White Paper

Mobile Capture Opportunities in the United States

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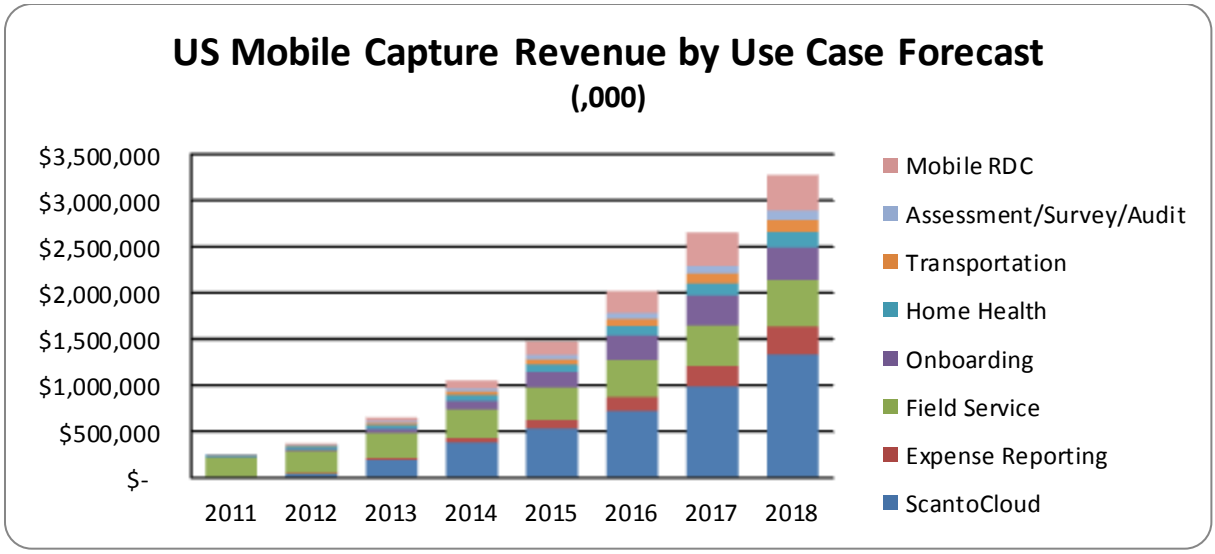
The Mobile Capture Market in the U.S.

Mobile devices and associated cloud-based applications are dramatically changing business practices throughout the US and the globe and will cause changes in distribution and delivery of services. Focused on 8 specific use cases, this study looks deeply into how the rapid advance of mobile technology is impacting business in the United States, and what the likely impacts are for the document capture market and ecosystem.

The use cases selected were Mobile Check Deposit; Field Service; Survey/Assessment/Audit; Expense Reporting; Home Healthcare; Transportation; Onboarding; and Cloud Repository Services. This data, collected in the course of over 150 interviews, was supported by on-line research into industry dynamics, breaking news and market sizes.

Accelerating Processes Drives Value

The results are dramatic, clear and perhaps surprising to many. By accelerating process workflows, mobility can eliminate a great deal of paper from business transactions and increase the value and capture probability for residual paper. It increases the number of potential users by opening access to document management for SMB and consumer segments that never have had access previously. It also substantially broadens and enhances the value of data extraction by enabling real time verification and completeness of captured data. These benefits will be sufficient to accelerate the growth of mobile capture as an industry, expanding its reach and opening entirely new markets for the technology.

