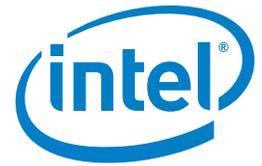


SOLUTION BRIEF

Intel® Core™ vPro™ Processor Family

Retail Banking

Bank ATM System



Reaching More Customers With Smart ATMs

Smart ATMs based on the Intel® Core™ vPro™ processor family offer new opportunities to maximize bank revenue and improve the customer experience by letting customers safely do more during each transaction.



Smart ATMs based on the Intel® Core™ vPro™ processor family help banks and other financial institutions offer features beyond individual transactions to serve today's tech-savvy customers.

ATM Trends

Since their introduction in the 1970s, automatic teller machines (ATMs) have been an important touch point between banks and their customers, providing the convenience of 24/7 self-service transactions. Smart ATMs based on the Intel® Core™ vPro™ processor family¹ help banks and other financial institutions offer features beyond individual transactions to serve today's tech-savvy customers. They also help ensure uptime and provide security for the data, the physical ATM, and the customer.

Over the past three years, a major shift has taken place in the trends of financial institutions that provide ATMs. An industry study shows that during that time, the top four trends completely changed (see Figure 1).² Furthermore, never before has any single trend stood out like current concerns about the impact of the use of mobile devices.

A 2012 survey of ATM software trends identified the growing customer use of smartphones in banking. While the ATM is increasingly viewed as one component of a seamless approach to serving customers⁴, ATMs must get smarter as smartphone use increases for banking. And as smartphone capabilities rapidly expand, ATM services must keep pace to meet the needs of tech-savvy smartphone users. This trend can be expected to continue as banks move more functionality to ATMs and expand the personalized services that they are now able to offer.⁵

ATMs Get Smarter

As banks contend with a growing number of competitors entering the financial services market, they must be able to offer the kinds of innovative experiences that engage customers, retain them, and build long-term loyalty. Along with mobile and online channels, smart ATMs can offer new opportunities to improve the customer experience—while maximizing bank revenue—by letting customers securely do more during each transaction. Banks are beginning to:

- **Customize the ATM interface.** The preferences that customers set for their online banking experience can be applied to the ATM screen, allowing banks to tailor messaging and provide a better user experience.
- **Offer an increased range of services.** In addition to deposits and cash withdrawals, customers can also use the ATM to apply for credit, donate to charity, purchase additional time on a pre-paid mobile phone, and even respond to offerings from local retailers.
- **Integrate ATMs with mobile devices and services.** New smartphone apps can help customers find no-fee ATMs when they are traveling, increasing convenience and access.
- **Implement advanced security controls.** Customers can enjoy greater peace of mind using ATMs with biometric features such as fingerprint readers and voice recognition, and security features built into the latest Intel Core vPro processors.

“The Twitter and Facebook generation has come to expect that information will come to them the way they want to see it, automatically and electronically, and the ATM experience is no different.”

–Nancy Odell, Phoenix Interactive

- **Reduce costs with remote management.** Smart ATMs can be remotely managed, saving both time and money, and creating a more efficient operation. This is especially important for financial institutions with a large network of ATMs.

