration problem is becoming more acute. Customers quickly lose faith that the support personnel have the ability to solve a problem and may just give up, which reduces the attraction of new revenue generating services. Long support calls frustrate both the customer and the CSR and that can lead to escalation to even more expensive support personnel. Figure 3 shows a typical customer support call and the time that could be saved if the CSR was able to directly access the device using MDM.

**Figure 3: Customer Care Call Timing**



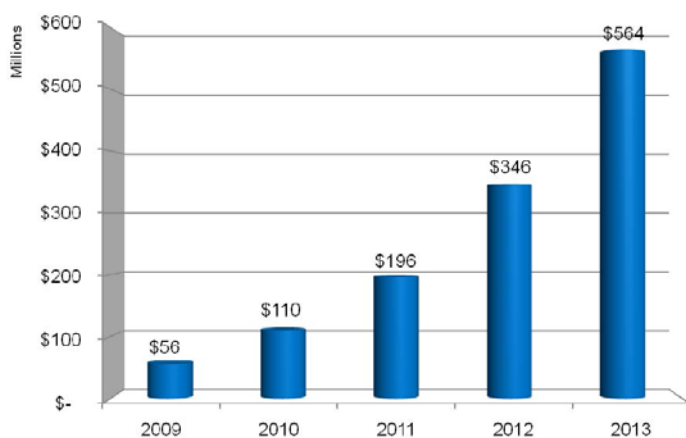
Source: InnoPath

The availability of an over-the-air, MDM-view of the caller’s device reduces the time spent researching the problem and the specific handset and greatly reduces the amount of time required to apply a fix. Using MDM, the support representative can see the configuration of the device and installed applications, compare it to what should be configured, identify any problems, send the correct commands or software to the device, and test it to make sure the problem was solved – all without having to look up the menus and commands specific to that device or talking the user through the procedure. Beyond the time savings

there is less CSR training required for each new device and the customer is more satisfied.

In addition to the global figures, a single service provider is modeled, and specific results are shown in Figures 4 - 6. That service provider could be located anywhere in the world and has 50 million wireless subscribers. A very conservative estimate of \$1 per minute for customer support and \$2 per minute for technical support that results from the escalation of a configuration call was used. Numerous service providers have indicated that these costs are low for their operations, but the point is that when there are millions of customers involved, small time savings add up to large dollar savings. Time savings like those shown above, translate into significant cost savings. The cost savings shown in Figure 4 are calculated as 3 minutes per call based on 16 million calls per year that could be addressed using MDM. That amounts to nearly \$50 million dollars in the first year alone. Over time the number of those types of calls increases with smart phone penetration and the time required to solve customer problems without MDM increases as well.

**Figure 4: Configuration Savings**



Source: InnoPath/Stratecast

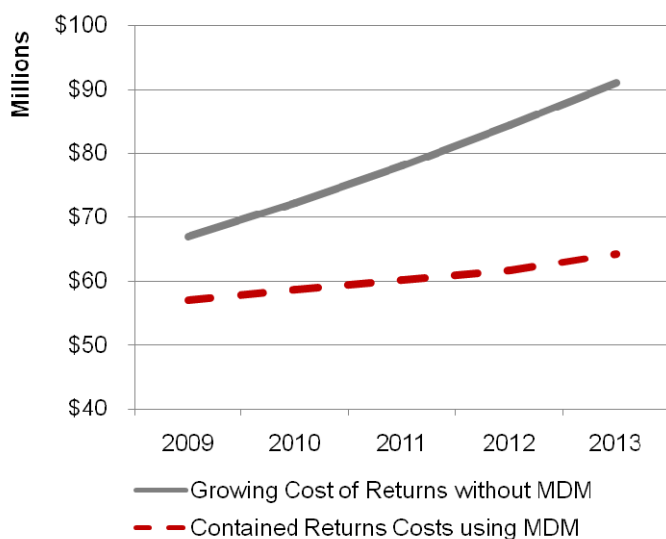
Configuration savings are the most significant portion of the operational savings being modeled because the configuration calls are taking up so much of the CSR's time. The model assumes that wireless customers call in for support roughly twice a year and that 30% of those calls are configuration related. Further, of those configuration calls 50% could be accelerated if the representative had MDM access to customer's handset.

### **Reducing Device Returns**

Device returns are more common in North America than in Europe, but once a certain level of frustration is reached the path of least resistance is to have the customer return the device either by mail or to the store. The model assumes that 5% of devices are returned globally however, that figure is nearly doubled in North America. Actual manufacturer defects account for less than 1% of returns on average – others are because the color is

wrong or the device is too heavy – but many are because “it doesn’t work right”. The \$85 cost estimate used for each return is based on multiple calls to customer care, plus shipping and returns processing paid by the CSP. Assuming 30% of returns are for configuration issues, that equates to \$10 million that could be saved because the CSR or the in-store representative can fix the device configuration rather than telling the customer to return the handset. Figure 5 shows the savings that can be achieved by reducing the number of devices returned due to configuration problems.

