



SMARTSALE

Ready. Sell. Go!

AN ADAPTIVE PLATFORM FOR MOBILE SALES

Advanced Architecture for Frontline Selling

A WHITE PAPER

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Overview

Success in selling depends on many factors – the sales rep, the customer, the product, the service, the support – and there are always competitors pursuing the same business opportunities. While the difference between winning and losing is sometimes a function of personal relationships, in most cases the difference between success and failure is a function of objective factors – accurate information – about customers, products, pricing, competitors – and the ability to respond to customer situations quickly and effectively – even onsite in real-time in front of the customer. While no device or software program can replace the human relationship between buyer and seller, there are other factors that can help level the playing field. Customers – and even more so new prospects – need to feel confident that the sales rep and the organization behind the sales rep are not only competent and reliable but are also **responsive** to individual customer requirements since no two businesses function identically. To be responsive requires **adaptability** in a variety of areas that are typically very important to the customer – financial/credit arrangements, logistics, geographic/cultural/legal differences, and even in today's connected world, the ability to conduct the sales process both online and offline.

The IT systems that support sales activity are a critical factor in every company's business. A well-designed system aids the sales process. A poorly designed system hinders it. And this is doubly true in the case of field sales reps who are remote from corporate supervision during the sales process.

With the proliferation of mobile sales force automation (SFA) solutions, this White Paper focuses on the design considerations underlying SmartSale that result in a superior solution **adaptable** to a wide range of markets and business models.

1. The Field Sales Process

Before convergence of the internet and mobile devices, the life of the field sales rep was a constantly changing mix of online and offline computer activity supplemented by phone activity – on the one hand between sales rep and customer, on the other between sales rep and corporate management. While the days have long since passed when sales reps arrived at customer sites carrying thick catalogs, lengthy computer-generated price lists with current inventory levels and preprinted order forms, the same information and the same functional capabilities are still needed by the sales rep to perform his/her job.

1.1 Same Goods – Different Sales Process

While the objective of all sales reps is to close sales to new and existing customers, the sales process itself varies from one type of business to another. For example, in the Fast Moving Consumer Goods (FMCG)* sector, the target customers encompass a wide spectrum from large supermarket chains to small mom-and-pop grocery stores with medium-size convenience stores in-between. While the goods being sold are the same – toothpaste, cereals, canned goods, frozen foods, soap powder, etc – the sales process varies significantly according to the nature of the business. In the case of supermarkets, the sales process is best described as “order taking” whereby the shelves are scanned with handheld smart barcode readers and refill quantities entered manually or the supermarket ERP system automatically triggers a refill order as the inventory count is depleted below a minimum level based on real-time updates coming from the point-of-sale checkout stations. By contrast, in the case of the corner grocery store where “fast moving consumer goods” do not move off the shelves so fast, the sales rep may visit the store on a regular basis and meet with the store owner to take orders to replenish the shelves, to sell additional items and to promote new products. While the end result in both these scenarios is conceptually the same, namely orders taken for consumer goods, the sales process is very different.

1.2 Different Telecoms – Same Sales Process

A no less striking contrast concerns the availability and reliability of wireless communications not only for regular phone service but also for internet connections and data transmissions. The sales process where the sales rep can be sure of effective telecom service 99% of the time – indeed the sales rep’s entire modus operandi day-in day-out is designed on that assumption – is very different from the sales process where the sales rep knows that he/she has to function without phone or internet connection during most of the workday. While the issue of reliable telecom service is not uncommon in many countries that are nevertheless catching up fast in improving their infrastructure, it can also be a real issue even in developed countries for sales reps who cover large geographic territories that are sparsely populated.

1.3 IT Adaptability is Key Factor

With these contrasting scenarios in mind, the IT systems supporting the sales process need to be flexible enough to **adapt** to the way each sales rep works and to the way each specific customer does business. In today’s world, it is no longer acceptable that the user has to adapt to the IT system – **the IT system has to adapt to the needs of the user.**

* also referred to as Consumer Packaged Goods (CPG)

