



Transforming FI Channels with Intelligent Capture

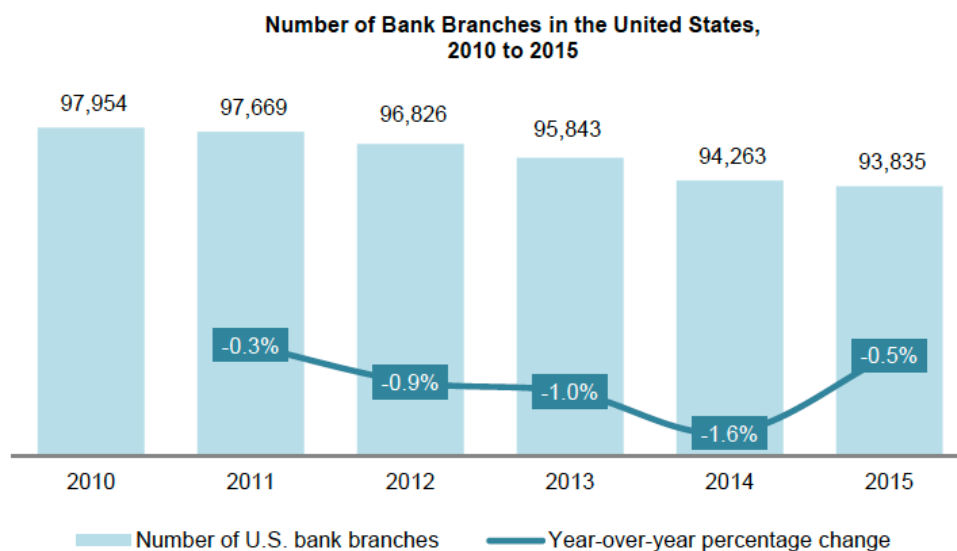
By Christine Barry and Francesco Grasso



A new role for bank branches

Today's fast paced environment and desire for instant gratification through self-service models has led to the explosive growth of the digital channels, in particular mobile, and continued speculation that the growth of these channels might diminish the need for brick-and-mortar bank branches. As financial institutions grapple with slow branch-generated revenue growth and stringent cost controls, they are rethinking their retail distribution business model and right-sizing their branch networks. In many countries, including the United States, we have seen many financial institutions reduce the size of their branch network in favor of automated channels. Since 2010, year-over-year percentage change in number of U.S. branches at FDIC-insured institutions varied between -0.3% and -1.6%. The number of branches decreased from 97,954 in 2010 to 93,835 in 2015 (Figure 1). Similar trends are being seen around the globe.

Figure 1: Decreasing Bank Branches in the United States



Source: FDIC, Aite Group

It is important to note however, that while the number of branches has declined, their overall importance has not. In fact, Aite Group believes with the right strategy and use of technology, the branch channel is more important than ever. As such, the future of the branch channel lies in new customer acquisition, the sale of more complex products, and more pointed guidance and advice for customers wanting face-to-face interactions. A June 2016 Aite Group survey of 22 retail banking executives found that more focus is being placed on staff training and transactions are no longer only conducted at the counter by a less experienced teller. The branch of the future includes bankers walking around with tablets, kiosks, and workstations for customer selfservice and video banking. The ability to meet these new requirements and adhere to the more demanding expectations of clients and client experience are central to a FI's future success. This places greater pressure to invest in modern, smarter technologies to better automate processes and offer tighter integration across systems. Outdated legacy systems, paper-based processes,

and systems that are challenging to integrate are no longer acceptable to staff or the customers they serve. Aite Group estimates approximately 77% of banks are currently looking to upgrade or repurpose their existing branches. Transforming their IT environments are central to their strategies. More simplified architectures enable IT groups to more easily manage, enhance, and upgrade their solutions.

A transformed IT environment offers the following tangible benefits:

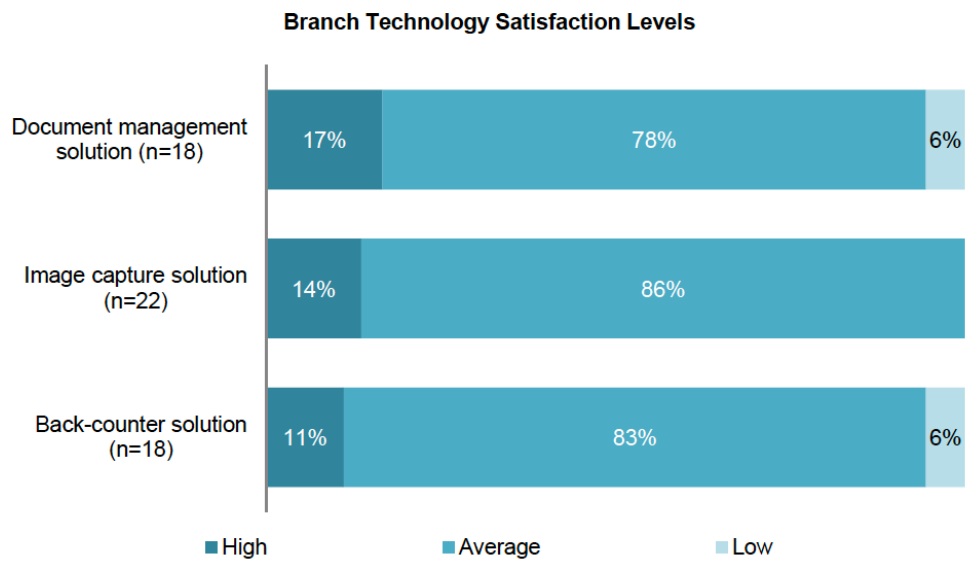
- **Faster time to market for new products:** Infrastructure can be provisioned quickly when required, accelerating time to market for new products and services.
- **Customer-centricity:** Technology focus can shift back to providing value to customers and differentiating the customer experience rather than focusing on infrastructure maintenance.
- **Information availability and quality:** Mission-critical for customer-facing channels, higher real-time availability, and relevant/high-quality data are made possible by the vast capacity a modern IT environment offers.
- **Reducing total cost of ownership:** This is achieved by optimal use of hardware and software, reduced deployment resources, an agile operating model, and a cost-efficient infrastructure.
- **Better utilization of resources and system scalability:** Infrastructure can be scaled optimally for peak demand loads; on-demand capacity can be provisioned over time and can be scaled up or down, further reducing costs.
- **Operational efficiencies:** This is achieved by increasing process automation, adopting consistent standards, and centralizing all corporate data.

As FIs look to reposition their branches as important sales centers, the fact remains that more than 85% of the transactions performed by tellers within them are related to check processing. Given this, Aite Group believes it is critical that FIs not only continue to invest in the check capture and imaging technologies that improve branch efficiency, reduce operating costs, and improve customer experience, but also ensure that the solutions and scanners they have in place fit within their overall branch technology modernization initiatives.

A July 2016 Aite Group study of retail banking executives found that overall satisfaction levels with branch operation solutions were not high, with most financial institutions rating these capabilities as "average." Satisfaction levels for document management solutions rated as "high" for only 17% of surveyed institutions, image capture solutions for 14%, and back-counter solutions for 11% (Figure 2).

Several factors contribute to lower than desired satisfaction rates including dated technologies, image quality issues leading to time consuming rejections, and inflexible architectures that make integration and acceptance of enhancements challenging.

Figure 1: Decreasing Bank Branches in the United States



Source: Aite Group's survey of 22 retail banking executives, June 2016

Check capture technologies climbing

The importance of check capture technologies as a component of an overall branch technical ecosystem have risen significantly since taking off in 2006. By 2010, the number of FIs that had deployed them rose to about 60% as a growing number of FIs recognized the important role they played in branch efficiency. Today check capture technologies are a requirement for any modern financial institution, but their role and the demands being placed on them are expanding, forcing FIs to replace legacy solutions. Aite Group research has found that more than one-third of U.S. banks state they will be replacing or deploying new front-counter solutions (which include the conversion of checks, deposit slips, and other paper items to electronic images as soon as they are presented at the teller line) over the next 24 months. Approximately 14% will be replacing back-counter solutions (which include the conversion of checks, deposit slips, and other paper items to electronic images through branch back-counter workstations and in regional processing centers).

Given their importance, check capture technical architectures have to evolve to support new use cases and FI strategies. Fortunately, the scanners that support them have evolved significantly over the last several years. Until recently, check scanners were primarily input peripherals with the simple task of moving paper through a track as reliably as possible and delivering magnetic wave traces and raw image files to a host that would then take care of making that data “meaningful” and useful to the financial world. While this model still works today for both inbranch (teller and back-counter) scanner installations and for their offsite use with business customers, known as Remote Deposit Capture (RDC), FIs will benefit greatly from moving toward more intelligent check capture platforms. These platforms behave differently from what has been the standard for the past two decades and open up new outstanding technical and organizational opportunities that are supported by a sound business rationale.