**Figure 5: Returned Device Savings**



Source: InnoPath/Stratecast

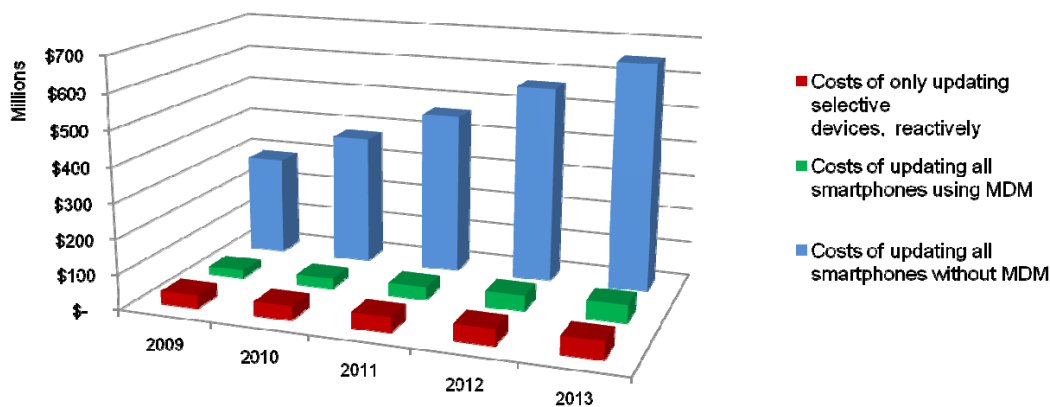
Device complexity and an increasing number of applications compound the problem. It has been reported that users will try a new feature 2-3 times before abandoning it and the CSP loses potential revenue. Revenue-generating applications can also be lost in the complexity of the device and its configuration. A recent Olista survey revealed that over 70% of users who sign up for content bundles failed to consume any mobile content, indicating that price was not a factor for these users and the barriers to usage are more likely to be associated with ease-of-use or technical problems.

**Update Savings**

Most service providers do not currently update smart phones unless there is a problem. The reason is that there are many unique devices and each requires numerous updates. That makes proactively updating all smart phones cost prohibitive using current methods. However, as smart phone penetration increases, CSPs will need to address the update issue because a lack of current updates is creating more customer calls and resulting in more problems. With an increasing percentage of phones that require updates, CSPs need a

workable solution. Based on current estimates for smart phone penetration and assuming one update per device per year, 11.5 million phones require updating in the 50 million subscriber example. Figure 6 shows the costs of updating smart phones “as-needed” using current methods, updating all smart phones using current methods, and updating all smart phones using MDM.

**Figure 6: Update Savings**



Source: InnoPath/Stratecast

At \$25 per update, that adds up to \$287 million to update every smart phone using current procedures. With MDM, service providers can update phones as many or as few times as required for roughly \$2 each. Updates from the device manufacturer are downloaded to the MDM server and the customer can initiate the update themselves, be reminded that an update is available and asked whether they want to download it now or be reminded later – just like a PC. And just like a PC the process can be automated and cost effective. Even if the customer has to call for support, the CSR can download the updates quickly and no visit to the retail store is needed. An additional benefit of updating all smart phones regularly is that when a customer does call, the CSR knows that the current version of software is in use and does not have to spend extra time to determine the version. The net result then is that, with MDM, service providers can deliver updates at a minimal cost while eliminating numerous trouble calls and store visits. This small step can greatly improve the customer experience and the effectiveness of the support team

### MDM Makes Sense

Over-the-air mobile device management is quickly becoming a necessary rather than nice-to-have OSS function. The manufacturers are including the capabilities in the devices and CSPs can now take advantage of it. CSPs are spending a lot of time, effort, and resources to deliver new products to market quickly and cost effectively, but success will ultimately be determined by how well those products work when customers try to use them.

Configuration issues will continue to increase support requirements and the cost to deliver good customer support. CSRs need tools that help them through the complexity of the devices and give them the data necessary to quickly and accurately solve the customer's problem. Small gains and small savings – 1 minute of CSR time, \$1 per subscriber – can add up to tremendous operational savings and greatly improve the quality of the support provided to customers. Over-the-air MDM delivers the multiple benefits of lowering operating costs while delivering a better customer experience.

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InnoPath Software is the global leader in Mobile Device Management, a technology that enables wireless operators to better and more cost effectively manage and deliver revenue-generating services for consumers and enterprises. InnoPath's standards-based approach has proven successful at the largest wireless operators in the world, including AT&T, China Unicom, KDDI and Verizon Wireless. The InnoPath client has been adopted by leading handset manufacturers including Nokia, Samsung and LG. InnoPath was recently recognized by AlwaysOn as an AO Global 250 Winner. Headquartered in Sunnyvale, California, InnoPath is privately held with offices around the world. For more information, visit [www.innopath.com](http://www.innopath.com).

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