2. Road Warriors

Field sales reps are out of the office most of their work day. In fact, they have no office in the traditional sense. Their office is wherever they and their mobile support systems happen to be at any given moment – at home, on the road in their car or on the train, onsite at a customer’s location – almost anywhere. In extreme cases, they may not even meet face-to-face with their managers more than once a quarter – if even that – and even then, the meeting may take place at the hotel where the manager is staying during his/her monthly trip to the various sales territories, not at the corporate offices. With this in mind, field sales reps are typically self-starters, independent-minded, action-oriented and love “the chase” – pursuing new business opportunities. That’s what gets their adrenalin flowing. The other side of that coin is that they are typically impatient with anyone and anything that stands in the way including their corporate managers who, in the eyes of the sales rep out in the field – “in the trenches fighting the competitive battles” as they view the world – are remote individuals who push paper around in their fancy offices at headquarters. The sales rep’s view of the world can be summed up very concisely: “Without sales, none of you would have a job at all. Period. End-of-story” – and there’s certainly a strong case to be made for that view. Of course, the corporate view is somewhat different. The manager’s view can likewise be summed up very concisely: “Without products to sell, without updated stock figures, without effective logistics and operations, without competitive information, you sales reps couldn’t function at all. Period. End-of-story” – and there’s certainly a strong case to be made for that view also.

The reality is that both positions are valid and each depends on the other. The reality is that for all players in the sales process to be effective in their different roles, they need IT systems that

- a) deliver accurate information in a timely manner,
- b) execute the functions essential to the sale process in a timely manner, and
- c) are **adaptable** to a business landscape that changes unpredictably – and often.

The real test of the effectiveness of a mobile sales system is when it is in the hands of **road warriors**. These are the “rainmakers”, the “real producers” who consistently over-deliver no matter what obstacles stand in the way of “closing the deal”. If there is a high-level of acceptance of the mobile sales system by an organization’s road warriors, that is the most convincing evidence that the design, usability, functionality and performance of the system are right.

Road warriors *improvise* when they encounter obstacles to closing the sale. Road warriors **adapt** to the customer situation. Road warriors need – and expect – their mobile IT systems to be **adaptable** to meet their needs.

While the term “road warrior” encompasses a wide variety of roles – sales, marketing, executive, field support – there are a number of characteristics that are common to all:

- Travel
 - by plane, train, auto, public transport
- Remote communications
 - by phone, email, text message, fax
- Multitasking
 - serial (e.g. switching frequently and rapidly between different functions such as note-taking and responding to urgent emails)
 - parallel (e.g. talking to customer while texting corporate management)
- Customer-facing interactions
 - displaying and presenting new offerings to customer

- clarifying queries about customer account
- conference call with corporate and customer executives
- Corporate/management interactions
 - reporting to manager

2.1 Field Sales: Essential Data and Functions

The basic **data** that every salesperson needs is

- Product Information
- Customer Information

While the level of detail may vary, there is a basic minimum without which no salesperson can function. In addition to the basic minimum, there are additional types of information that all sales reps find useful whether they are working remotely or at an office workstation:

- History of all types of contacts between the customer and the company (e.g. email, phone, webinars, face-to-face meetings)
- Sales history
- Notes – e.g. customer complaints, customer wish-list.

The basic **functions** that every sales rep must be able to perform are

- Record the details of a customer order
- Transmit the order to corporate systems to be fulfilled

In addition to the basic minimum, there are many other functions that all sales reps find useful whether they are working remotely or at an office workstation:

- Display customer transaction status e.g. unpaid invoices, unfilled orders
- Process customer returns
- Accept payments on-the-spot
- Daily, weekly, monthly, quarterly statistics and reports

2.2 Corporate Management: Essential Data and Functions

As already mentioned in the opening paragraphs of this chapter, salespeople and corporate management are mutually dependent. When sales reps take orders in the field, customers expect the goods to be delivered within an agreed timeframe. Orders are typically arriving at corporate headquarters in a steady stream from different sources – from sales reps in the field using their mobile devices, from sales reps at a call-center taking orders over the phone and, even in today's fast-moving world, from orders arriving as hard-copy documents by fax or even by mail.

At corporate headquarters, management's role is to ensure that all the orders are fulfilled. The activities involved in order fulfillment are typically handled by the company's ERP system which itself may be integrated with a CRM system. Clearly, there must be a smooth bidirectional flow of information and related processes between the corporate IT systems and the mobile systems in the field. While first generation mobile field sales systems focused on delivering the same data and functionality as their fixed workstation cousins, mobile systems are inherently different because of their mobility – **and mobile sales force automations systems in particular are potential game-changers.**

2.3 Game Changers

It is now generally accepted that the convergence of the internet and mobile devices falls into the category of **disruptive technologies**. Together they have the potential to change not only the way business is conducted between buyer and seller but also the role of each player in the sales process. A few examples below serve to make the point but, it is clear from these examples, that the only limiting factor in how to exploit the new world of mobility is one's own imagination.