The “intelligence” of these scanners begins with data flowing from the peripheral, then made usable for the FI’s business processes and its clients. Checks are primarily identified by a codeline (printed in magnetic ink in most countries and magnetically and/or optically readable), by a set of images (front and rear), and by the additional secondary data the image can provide and the codeline cannot (date, place, amount, payee, signatures presence, and occasionally more). Traditional scanners will not be able to deliver such information in a usable shape alone. They will require an API, supplied by the scanner vendor and running on the host system (usually a Windows PC), to decode and make available the primary data, while an application calling on the API will make the further steps of (optionally) verifying the check images’ quality (IQA: Image Quality Assurance) and usability (IUA: Image Usability Assurance), and extracting from them the secondary data.

API’s are migrating from a status of “necessary evil” to one of “unwanted guest.” There are just too many variables in today’s IT panorama. The need for constant management of this elusive layer sitting between the scanner and the application software is making several players in the value chain ever more uncomfortable. Most recent check capture applications are so-called “thin client” (web-based and running on a browser), while the scanner and the API running it are inevitably local. To tie the parts together, an extra intermediate layer is usually added such as Microsoft® ActiveX or Java plugins, which are both in the process of being phased out by their vendors.

The resulting chain – OS, web browser (type), extra layer, and API – becomes inherently fragile and prone to failures. Even a minor change in any one of the components will require the FI and ISV to verify that the API is still compatible with the new combination and to solicit the vendor for a new release in case any issues are found. Not to mention, when it's the vendor or the ISV who wishes to roll out a novelty (new functionality, better performance, or just bug fixes), all involved players will be hoping that everything will still work as expected.

In an RDC setting, where the host platform (computer, OS, and other software pieces running on it) is beyond the FI's reach, things only get more complicated. Chances of malfunctioning multiply, troubleshooting becomes increasingly difficult, and resolution becomes more time-consuming and costly than when check capture is done within the FI's walls and the host system is fully under control.

Moreover, it's not just about the critical positioning of the API within a delicate logical chain, it's also about which constraints its use imposes on the environment where the application is being run. Constraints which were not perceived fifteen or twenty years ago, but they are today. A standard, traditional API usually implies the presence of a Windows PC, a USB connection, and a single user. Today, FIs and their business clients want to use different operating systems, different interface types (even LAN or wireless), different types of hosts (think of tablets and smartphones), and perhaps even share the device among different users who are all on the same network.

Thus, intelligence means that the scanner can function with the primary check data being captured – and any actions the device may need to perform on the paper documents (such as ink jet indexing, endorsement, or physical sorting) being performed – with no need for an API to run on the chosen host. The removal of the API component will eliminate both the risks and the constraints we have shared.



Everest architecture is Panini's interpretation of the intelligent scanner, which is protected by US Patent Number 9,460,427, includes the capability of addressing a check scanner using http protocol. Http and its secure version, https, are the universal protocols of the web age. Any browser-based application can run these scanners while any host (PC or Mac, tablet, smartphone, or even a POS terminal) capable of sending http commands can control an Everest enabled scanner and easily retrieve the primary check data from it.

Expanding the use cases

Let's examine a few of the numerous implementation capabilities and use cases of Everest enabled scanners, which extend far beyond the traditional domain of API-run devices, as well as beyond the FI branch channel:

- a. API-free Teller (or Branch) Image Capture: this is the common application FIs use to capture check deposits in their branches. Tellers run Everest scanners more or less as they run traditional ones today, with no disruption, whether they are USB-connected to their workstations or instead directly connected to the branch LAN via Ethernet. Either way, the FI benefits from the removal of the "API chain complexity" (IT advantage).
- b. Shared scanner in FI lobby: the scanner is no longer connected to a single workstation, it is connected via Ethernet or secure (WPA2-protected) Wi-Fi to the branch's LAN. Tablet-equipped "Universal Bankers" have the primary mission of engaging the customer, evaluating his/her financial situation, and offering adequate products/solutions. During the common branch scenario in which a customer needs a paper-based transaction, the Banker (whose tablet is connected to the same LAN) will walk the customer to a scanner-equipped station and run the deposit in real-time via the tablet while the banker continues dialogue on the customer's financial needs (which are the FI's main focus). Immediately following the transaction, the scanner remains available for other Universal Bankers to manage customer scanning requirements.
- c. "Autonomous Deposit Station": the Everest scanner is made available to the walk-in customer (depositor) in a special mode called Autoscan. The customer simply drops his/her checks into the scanner and their images/data are automatically delivered to a pre-defined remote server via LAN (Wi-Fi or Ethernet) or even a broadband USB stick. The data is encrypted so security is not a concern and the FI works with the data and provides feedback to the customer on the deposit's success downstream. A more sophisticated and interactive version of the Station will have the customer control the scanner via smartphone app. In this instance, the customer scans a unique barcode on the scanner thus informing the system which scanner is talking to which customer. This allows that customer to activate the scanner first, then control and edit the amounts/other data from the checks being deposited.
- d. API-free RDC: Everest scanners deployed with Remote Deposit Capture users bring many benefits, linked to the delicate/critical nature of the software chain and the risks it faces any time one of its segments is updated or otherwise touched as previously explained. By cutting out the middle-men (the scanner API and any possible extra layers), browser-based RDC applications written in http will be capable of addressing the scanner directly and this will be possible regardless of the Operating System, with a choice of host devices (PC, Mac, smartphone, tablet), with a wired (USB, LAN) or wireless (Wi-Fi) connection, and with any type of browser.