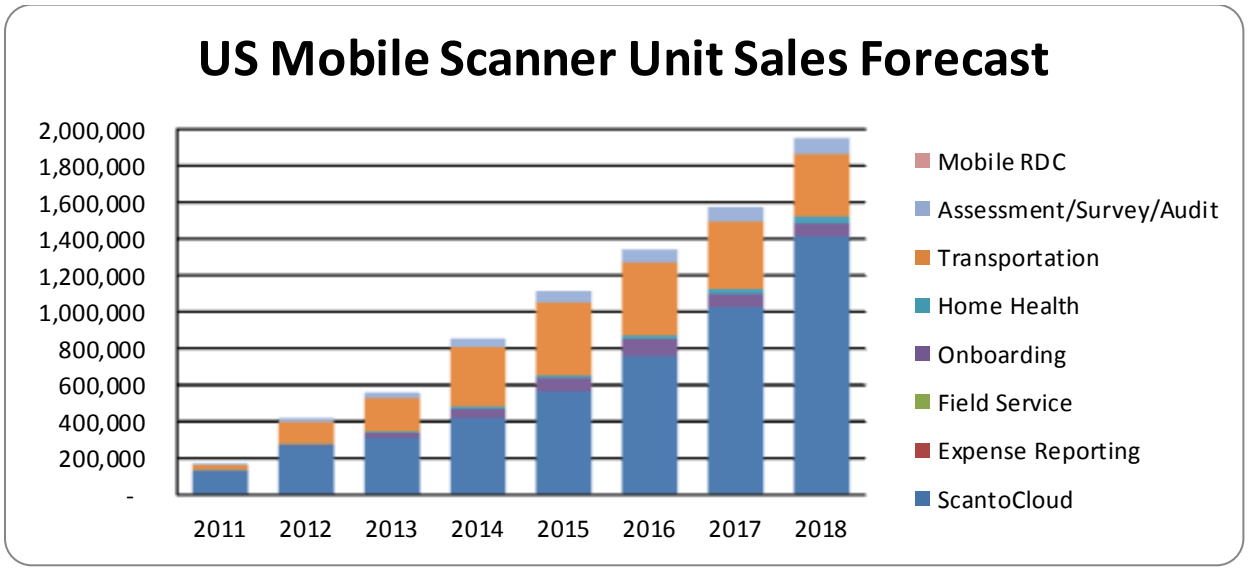


New Applications Are Incremental to Existing Markets

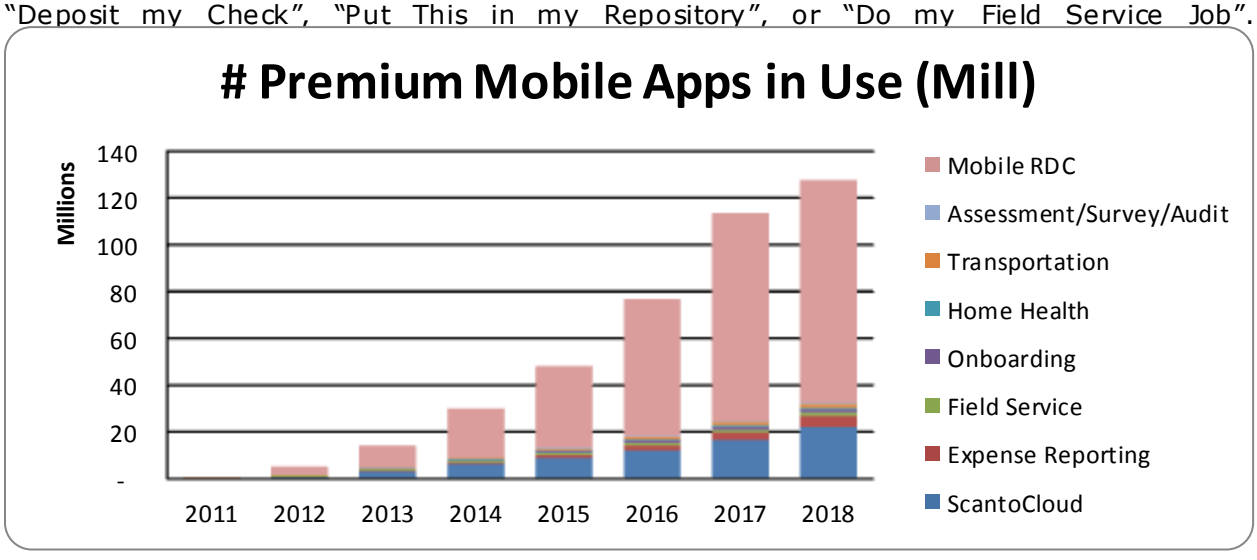
Many of the new capture applications and their revenues are incremental to the existing capture market. As a reference point, consider that DropBox users are storing 3bn records daily in the cloud and much of that content was not digital and/or not stored at all in the past. Although measurements, use case definition and possible areas of overlap are all uncertain, we are confident in saying that mobile capture application revenues will reach the $ multi-billion level over the next 5-6 years – our very tentative estimate is that the annual revenue could reach over $3bn just for the use cases studied.