2.3.1 The Field Sales Rep as Real-time Market Researcher

With the convenience and immediacy inherent in mobile systems, the field sales rep can perform many activities that would otherwise come under the heading of "market research". With the built-in camera capability of smartphones and tablets, the field sales rep can quickly and easily take snapshots of the competition's market penetration and positioning in any customer's business. With the high quality graphics and video-clip capabilities of mobile devices, the sales rep can show and demonstrate new product offerings, explain how they can be promoted to the target market and report back to corporate management customer reactions.

2.3.2 The Field Sales Rep as Operations Assistant

There are times when customers want to return goods that were purchased on a provisional basis. Historically, the procedures involved in returning merchandise are often very bureaucratic and time-consuming for the customer who, typically, had to deal with a separate department from sales. The field sales rep was simply unable to handle this activity even if he/she wanted to do so in order to keep the customer happy. With the advent of mobile systems, a well-crafted app can eliminate much of the bureaucracy by enabling the field sales rep to handle the task in real-time while visiting the customer.

3. The SmartSale Adaptive Platform

In recent years, there has been a proliferation of solutions for field sales reps based on smartphones and tablet computers. At the enterprise end of the spectrum, they are typically extensions of specific vendor ERP/CRM systems. At the other end of the spectrum, they are enhanced barcode devices and PDAs originally designed for stock-taking and replenishing the shelves of large retail stores. Faced with a bewildering choice both from well-known brand names and from lesser-known “newbies”, on what basis does an organization contemplating the acquisition of such a solution make an informed decision?

As a company engaged in designing and delivering ERP systems that support the manufacturing, inventory, logistics and sales operations of customers across a wide range of industries and market sectors, CAV Systems responded to requests for a mobile sales solution from its own customers by first examining “the bewildering choice” of systems already in the market with a view to identifying their strengths and weaknesses in the context of the widely differing needs of CAV Systems’ own customers. The most striking observation resulting from this examination was how similar the many mobile sales solutions are at the superficial level – and how different they are on closer examination.

The questions and issues that arose during this investigative stage and that subsequently influenced the architecture and design of SmartSale are summarized below in Table 1.

1.	“best-of-breed” solution with flexible integration capabilities to customer’s ERP/CRM systems	vs	single vendor tightly integrated ERP/CRM solution
2.	platform-independent HTML5 core technology	vs	platform-specific development environment
3.	single source code app deployable on all major mobile platforms – and on any workstation that has a browser	vs	multiple source code apps for different mobile platforms
4.	self-implementing “over the air” setup for each new user	vs	IT support needed to get new user up and running
5.	automated seamless app update	vs	enduser-activated app update
6.	modern cloud architecture	vs	in-house server architecture
7.	strong offline functionality with automatic online synchronization	vs	functional dependence on online communication
8.	“on-demand” scalability	vs	in-house system upgrade
9.	no “sysadmin”	vs	increased in-house sysadmin
10.	minimal startup costs	vs	capital expenditures
11.	customizable using readily available IT skillset	vs	specialized platform-specific programming skills

Table 1

3.1 The Similarities

While there are custom-designed mobile devices for specialized markets, the focus of this document concerns the broad market for mobile sales solutions.

- the devices deployed for mobile sales force automation (SFA) systems are typically smartphones and tablet computers from the leading brand names.
- the operating systems are typically iOS (apple), Android (google) and Windows 8 (Microsoft).
- the basic functions needed to perform the sales process in a mobile setting are similar and so are the screen displays.

None of this is surprising.

3.2 The Differences

All mobile SFA systems handle the standard basic set of functions needed to view customer data and product information and to process a basic sales order in a straightforward manner. This too is not surprising. However, on digging deeper, a number of issues become clear that separate mobile SFA systems into two categories:

- 1) **systems that are rigid in their design:** as a result, the customer/user of the system either (a) has to adapt his/her way of working to the constraints of the system, or (b) is faced with customization requiring specialized skillsets;
- 2) **systems that are flexible and adaptive:** the system can be easily customized using readily available skillsets to fit the way the business operates and the way the sales reps interact with customers in the field; furthermore, the significance of “using readily available skillsets” is that it opens the way for customization to be handled not only by the vendor of the mobile SFA app but also by resellers and, in the case of large enterprises, by in-house IT professionals.