It's important to note how the expansion of RDC can be a major acceleration factor for branch transformation projects: while consumers have already gotten used to depositing their checks via smartphone, many small and medium business are still visiting their branch for the sole purpose of depositing their checks. If given a simple and hassle-free way to onboard RDC, this will alleviate the transaction burden on the branches, encouraging FIs to redesign their network to make it lighter, leaner, more innovative and more sales-focused.

- d. mRDC (mobile RDC) extension: an agent or mobile worker who collects too many checks on-the-go in an average work day to make mRDC convenient (too many front and rear pictures to capture, too many failures due to insufficient photo quality, etc.) can connect a single feed Everest scanner to a smartphone or tablet and highly improve the capture portion of the mRDC app, while keeping the rest unchanged. This can be done while having a break in a coffee shop, restaurant, office, hotel room, etc. at the end of a work day. Someone collecting numerous checks in a temporary location for a short period of time (i.e. Tupperware party or a disaster relief donation point) can quickly deposit them into the account by using a batch Everest scanner connected to a tablet or smartphone, avoiding the risk of loss and theft.

- f. POS use: pay by paper check is declining, but still quite popular in certain retail segments. An Everest single feed scanner can connect to virtually all makes of POS terminals (including tablet POS) using USB, Wi-Fi, serial-over-USB, or even pure serial interface for legacy models (using a USB to RS-232 converter). Once captured, check data can be used for verification/guarantee, payment, and per the merchant's choice, immediate RDC.

Everest architecture also allows on-board applications. The scanner is equipped with an OS, processing power and memory and may host embedded apps which can take care of additional operations the FI or ISV prefer to implement upstream. These may include, but are not limited to, the extraction of, what we call secondary data from the check image (barcodes, OCR, CAR/LAR), IQA/IUA controls, or additional image optimization algorithms – such as the ones sometimes requested to enhance hard-to-read items such as money orders. ISVs may have other proposals for functionalities which are currently part of their check capture applications that would be more efficient (or otherwise advisable) to implement on the scanner itself.

In addition, a USB Master port is present, allowing them to use and control external USB-connected devices such as a Wi-Fi sticks, 4G/LTE sticks for direct network access, GPS keys and more, a real “open door to the outside world,” which is a Panini exclusive. The 3G direct connection will be particularly useful when implementing an in-branch or off-premise Deposit Station as described above.

Finally, when an update will be needed it will be a single, all-inclusive file for which the vendor will be entirely responsible because it will be engineered to apply changes to a piece of hardware the vendor knows in detail – similar to when a smartphone or tablet computer vendor rolls out an OS update for a specific device. No need to run an update with the risk of failure because its compatibility with the other segments of the chain will not be in jeopardy.

Conclusion

In this modern retail banking landscape where Financial Institutions are continuously asking themselves how they should innovate their channels (physical branches in particular), improve the user experience, and engage with their customers more effectively, we clearly see how innovative capture platforms can quickly become one of the cornerstones of branch transformation.

This is why we firmly believe the Panini Everest range, the latest and most revolutionary breed of intelligent scanners represents a game-changer in the check processing world. Multiple ISV's and FIs are already embracing this new architecture and leveraging its potential to transform the way check capture solutions are designed and used, simplify their deployment and support, and enjoy savings, efficiency, and increased customer satisfaction.

About Panini

Founded in Turin, Italy, Panini has enabled clients to capitalize on shifts in the global payments processing market for more than seventy years. Panini offers capture solutions that enable customers to fully realize the advantages and efficiencies available with the digital transformation of the paper check, resulting in the world's largest deployed base of check capture systems, now approaching one million devices, and addressing the complete range of distributed check processing opportunities including teller capture, back-counter capture, remote deposit capture, point-of-sale capture and remittance processing.

For more information, visit: www.panini.com and connect with us on [Twitter](#) and [LinkedIn](#).

About Superior

For over 80 years, Superior has customized treasury supply solutions to meet the needs of our bank clients and their commercial customers.

We offer check printing, remote deposit capture scanner fulfillment, cash vault supplies, security token distribution, Remote Cash Capture and call center and help desk solutions.

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