The Impact on the Scanner Market will Vary by Hardware Category

Mobility will promote use of multiple scanning devices including personal scanners and device cameras as well as kiosk type operations. It is mostly an Ad-hoc market which will take away from and be a net negative for high speed centralized scan volumes, and be moderately negative for departmental scanners. It probably will not impact use of MFP devices for scanning significantly. We estimate that the use cases we examined, particularly capture-to-the-cloud, will generate sales of over a million personal scanners annually in the US by 2018, with a comparable international opportunity.

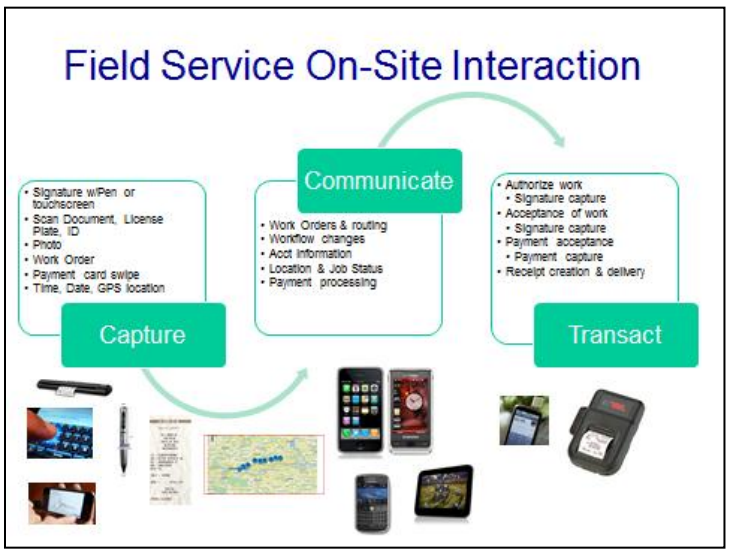


The number of premium mobile capture apps installed will increase substantially, with many users having multiple apps that do capture. Remote check deposit (RDC) will probably be the most frequently installed, although not the highest revenue generating, premium mobile capture app in the US. Many users will not consider their apps to be "capture" apps at all. Rather, they will think of them as solution apps for a problem they wish to address, such as "Deposit my Check", "Put This in my Repository", or "Do my Field Service Job".



The competitive landscape for premium capture apps is likely to be chaotic and disorganized over the next 5 years at least. Traditional capture vendors are already facing a host of new market entrants eager to win a share of this burgeoning market. Many have created straightforward capture apps, but others have taken the approach of leveraging the attributes of mobile devices to create new vertical workflow solutions. These solutions use capture to enable complete transactions in real time and with a single visit. They typically leverage tight integration of location based services with real time data entry, capture and validation supported by real time communications, access to needed information and may include payment processing. Some of these vendors have roots in LBS, others in mobile, a few in document capture and others no roots at all, but at least a few are are likely to gain enough momentum to go public and become large companies in the long term.

The Most Compelling Mobile Workflows Are Straight Through and Real Time



The best work processes seen in this study were those where the mobile device is a transactional instrument used to initiate, conduct and complete an entire transaction in a single visit in real time. The operational savings and customer experience improvements driven by this class of complete transactional solution are enormous and account for the rapid adoption of mobile check deposit, field service, mobile healthcare and some on-boarding apps.