3.3 The Key Design Issue - “best-of-breed”

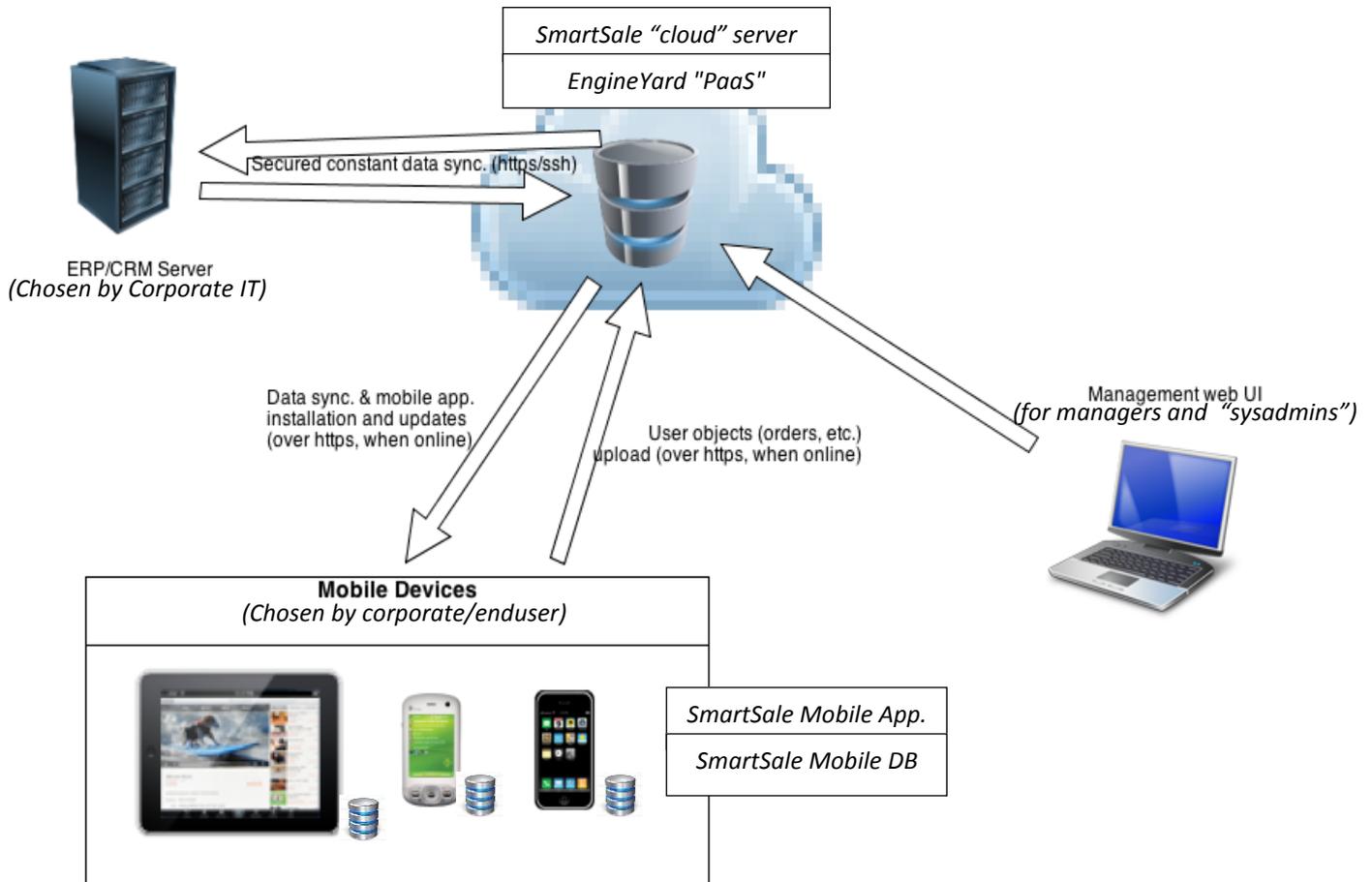
In today’s world of fast-moving complex technologies in which no single company or organization can be experts in everything, success comes to those who pick areas where they can claim what is generally referred to as *subject matter expertise*. Focusing on such areas leads to acquiring the reputation of being *best-of-breed*. Recognizing that opinions vary in some key areas regarding *best-of-breed*, the designers of SmartSale made the following key decisions at the outset that reflect this reality in several ways:

- SmartSale should be deployable with whatever mobile device the user views as *best-of-breed* within today’s mobile device ecosystem
- SmartSale should be deployable with whatever ERP system the user views as *best-of-breed*
- SmartSale’s cloud platform will be serviced by a *best-of-breed* provider of PaaS (Platform as a Service)
- SmartSale should be adaptable with minimal effort using readily available IT skills.

