I

Executive Summary

Introduction to Mobile Resource Management

The Continuing Evolution of MRM

There are various definitions of "Mobile Resource Management" circulating among North American market participants. Initially, the term was used exclusively to describe in-vehicle truck tracking applications; however, Frost & Sullivan defines it more broadly. For the purposes of Frost & Sullivan's current analysis effort, Mobile Resource Management (MRM) encompasses handset-based solutions that use wireless and location technologies to locate, track and manage mobile workers, mobile tasks, and mobile assets.This specific study focuses on MRM solutions that address the first two components addressed in the definition, i.e., mobile workers and their in-field tasks.

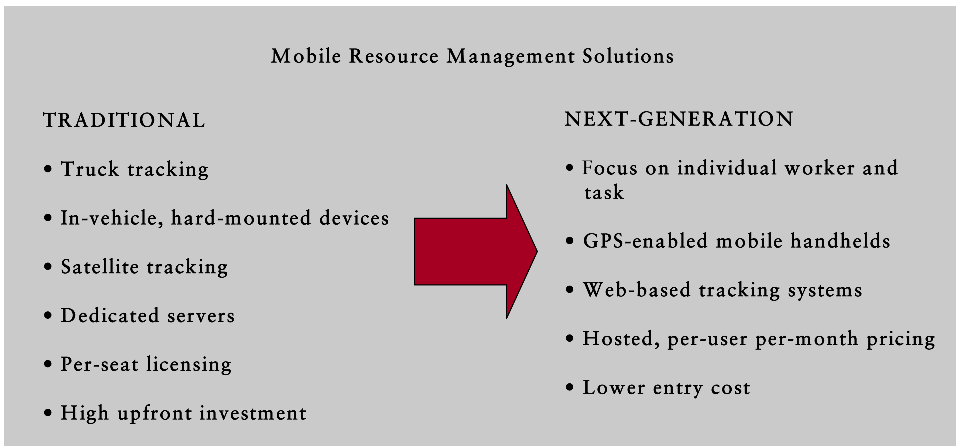
When MRM was solely a fleet management play, local and long-haul trucks were tracked and monitored using expensive in-vehicle systems, satellite tracking, and dedicated servers. Today's next-generation solutions are more affordable and available due to GPS-equipped mobile phones, web-based tracking systems, monthly per-user pricing, and flat-rate wireless data plans. Technology advancements and lower price points have combined to open up the MRM solution category to all business sizes and to a wider selection of vertical industries.

The majority of handset-based MRM applications embrace the software-as-a-service (SaaS) model—i.e., customers use these applications on a hosted basis, rather than purchasing costly hardware and software packages. SaaS monthly per-user/unit subscriptions provide a lower entry price point and help business customers mitigate risk with respect to IT expenditures. Especially with the credit-tightening impact of today's economy, many enterprises are not well-positioned to make capital expenditures. However, with SaaS, premium mobile applications can be hosted and paid for out of a business' operating budget.

Chart 1.1 summarizes the traditional vs. next-generation design for the Mobile Resource Management market in North America during 2009.

Chart 1.1

Mobile Resource Management Market: Traditional vs. Next-Generation Design (North America), 2009



Source: Frost & Sullivan

MRM solutions are capability-rich, flexible, and can integrate with a variety of back-office systems (dispatch, payroll, CRM, etc.) to mobilize company-specific data and processes. These MRM services can be used to enhance and automate scheduling and dispatch, track employee location, and capture field data. The objective is to reduce operating costs, increase productivity, improve customer satisfaction, and even begin to streamline the customer's supply chain.

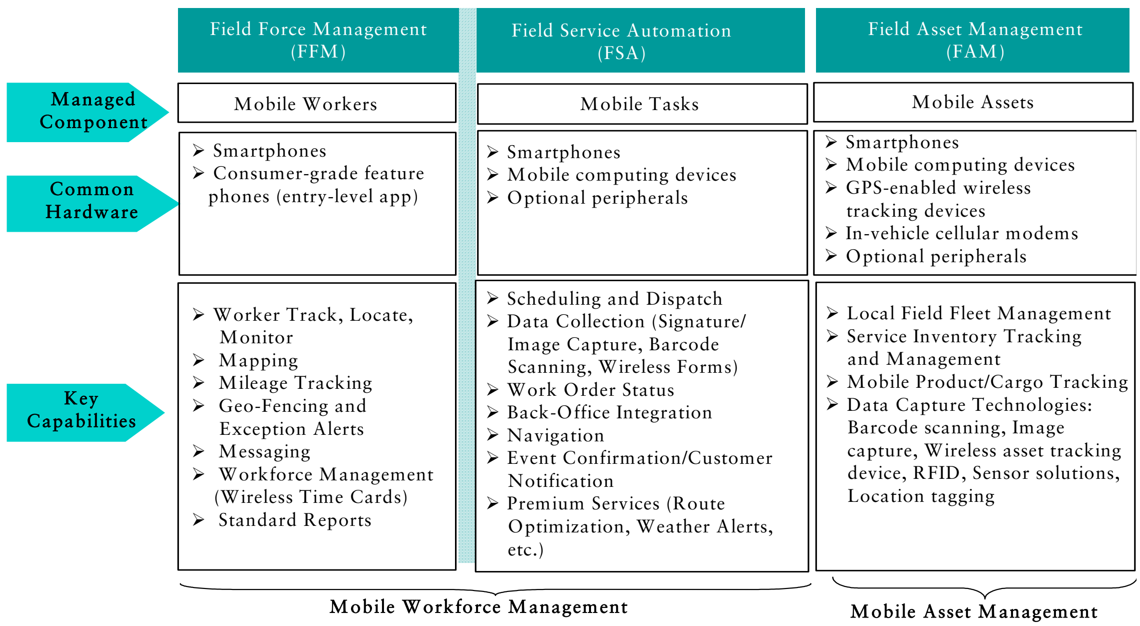
Frost & Sullivan segments MRM solutions into three major categories:

- Field Force Management (FFM)—which is focused on the mobile worker.
- Field Service Automation (FSA)—which is focused on the mobile work.
- Field Asset Management (FAM)—which is focused on the mobile asset.

Chart 1.2 displays the major solution categories for the Mobile Resource Management market in North America for the 2009 time period.

CHART 1.2

Mobile Resource Management Market: Major Solution Categories (North America), 2009



Source: Frost & Sullivan

Each category utilizes a unique blend of hardware and provides a distinct assortment of features and capabilities. A range of price points and packages are available within each MRM category. This study will focus upon handset-based Field Force Management (FFM) and Field Service Automation (FSA) solutions—two very interrelated pieces of the MRM puzzle. In fact, as will be discussed in the Applications Trends section, these two sets of capabilities are blending to such a degree that it is becoming difficult to break them out into standalone products. Together or apart, they are commonly labeled as "mobile workforce management" solutions.

A separate Frost & Sullivan study will examine the Field Asset Management market.

2008 Review

The handset-based MRM market remained under-penetrated during 2008, with an estimated 460,000 subscribers in the U.S. marketplace. This translated into approximately $86 million in application revenues across both wireless carrier and non-carrier channels.

The U.S. MRM sector was firmly ensconced in the middle of a drawn-out cycle of market evolution. During 2008, handset-based solutions were actively marketed by three of the four major wireless carriers—AT&T, Sprint, and Verizon Wireless—providing increasing legitimacy and sales traction for the category. Major drivers behind MRM adoption during 2008 could be prioritized as follows:

- High, hard-dollar ROI
- More affordable hardware, software, and network services
- Wireless carrier focus on long-term value creation
- Major ISVs seeing value in mobilizing traditional business software
- Opportunity for wireless carriers to recoup FCC E911 investments

During 2008, five key MRM purchase inhibitors were:

- Limited customer awareness
- Wireless carriers' uneven ability to sell MRM solutions
- Customer worries about back-office integration
- Limited availability of GPS-enabled GSM devices
- High TCO

A few key MRM-specific trends emerged during 2008:

Concerns Regarding Employee Privacy Continued to Diminish

Vendors and employers recognized that negative employee response alone could jeopardize an implementation. To neutralize these concerns, the following benefits were strongly promoted to workers: employee security, the ability to turn off tracking during breaks, and allowing employees to use the navigation capability as a personal benefit. Increased customer satisfaction was also emphasized—based on quicker dispatch, a more accurate estimated time of arrival, having the correct equipment on-hand to handle a service visit, etc. In fact, the MRM conversation increasingly moved from "Big Brother" to "Customer First."

MRM Capabilities and User Experience Became More Compelling

Device manufacturers increased the user-friendliness of their devices with improvements in screen size, resolution, and battery power. 3G networks increased the power and capabilities of the applications themselves.

On-Deck MRM Packaging and Pricing Standardized

The carriers' MRM solutions became more standardized and were packaged into tiered offer sets. A good-better-best approach usually resulted in an entry-level offer that provided basic tracking, mapping and geofencing for approximately $10/user/month (a pure Field Force Management (FFM) offer). The mid-tier offer was typically priced at approximately $15/user/month, providing a significant upgrade in capabilities and combining FFM and Field Service Automation (FSA) features. The top-tier $20 package would then add audible navigation and richer integration and dispatch. Additional options could be purchased for a fee—for example, sophisticated route optimization software was typically available at an additional $25 per user per month.

Key Findings for 2009 and Beyond

The North American MRM market continues to make steady progress—although the Canadian enterprise sector significantly lags behind its U.S. counterpart in terms of carrier participation, available solutions, and customer interest. Frost & Sullivan projects that total U.S. market revenues for handset-based MRM applications will increase to approximately $973 million by 2014.