"Clipboard Replacement" is a compelling application with great ROI

"Clipboard Replacement" moves user groups who once used clipboards for surveys or assessments to mobile devices. The advantage, as with many Mobile apps, is that the data can be validated in real time before the user moves to another transaction. Savings can be huge, with achievable ROI of less than 12 months in many cases. We encountered some on-boarding clipboard applications where the current exception processing costs of fixing document errors constitutes the majority of the operating expense, which can be entirely eliminated by on-line mobile driven processes.

There will be a substantial volume of Residual Paper

Residual paper is the paper that remains in a business process even after it has been completely "automated". This study found that many use cases do have a residual paper component that will persist even after the workflow is completely automated and mobilized. Residual paper found includes:

Residual Paper Worksheet		
Use Case	**What**	**How Much**
Home Healthcare	• Documents requiring by JACO regulation to have paper signature. • 3rd party communications (pharmacy, therapists, patients, etc.) • Handwritten notes	100 Pages /Yr./Patient
Onboarding	• Proof of ID, Citizenship, Residence, Income, Parentage or Training • 3rd party correspondence, such as referrals or recommendations	2-3 pages / Trans.
Assessment	• Signed forms, correspondence	occasional
Field Service	• Checks, signed authorization if regulatory requirement, such as automobile repairs	1-2 pages / trans.
Scan-to-the-cloud	• All sorts of stuff 5% - 10% of total long term. Includes checks, contracts, handwritten notes, vital records, correspondence, bills	50 / Yr./ User
Transportation	• Bills of lading, weigh station, toll, fuel, operating expense receipts, delivery receipt	2-3 pages / delivery
Expense Reports	• Cash expense receipts or receipts which must be itemized, such as hotel bills	6 / report
Mobile RDC	• Checks for mobile deposit, perhaps other documents for mobile bill pay, etc.	1 / trans.

The Cloud Repository Opportunity Is An Industry, Not A Use Case

Cloud repositories are bidding to become the standard IT infrastructure for SMB and consumers worldwide. Its astonishingly rapid growth (80m users in 2 years), venture capital investment ($400m in 2 years), and rapid introduction of competitive services by major players such as Apple, Google, IBM, EMC and Amazon virtually guarantee that it will be broadly adopted. We are forecasting 850m users worldwide by 2018 and that number may be conservative.

The current leaders are investing in document management, collaboration and workflow tools which enable users to manage their business processes using disparate clients with content stored in the cloud. These systems can greatly reduce the R&D needed to develop complete end to end workflow solutions. They also greatly reduce infrastructure costs and the cost to market, deploy, support and scale these solutions on a broad global basis.

A Compelling New E-Form Vision

Mobile tablets and smartphones may open a new frontier for e-forms, where the "form" becomes conceptual rather than visual, and where data types for each field may be determined by user preference and demand or history rather than the form designer. This vision enables the app to capture and validate in real time the information needed to

complete a transaction, while also permitting tremendous flexibility regarding how the data is entered, what the user interface looks like, or what device is used to collect the information.

This opportunity is opened by the convergence of;

1) Increased variety of input technologies available from mobile devices, such as voice, keypad, camera, video, stylus, finger, or touchscreen, and,
2) The correspondingly large variety of data extraction capabilities now available in the capture industry, such as OCR, ICR, stroke, or voice, face or object recognition, and,
3) The new ability to verify accuracy and completeness in real time using wireless communications to back end systems.

Forms conceptualized in this way could, for example, permit different classes of users to interface to the app differently. In Healthcare this might mean old doctors can dictate their notes while young ones use a keypad, or old nurses use a tablet with keyboard and stylus while young ones prefer a smartphone with voice.