The above key design decisions are the basis from which flows SmartSale’s own *best-of-breed* reputation.

3.4 SmartSale System Architecture

The following diagram visualizes the components of the SmartSale system and their interrelationships.



3.4.1 SmartSale Cloud Platform

The phrase "cloud architecture" has become so pervasive in recent years that it has become a generic term that everyone takes for granted – except for those who are tasked with responsibility for ensuring that their cloud system operates flawlessly 24/7 under all circumstances. Closely associated with "the cloud" is the Software-as-a-Service (SaaS) business model whereby software solutions are delivered to users as a service instead of as a licensed software product installed on the user's server and/or workstation. Indeed, the SmartSale business model is also the SaaS model.

However, recognizing that setting up, administering and managing "cloud systems" is itself a highly technical area that requires "subject matter expertise" – and consistent with the best-of-breed philosophy presented in Chapter 3.3 – the "cloud system" platform that is at the heart of the SmartSale system is administered and managed by the leading Platform-as-a-Service (PaaS) provider with global reach. With this delivery model, CAV Systems focuses on its areas of expertise, namely, the sales force application to ensure best-of-breed functionality and adaptability while the PaaS provider focuses on its areas of expertise, namely:

- safe system **upgrades with fallback** to previous version
- automatic database **backup & recovery**
- seamless **scaling** (of storage, CPU, and bandwidth)
- world-class **security** for all levels of server-side technology stack
- around the globe **hosting** (the closer the hosting platform is to the field sales rep's geographic location, the better the performance and reliability)

3.4.2 SmartSale Cloud Server

The Server contains the SmartSale database which stores all the data needed by the SmartSale Mobile App:

- Customer Info: company name, contact details (name, address, phone number, email, etc)
- Product/Catalog/Inventory Info: SKU, product name, image/picture of product, pricing, current stock, etc
- Order History Info:
- Sales Rep Info: name, contact details, daily visit plans, etc, etc

The Server also contains the SmartSale Mobile App in its various versions and implementations. The appropriate version is downloaded to the user's mobile device automatically and transparently whenever needed e.g. initial setup for new user, version updates.

The Server also fills the role of "staging area" between the SmartSale Mobile App and the external ERP/CRM system. This can be used to add an extra layer of control to the app should this be viewed as desirable by corporate management. For example, the app can be **adapted** to perform customized validation of data entered by the sales rep that may involve an additional stage of approval "behind the scenes" by the sales manager before the data is passed along to the production ERP/CRM system.

An interesting benefit flowing from the introduction of an adaptive platform such as SmartSale is that it can extend the life of older generation ERP systems by adding capabilities that typically fall under the heading of Customer Relationship Management (CRM) or Sales Order Processing systems.

3.4.3 SmartSale Mobile App & Mobile Database

This is the part of the overall system that is designed to support the field sales rep even when disconnected from the wireless network. Through a "touch" User Interface (UI), it encompasses all the functionality needed by field sales reps to perform all their tasks.

Most user functions are processed on the mobile device using a local replica of the slice of the cloud database that is relevant to the individual sales rep's activities. The local replica is automatically synchronized with the SmartSale cloud in the background whenever the mobile device is online. This mode of operation enables two important features for the user:

- Seamless **offline** operability (*No matter what IT or telecom problems arise, the show must go on for field sales reps!*)
- Fast and smooth **UI responsiveness** unaffected by wireless communication quality or occasional server loads

Only operations which by their very nature require on-line execution (e.g. a specific crucial stock query, on-line credit check, etc.) bypass the local database and make the round trip from the mobile device to the SmartSale cloud server (and if needed, also the corporate ERP/CRM system).

3.4.4 SmartSale BackOffice Management Suite

Via a friendly Web UI, this component serves two primary functions:

SmartSale System Administration:

- add new users and manage existing users
- display and manage system activity and performance

SmartSale Application BackOffice Functions:

- Management Views of Sales Rep Individual/Team Activities and Performance
- Manage business rules (and exceptions)

4. The Importance of Core Technology

The two key factors that determine the technical success of IT systems are

- 1) **design**: the overall architecture of the system, and
- 2) **implementation**: the core technology employed in developing the system.

Chapter 3 addresses the design considerations. Chapter 4 focuses on how SmartSale is implemented. In particular, key aspects of the core technology are presented together with their impact on the mobile user in the field.