MRM workforce management solutions offer multiple benefits to today's business subscriber, including a straightforward, hard-dollar ROI, increased productivity in the field, a means of establishing competitive advantage, and a way to mobilize and leverage traditional business software. Wireless carriers—the primary sales channel for MRM application developers – can also reap significant benefits from including MRM field service solutions in their business services portfolios. These applications can reduce subscriber churn, increase data ARPU, and win the loyalty of high-value subscribers. They can also provide a major means for carriers to recoup their E911 infrastructure investments.

Business customers that decide to deploy an MRM solution tend to take one of three different approaches, correlating closely with the number of mobile workers they expect to outfit with the service:

- Smaller companies gravitate to standalone point solutions developed by MRM-only vendors. These products typically focus on integrating with only one or two back-office systems—usually payroll. Of course, larger businesses may also start off with an MRM point solution; however, the more sizeable companies are expected to encounter scale and management problems and, as a result, eventually migrate to the next option, which is:
- A scalable and flexible mobile application platform that can incorporate multiple types of solutions, integrate into a variety of backend corporate systems, and offer more sophisticated privacy and security mechanisms.
- Very large enterprises, on the other hand, will tend to develop their own customized solutions in-house.

Of course, challenges continue to play out in this sector. Some of the more significant barriers to MRM adoption are:

1. Economic concerns may negatively impact subscriptions.

The current economic climate is still exerting a very strong dampening effect on company spending—and this negative influence extends directly into the IT department's wireless strategies and budgets. Today's businesses remain in a clear wait-and-see mode. Even though consumer confidence numbers are creeping back onto the positive side of the chart, unemployment figures continue to be dreadful and overall conditions are expected to remain volatile for some time. New purchases are being strongly vetted, and any new deployments are being implemented slowly. To many customers, deploying MRM requires a leap of faith in a frightening economic environment. While MRM vendors are fighting for new business, they are also working fiercely to keep the customers they have.

2. High upfront investment can be barrier to entry.

Price sensitivity remains high with MRM prospects. The major cost components in a larger MRM deployment are: the MRM software, wireless carrier data plan, mobile devices, and integration and/or customization work (if necessary). The MRM application and wireless data package are typically billed on a monthly basis. However, any upgrade to—or increase in—location-enabled mobile devices can present a sizeable one-time expense, as can professional customization and integration services. This upfront investment acts as a formidable barrier for many prospects. Frost & Sullivan's First Quarter 2009 survey of North American IT decision-makers revealed that the initial implementation expense of MRM continues to worry a sizeable segment of prospective customers.

3. Mobile handsets continue to require improvements.

Moving the MRM experience to the mobile handset has opened up the market significantly; however, the device experience is still not ideal. Form factor issues can be frustrating as vendors continue to work on screen size, resolution, keyboard maneuverability, and overall size and weight. Battery life and processing power continue to be critical issues. Developers are looking for a broader selection of ruggedized phones (in addition to the higher-end rugged mobile computing devices from Intermec and Motorola). Also, phones that offer both GPS and Push-to-Talk capabilities together remain difficult to find. Even the GPS quality itself can be very poor on some sets—treated as more of an afterthought than a key function. Lastly, frequently changing mobile phone platforms are a drain on MRM developer resources, who can spend more time than they'd like simply adjusting old software for new phone versions—and thereby shortchanging efforts to create new and exciting capabilities and features.

4. Security of corporate information remains a concern.

With a variety of corporate and customer data being exchanged over-the-air throughout the day between the mobile worker's handset and company back-end systems, a significant percentage of prospective MRM customers point to data security concerns as a key adoption barrier. Interestingly, the security concern is most pronounced with larger enterprises that are convinced of the MRM value proposition, have plans to deploy the solution, but just are not ready to implement.

These challenges are typical in the early stages of a product's life cycle and are certainly not insurmountable. Progress continues to be made on all fronts, although adoption barriers have been temporarily exacerbated by the current economic meltdown.

This sector is approaching a stage of feature parity, with solutions coalescing around a common core of capabilities. The emphasis this year shifts to creating and marketing vertical-specific MRM solutions. Honing and promoting support services and partnerships—around integration, customization, and ongoing technical support—is also receiving increased attention.

The key market participants profiled in Section Five of this report present a number of different approaches, capabilities, and solution packaging. Wireless carriers continue to learn how to effectively market MRM, while application developers position themselves for long-term survival (or acquisition).

The deployment of MRM workforce management solutions is becoming more of a long-term strategic and competitive decision, rather than one that is based solely on the ROI of per-user pricing or initial cost savings. As more businesses reach this level of awareness, the mathematics of potential MRM users (millions of mobile workers yet to be armed) promises substantial rewards to the stakeholders that survive.