



The Analytica Mobile Computing Platform



## Why do I need a Mobile Platform?

*The number of "small form" computing devices is expected to grow from about 75 million units in 2001 to nearly 450 million units in 2007, thus outnumbering desktop and notebook PCs. - Source: ResearchPortal.com*

In most large organizations with a mobile, distributed workforce – either a large sales team, or a fully staffed hospital- the workflow, as practiced today, requires employees to enter all process and activity data on either a desktop, or on shared terminals. Notes are recorded by hand, leaving room for loss of information, which may prove to be significant. Delayed or slow transmission of mission critical information through conventional methods could be an often-overlooked factor that hinders efficiency, resulting in hidden costs and missed opportunities. In today's highly competitive world, every large enterprise, in order to be successful in supporting and maintaining its operation and applications has to constantly be on the lookout for ways to improve its services and processes. An Enterprise Mobile Strategy offers a way out.

Incorporating mobile devices into your existing IT infrastructure to disseminate and assimilate corporate information can afford tangible

benefits and rapid returns on investment. It can reduce operating costs, slash inventory, and allows your entire organization to work as a team structure. For instance, a mobile platform for field sales would allow information to flow into your enterprise system as soon as a field agent receives the order, than if it was entered manually at the end of the day. By allowing information access from anywhere anytime a mobile platform multiplies the efficiency of your mobile workforce and allows for much faster responses to your end customers. In the end, all this translates to a significant competitive advantage for you over your less agile competitors.

The applications of a mobile platform can be varied – they range from the better-known workforce and mCRM applications, to even routine activities like filling out patient records in a modern hospital. Mobile devices can be far more accurate than writing and recording on paper. Wherever a need is felt to equip a workforce member with a laptop or cell-phone, a mobile device such as a PDA, connected to a Mobile Platform can be an affordable alternative.

## Why Moebius?

Analytica is the first company to introduce the concept of *Enterprise Mobile Computing (EMC)*, with the Moebius platform. The Analytica Moebius EMC platform has support for *data aggregation and hierarchical control of information* – far in advance of any other mobile computing platforms in the world today.

Moebius allows empowerment of individuals in an organization by allowing data from mobile users to flow naturally to their managers, as shown in the schematic. This facilitates better planning, management, and optimization at each level. Individuals can make decisions based upon actual, real-time field data, leading to higher efficiency across the entire organization. In addition to having a very flexible "n-tier" deployment architecture, Moebius is designed to be very robust, and to work in an enterprise environment with a minimum of maintenance. Moebius also conforms to industry standards like J2ME compatibility, and advanced NIST approved ASE encryption algorithm for data security across the entire enterprise.