4.1 HTML5: The Importance

A close examination of mobile SFA solutions reveals that systems whose core technology is based on platform-specific native technologies – whether old or new – are less flexible with regard to portability and customization – and, as a result, are less adaptable to the specific needs of different organizations and end-users.

HTML5 includes the fifth revision of HTML markup language, CSS3, together with a series of Javascript APIs. The evolution of HTML reflects the evolution and convergence of the internet and mobile devices alluded to in the opening sentence of Chapter 1. In particular HTML5 answers the needs of app developers not only for platform independence but also for a host of other capabilities that facilitate the delivery of superior apps for end-users.

Whereas solutions based on older web technologies normally require platform-specific native code for the same app to be deployable on different platforms, solutions whose core technology is HTML5 can be deployed on the leading smartphone and tablet devices from a single source code app.

The core technology of SmartSale is HTML5.

4.2 HTML5: App Adaptability

In today's challenging economic climate, businesses are constantly seeking "an edge" over their competitors. While it is ultimately the human factor that distinguishes winners from losers, the IT systems supporting business activities can help or hinder meeting the challenge.

While packaged software solutions offer considerable benefits over in-house developed solutions, the question arises "If everyone is using the same or similar packaged software solutions with the same or similar functionality on the same or similar platforms, how can IT deliver a competitive edge?"

The answer is **adaptability**.

For many companies the standard functions offered by off-the-shelf solutions are adequate to meet the company's day-to-day operational business requirements without customization. However, for situations where the standard functions do not address all the business needs, an adaptable solution can offer the right balance between the benefits of packaged software and business-specific customization. For example, all SFA packages offer basic search facilities for product catalogs. On the one hand, for a business with 500 items in its catalog, the basic search tools may be good enough. On the other hand, for a business with 10,000 items spread across a variety of product categories, a more efficient user-friendly interface can make the difference between field sales reps embracing the mobile sales solution instead of resisting it. The ability to adapt the app – and to do so quickly and economically using readily available programming skills – can become a key factor in choosing one solution over another.

With HTML5 as its core technology, SmartSale is designed to offer the right balance of built-in functionality and adaptability.

4.3 HTML5: Platform Portability (or, the BYOD issue)

One of the issues that arose during CAV Systems' discussions with its own installed base of customers as well as external discussions with users of various mobile SFA systems was the "BYOD" issue – the "Bring Your Own Device" issue – that is a growing point of friction between employees and IT departments in organizations both large and small.

It is a fact of life that everyone employed in a professional capacity in any organization today has at least one – and possibly more – mobile devices that they own personally. The one mobile device that everyone has is a mobile phone which, increasingly, is a smartphone operating on one of the 3 leading platforms – iOS, Android, Windows 8. In addition, a growing number of professionals are using iPad and other tablet devices in both their private and business lives.

Since field sales people are already the most likely to be carrying their own personal smartphone and tablet device everywhere they travel, the last thing they want to hear from their IT department or sales manager is that they must carry another mobile device – a corporate one – for the sales force automation app. They want to be able to use the app on their own smartphones and, increasingly, on their own tablet devices. While this is a benefit for the corporate organization since it reduces capital expenditure, IT managers are never comfortable having to support apps on devices that they have little or no control over.

With HTML5 as its core technology, SmartSale strikes the right balance between the needs of the end-user and the concerns of the corporate IT manager.

4.4 HTML5: Optimization and Performance Issues

As already mentioned in Chapter 2, the ultimate test of a mobile SFA system is how well it is accepted by road warriors – and a critical factor in their eyes is how responsive the system is to their interactions with the mobile app. This is particularly relevant in the case of SFA systems designed around cloud architecture since the data on which the application depends is sitting on the cloud server – remote from the mobile devices that access the data.

Two key design issues that impact performance are

- i. the volume of bidirectional data exchange occurring between the mobile device and the cloud server, and
- ii. the number of keystrokes transmitted from the mobile device to the cloud server.

4.4.1 Minimizing Data Transmissions

There are three approaches to database (DB) access that can have a significant impact on performance of mobile apps:

1) No DB replication:

All database access is directly with the server. With this approach, the app on the mobile device transmits every DB access request to the cloud server and waits for the response. There is only one copy of the database for all users and each mobile user is accessing the true current state of the database reflecting all the activity of all the users in realtime.