Smartphone Image Quality Is A Current Issue

Clearly mobile devices are not scanners, and won't be replacing scanners in the near term. Current issues include the quality of the image generated, especially for letter sized documents on some mobile phones caused by poor lenses and sensors designed for photographs rather than text; user difficulty in capturing multiple page documents, and the immaturity of current mobile capture applications. It is likely to take about 2 years before common smartphone cameras and capture software solutions are mature enough to generally capture any document as well as a scanner, but even then we believe that users will prefer scanners for documents longer than a few pages.

The Transportation Market Is Ready For Rapid Adoption And Growth

The transportation industry is poised for a period of rapid growth based on migration of document capture from truck stop kiosks to in-cab scanning and/or mobile capture. Truckers are drawn to mobile because they don't want to be forced to stop just to capture documents, and vendors are drawn to the opportunity to cut truck stops out of their share of the capture revenue. The catalyst enabling change is the release and availability of useful and dependable in-cab scanning solutions for notebook computers, which many drivers have in their cabs. Smartphone capture apps are also available, but are still working out user interface and image quality issues what will slow their adoption for a year or so.

Distribution Channels - Capture Vendors Should Consider Creating And Marketing Apps

The majority of the mobile capture market revenue will accrue to the app and service provider (and app store if applicable), with the remainder split between any OEM technology suppliers. The root driver is that in the mobile world he who controls the app controls the customer to a greater extent than was possible on a PC or Internet service. Since mobile devices are small and apps are extremely use case specific, it is difficult if not impossible for technology suppliers to get any brand value or exposure through a mobile app.

Leverage of the mobile channel is such that if an app is successful it will scale rapidly. A successful app provider may quickly find itself with enough revenue and volume to cost justify designing out some or all of its technology suppliers and it therefore has the upper hand in any pricing discussion.

Mobile Capture App Implementation Value Must Include Users As Well As Enterprises

In some use cases benefits accrue to the company in the form of operating savings or revenue gains, but do not translate into user benefits – in fact it added to his/her burden. Home Healthcare is a current example, where even successful implementations have caused caregivers a productivity loss of up to 20% in the first year. Similar fears were expressed in other assessment use cases also, such as pharmaceutical testing or social worker mobile applications. As another example, in field service applications benefits to the enterprise can be huge, but service personnel may feel too closely 'monitored' and pressured to complete more jobs per day than they did before. App developers need to focus on delivering value to users in order to gain their support for adoption.

Lead Researcher and Author:- David Wood

Mr. Wood has extensive experience in both the wireless and document capture industries. He served for over 20 years as a marketing and business development executive and later consultant, at companies including Calera Recognition Systems, Input Software, Law Cypress Distributing and Wood Associates. In 1999, after selling the well regarded Wood Associates seminar series to AIIM, he co-founded De Carta Software to supply location based services platforms for use in mobile applications such as navigation, mobile resource management, mobile commerce, and social networks. Recruited to Qualcomm in 2005, he played a key role in development of the Qualcomm digital traffic feed and in-cab scanning offerings from the QES division. He later spearheaded the mobile commerce strategy team, contributing to the creation of Qualcomm's Mobile Commerce Division in 2009 and acquisition of Firethorn for $200M+.

Wood has extensive expertise in mobile apps, location based services, document capture, workflow, business strategy and planning, M&A and mobile commerce. He has deep experience in the dynamics of startup companies or projects within established companies as well as skills in business management, marketing, product definition and strategy, business development and strategic consulting.

About Harvey Spencer Associates

Harvey Spencer Associates, Inc. (HSA) is a New York-based analyst and consulting company founded in 1989 to specialize in document scanning and capture software solutions. The company's research on the $2.5bn Worldwide Capture software industry are the most comprehensive industry studies available and are relied on by all the leading vendors in the market.

Harvey Spencer has an extensive background in the IT industry gained over 40 years as an end-user, VAR, manufacturer, and consultant. He has written extensively on document capture and associated technologies over the last 20 years. Mr. Spencer authored a book on how automated Transaction Capture works *and* has conducted studies on the costs and usage of Capture Systems. In 2011, he authored the AIIM Capture Software Product Study covering 63 vendors operating in the capture market.