## The Mobile Computing Platform Architecture

### Enterprise Applications

Enterprise Administration  
System Report Generation

### Management Applications

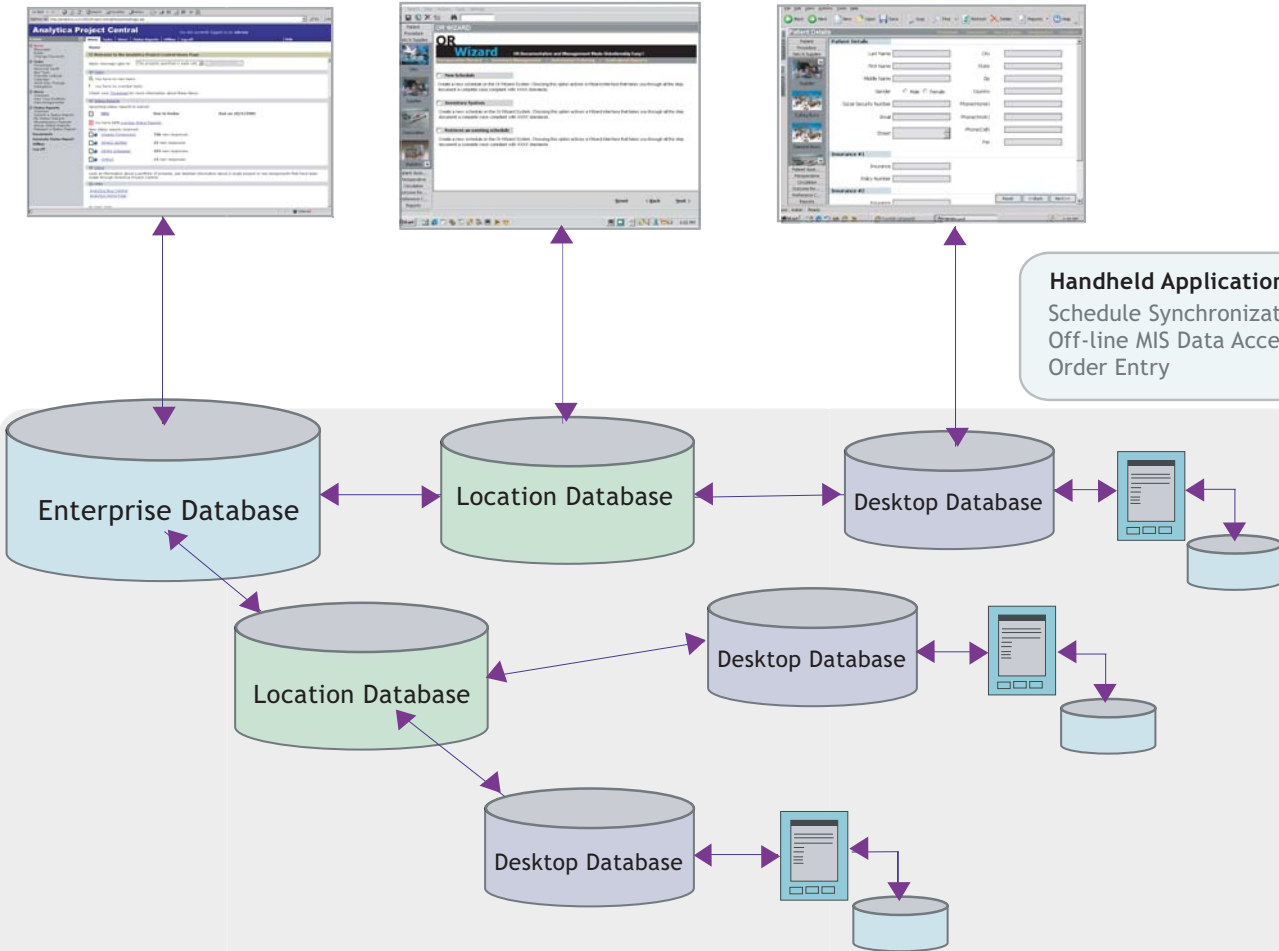
Group Administration and Control  
Sales Consolidation Reports  
Contact and Customer Relationship Management  
Group Scheduling

### Desktop Applications

Schedule Synchronization  
Inventory and MIS Access  
Order Processing  
Sales Data Consolidation  
Goal Tracking and Reports

### Handheld Applications

Schedule Synchronization  
Off-line MIS Data Access  
Order Entry



## Why Analytica?

Analytica has successfully designed and deployed mobile solutions for a number of customers in the U.S.A. You can leverage Analytica's expertise in mobile workflow architecture and application design, to plan and roll out an enterprise-wide application for your organization. This includes studying your core requirements, isolating the activities that can benefit most from a move to a mobile platform, and implementing a prototype that can be used by your organization to show the value of real-time control over your mobile workforce.

Analytica can develop a working prototype for your field operatives, your managers, and even modules for your enterprise data access in as little as 30 days. Find out about our *Velocity* program, and how our team of experienced mobile application development professionals can work with you to mobile-enable your organization.

## A Mobile Workflow Case Study

Analytica has designed and implemented a number of mobile workflow solutions for sales force automation, eCRM, and medical/healthcare documentation automation. This case has been selected to show a more non-traditional use of mobile computing.

### The Customer

A large hospital group based in Dallas, U.S.A., with distributed operations all over the state of Texas.

### The Challenge

Operations in a hospital are scheduled centrally. It was required to create an application that would run on an anesthesiologist's handheld device, and interface with the central system to get details of scheduled operations and the associated patient information. It would then allow them to document an operation in progress, specifying all the details of the procedures performed. When an operation is completed, the handheld device could be synchronized once again with the central server, in order to store all the information pertaining to the operation for interface with the hospital documentation and billing systems.

## The Solution

A holistic approach was adopted in implementing the project, and the entire data transport layer from the central server to the handheld devices, was implemented using the Analytica Mobile Framework. Applications were built on top of this secure framework, thus slashing the time and the effort for the development of the entire system.