2) Mobile DB replica of Cloud DB:

The entire database is downloaded from the cloud server to each mobile device at the start of each day's activity for each mobile user. Database reads are processed on the local database on the mobile device thereby avoiding transmission between the cloud server and mobile device. The handling of changes to the database by the mobile user is application-dependent; they may be processed in real-time or may be accumulated for end-of-day processing.

3) Adaptive context-dependent Mobile DB:

A slice of the database is downloaded to the mobile device whenever the app is initiated on the device. The size and content of the slice depends not only on the application and the role of the user but also on who the specific user is. For example, access to certain functions and therefore to certain data may only be permitted for Sales Managers, not to the Field Sales Reps themselves. This may mean that less data needs to be downloaded to the mobile DB for Field Sales Reps than for Sales Managers who are also out in the field. Likewise, since each Field Sales Rep handles his/her own set of customers, there is no need to download the entire customer DB for each mobile user – only the data for the set of customers of the specific user. As in the case of approach (2), the handling of changes to the database is application-dependent.

With HTML5 as its core technology, SmartSale strikes the right balance by adopting the "Adaptive context-dependent Mobile DB" approach.

4.4.2 Minimizing Keystroke Transmissions

It is very likely that every reader of this document has encountered the phenomenon of interacting with the web and suddenly the expected response from the browser does not occur within the expected timeframe – and this phenomenon occurs whether the browser activity is on a mobile device or connected workstation. The responsiveness of the web site that is being accessed depends on many factors most of which are not under control of the end-user e.g. the number of users accessing the web site at the same time, the quality of service of the internet service provider, and in the case of mobile users, the quality of service of the telecom service provider. For mobile users in general and road warriors in particular, there is a feeling of helplessness followed by frustration whenever the system's responsiveness deteriorates.

One thing is obvious: the fewer the number of interactions between the mobile device and the cloud server, the less chance there is for poor responsiveness. The corollary is likewise obvious: the more activity that can be performed locally on the mobile device, the better the performance and responsiveness.

Clearly the "No DB Replication" approach in Section 4.4.1 results in a high number of keystrokes being transmitted from the mobile device to the cloud server and a corresponding high volume of data transmission from the cloud server to the mobile device.

The "Adaptive Context-dependent" approach in Section 4.4.1 offers a well-balanced approach in which as much functionality as possible is performed locally on the mobile device thereby minimizing transmissions between the device and the server.

4.5 HTML5: Online/Offline App Continuity & Synchronization

While it is true that mobile sales solutions are intended for use with devices that are able to communicate wirelessly, the question arises as to whether the absence of such communication leaves the sales rep in a situation where he/she is unable to function. As already alluded to in Chapter 1.2, such situations arise even in countries with well-developed telecom infrastructure. While HTML5 itself does not include data synchronization as a built-in capability, it offers developers facilities that simplify the design and programming of apps that ensure continuity for the critical functions needed in field sales situations when internet communication is unavailable and, when communication is reestablished, facilitates the synchronization of offline and online activities and data.

With HTML5 as its core technology, SmartSale includes support for functional continuity when the field sales rep is disconnected and ensures data synchronization transparently when online communication resumes. This is an essential aspect of "business continuity".

4.6 The App Store Provisioning Issue

Most mobile SFA solutions being offered by vendors nowadays are designed around cloud architecture. This has many benefits that are common to all systems based on such architecture including SmartSale.

Provisioning: The Data

All data required for the SFA app reside in the cloud and the customer/user need not be concerned about matters such as data backup and related system administration issues.

Provisioning: The App

The app – the program that runs on the mobile device – is stored in an app store that is typically one of the following: (a) a public app store such as those managed by Apple (iOS), Google (Android) and Microsoft (Windows 8); (b) a private app store such as those from Apperian and MobileIron; (c) a vendor app store managed by the vendor of the app. The app is loaded from the app store and installed on the mobile device; the method of doing so may vary depending on the nature of the app and the IT policies of the company using the app. For example, if the nature of the app is that, once it is installed on the mobile device, it remains unchanged on the mobile device until a new version is installed, the type of app store does not have a significant impact on the use of the app in the field.

However, for customers/users whose ability to respond quickly to competitive market pressures may require modifications to the app frequently with “next day” availability of the modified app across all the mobile devices of all field sales reps, the type of app store can be the deciding factor in choosing a particular mobile sales solution. A word of explanation is needed. In the specific case of apps for iOS platforms where the app is available for download only from Apple’s own app store, there is an approval process that all such apps must pass through in order to be included in the Apple app store. Based on recent* anecdotal information, this process takes between 1 and 3 weeks. The approval process is a requirement not only for the initial release of an app but for all subsequent updates and releases.

For customers/users of apps whose needs are satisfied by the standard app and can afford to wait for enhancements and new releases according to the vendor’s timetable, this may be acceptable.

However, for road warriors who need modifications “on the fly”, the iOS public app store approval process introduces an unacceptable delay that negatively impacts the customer’s business. Additional complexity arises in cases where the same app may be deployed across different mobile devices some of which are iOS while others may be Android or Windows 8.

Recognition of this issue led to the decision by CAV Systems that the SmartSale app – the standard off-the-shelf app as well as customized versions of the app – will be downloadable from the SmartSale “cloud”. This ensures that the approval process for new releases and/or customized versions of SmartSale is controlled by the app vendor, CAV Systems, and/or the customer/user.

**The Latest Long Apple Line: Developers Waiting for App Approval – November 8, 2012*

<http://allthingsd.com/20121108/the-latest-long-apple-line-developers-waiting-for-app-approval/>

4.7 Seamless App Setup

The increasing use of mobile devices in business settings complicates what was already a problematic area for IT departments, namely, initial setup for new users of the organizations IT systems and the subsequent updating and upgrading of all users whenever system and/or application changes have to be deployed – and this was in circumstances where the IT department controlled the hardware (e.g. laptop computers, desktop workstations, etc provided by the organization) as well as the software.

For a mobile sales force whose entire attention must be focused on selling, the initial setup and subsequent updates and upgrades of the mobile sales solution must be as simple and as transparent as possible for the sales rep.

The SmartSale approach is to automate this task entirely by performing the initial setup “over the air” when the new user first comes on board and also for subsequent updates and upgrades.

4.8 Seamless App Updates

In Chapter 4.3 the importance of the method of “App Provisioning” is explained. A further benefit of the SmartSale approach to App Provisioning concerns the issue of control over deployment of app updates to sales reps in the field.

Users of apps downloaded from public app stores to their smartphones and tablets are by now accustomed to alerts from the app store making them aware of a new version or upgrade. The decision of whether and when to deploy the new version is in the hands of the individual user. While this may be acceptable in the case of apps where the frequency of app modifications is low and the timing of their deployment has little business significance, this issue can assume critical importance in situations where modifications made to the app in response to fast-moving events in highly competitive markets must be deployed to the mobile devices of all field sales reps within a very tight window of time. Clearly, control of the timing of this deployment cannot be left in the hands of the individual sales reps.

With this in mind, the SmartSale approach is to check if updates are waiting to be deployed each time each user connects the mobile device to the SmartSale system. If there are updates waiting, then they are automatically downloaded and installed in a transparent and seamless manner.

Without such an approach, where users are in control of the updating of apps on their own devices, different sales reps may be using different versions of the app, potentially causing confusion in the marketplace. ***It is important to differentiate between updates to data such as new pricing and updates to programs i.e. to app functions.*** Consider a situation where a new business rule has to be added urgently in response to a competitor’s tactics. While simple business rules may be able to be changed through data parameters, more complex rules require changes to the app itself.

In Chapter 3, the point is made about “how similar the many mobile sales solutions are at the superficial level – and how different they are on closer examination”. The above example regarding business rule updates and how they are deployed focuses the reader’s attention on how architecture and core technology can impact the day-to-day operations of users in the field.

5. Conclusions

Not all mobile sales force automation solutions are created equal. On the surface they may have similar functionality and similar look-touch-feel. However, on digging deeper into the suitability of an off-the-shelf solution for an individual company and its specific field sales operations, constraints often appear that result in resistance to adoption of the solution by the field sales team or by the corporate IT team.

With the SmartSale approach, there are few constraints. The choice of mobile device is in the hands of the user. Corporate IT is not burdened with additional platforms to administer. Integration with existing ERP/CRM systems is straightforward – and last, but by no means least, adapting the app to fit individual business needs can be achieved with readily available IT skills.

For software solution resellers seeking to enter the rapidly growing market for mobile solutions or to expand their portfolio of current offerings, SmartSale offers the perfect combination of quick market entry today and adaptability tomorrow.

About CAV Systems Ltd

Established in 1979, CAV Systems Ltd is a leading Israeli software company, engaged in development and deployment of enterprise applications – ERP, banking, and tourism. With a staff today numbering over 80 people, the company not only pioneered the adoption of web architecture and Java technology in the delivery of solutions to its customers but also designed and deployed mobile solutions over a decade ago using cutting edge technology of that era.