The mobile application was then designed in close collaboration with a small group of test users. The process for identifying and selecting procedure ID's was optimized to allow the easiest possible access on the small handheld screen. Multiple selection levels (starting with the service type) were designed in order to keep the selection list within manageable limits.

This handheld device, based on the Microsoft Windows CE operating system, allowed the anesthesiologist to quickly and intuitively enter all the operation information, including the anesthesia code, unplanned procedures if any, qualifying circumstances, and other operation details.

A desktop application was also designed to allow the anesthesiologist to "synchronize" the handheld. This transferred all (recorded) operation details to the handheld, and also to the central hospital repository. It also transferred new (scheduled) cases to the anesthesiologist's handheld.

## Technical highlights

- Distributed Operations - coordinating, scheduling and operation documentation in 11 locations.
- Handheld solution for real-time operation documentation.
- Highly secure 3DES encrypted communication, compliant with all U.S.A. healthcare standards.
- Facility for surgeons, anesthesiologists, secretaries (for scheduling), and group administrators.
- Integration with financial software for automated billing.

The use of the Analytica Mobile framework and a component-based development methodology enabled the first phase of this large project to be completed on schedule in only 4 months, allowing the customer to go live almost immediately.



## Features of Moebius

Moebius is the first Mobile Enterprise Computing (EMC) framework today that allows real-time control of mobile users. Built on an industry standard J2EE architecture, it incorporates a number of advanced features. Some of the features include-

### Enterprise Management

The core strength of the Moebius EMC is its support for enterprise management and decision making. It automatically performs data aggregation at each level. Special access applications allow authenticated users to view and control the data, and manage the communication and feedback to the mobile users.

Open standards and XML based secure protocols allow easy integration with a very wide variety of industry products, including transportation and logistics optimization solutions, ERP solutions, Supply chain management solutions, Sales force optimization and control software etc.

### Enterprise Data Access

Moebius EMC incorporates support for all the leading databases in the industry, including Oracle 8i, IBM DB2 v7.2, Sybase ASE 11.0, Microsoft SQL Server 7.0/2000, and Microsoft Access 2000, as well as a number of open source databases like MySQL and PostgreSQL. In fact, Moebius offers the ultimate flexibility of using different databases at different levels of the enterprise, in order to integrate divisions across multiple locations that have already invested in a technology.

In all cases, database access is pooled in and optimized in order to provide the best performance for applications built on top of this platform. Support is provided for most enterprise level data access protocols, including EJB, JDBC, ODBC, and XML.

### Security

Keeping in mind the critical nature of the data that each mobile user carries with them, security in the Moebius EMC has been designed at multiple levels.

Data level security ensures that all the data stored at each layer can be automatically encrypted before storage. The encryption technology used is a strong 3DES level encryption technique, making it almost impossible for the data to be compromised. The presence of strong encryption protected by a password ensures that even if the mobile device is lost, the data is safe.

Transmission/Communication security –

The Moebius EMC system has in-built support for strong encryption while transmission of data from one node to another. This includes the transmission between enterprise nodes, or even the transmission from a mobile device to a local node.

### Optimized Communication

The Moebius EMC incorporates a proprietary communication logic that optimizes even an intermittent contact with an enterprise server.

- An asynchronous, session-managed, fault-tolerant data transfer mechanism to enable mobile devices to exchange data with an enterprise server. This mechanism ensures that even if the link is severed, no data is lost. The data transfer automatically commences again where it was stopped.
  - Communication protocol based on open (XML based) standards. All communication may be encrypted and compressed for maximum transmission efficiency where bandwidth is an issue.
  - Multiple communication channels for data transfer, including web feeds, SMTP/IMAP/POP/FTP protocols. Allows an enterprise to pick a choice of protocols and data transfer mechanisms.
- ### Development Support
- Moebius Development Environment integrated with Microsoft Visual Studio v6.0 through the Moebius Development Toolbox, allows maximum ease of development. No new tools or environment to learn.
  - XML based communication protocol, with rich component model for easy custom application development. Even includes one for XML to VoiceXML conversion for voice-enabled devices and applications.



## Device Support

- Support for entire line of Palm and Windows CE family of devices. These range of devices are supported “out of the box”, with a comprehensive list of components within the Moebius development environment.
- “Connector” architecture based on J2ME standards for easy extension to any mobile device.
- Automatic software update facility, for easy maintenance of the entire mobile infrastructure. Software updates can be deployed on the central server, and it will be automatically distributed to all mobile devices, which will then upgrade the application.