Intelligent Personalization and More Services

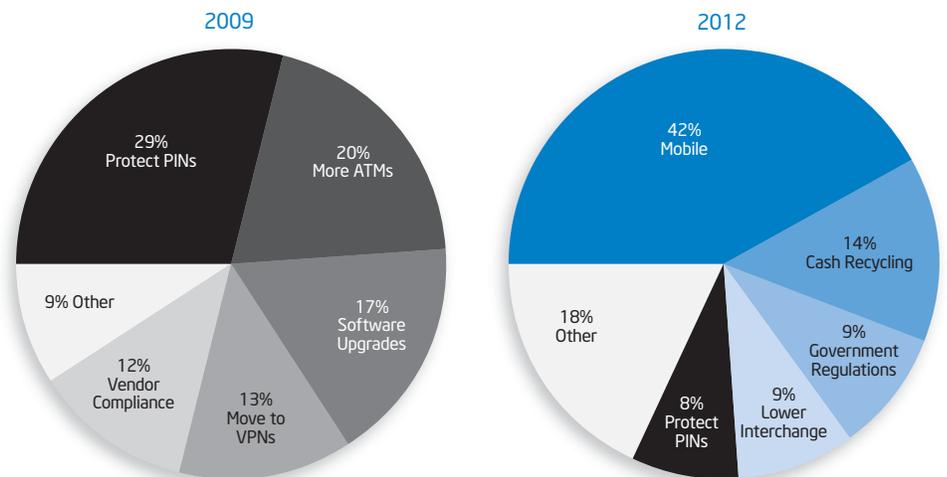
Most ATMs are traditionally one-size-fits-all: use an ATM from XYZ bank, and it will look pretty much the same as any other ATM from that bank. Those days are over, however. Today’s younger banking customers in particular are more comfortable in the online world and don’t have the same hesitation with increased functionality at the ATM.⁶

As Nancy Odell, specialist with Ontario-based Phoenix Interactive explained, “The Twitter and Facebook generation has come to expect that information will come to them the way they want to see it, automatically and electronically, and the ATM experience is no different.”⁷ Customers may want quick access to the three or four transactions they regularly use, with other transactions available in a few more steps. Customers with visual impairments may want displays with larger print or greater contrast.

Furthermore, financial institutions have an opportunity to personalize ATMs to reflect region, location, partnership, or a special purpose. An ATM on a college campus might sport the school colors and feature easy access to student loan information. One located near a stock exchange could display stock quotes along with banking information. A special ATM experience could be developed for children who are just beginning to understand the concepts of savings and financial matters. Local merchants could post discount offers. Vendors at a shopping mall’s food court could advertise daily specials.

Implementing an ATM personalization strategy is less daunting than might be expected. Software is available that makes managing this strategy operationally efficient, centrally audited, and remotely controlled without requiring management and testing of multiple applications. Not only does the ability to tailor the ATM transaction to individual customers create a more personal experience, but it also offers the bank the ability to deliver targeted messages to those customers.⁸

Figure 1. The concerns of financial institutions that provide ATMs have shifted between 2009 and 2012.³



Integration with Mobile Devices and Services

Banks and other financial institutions view the integration of ATMs with smartphones as a key in the ongoing development of the ATM channel. The growing use of smartphones will lead to cardless ATM cash withdrawals in which the smartphone owner holds up his mobile phone to the ATM to complete a transaction without the need of a card. Already, some banks integrate with smartphones by emailing an SMS-text message that includes a temporary PIN to a mobile phone owner who has either lost or forgotten his ATM card. The bank customer then is able to enter the temporary PIN at the ATM to make a cardless ATM withdrawal. Others can have a barcode sent to their smartphone to complete a cardless withdrawal.

Technology-assisted Security That Bank Customers Expect with Intel® Trusted Execution Technology

Banks have long protected ATMs with surveillance cameras, but in today's world, threats such as malware are invisible, with how-to guides available in the popular press.⁹ Having even just one ATM hacked can be painful for a bank, as related by Henry Schwarz, a financial industry professional who went through that experience.¹⁰

New ATMs based on the latest Intel Core vPro processors have access to built-in hardware-enabled security features such as Intel® Trusted Execution Technology (Intel® TXT), which protects against malware by validating the behavior of key components of the ATM at startup. Known as the "root of trust," this process allows the system to quickly assess whether any attempts have been made to alter or tamper with the device.

According to "ATM Future Trends Report 2012," ATMs are now worth more to criminals for the card data they contain than for the cash they hold. In a 2012 report on ATM fraud,¹¹ the ATM Industry Association found that nearly 94 percent of respondents thought that security best practices were essential

or very important, but fewer than 14 percent of respondents claimed to adhere to them all of the time. This clearly gives smart ATMs an opportunity to help financial institutions in their quest toward security best practices.

Even the software that is used to manage ATMs has security aspects that must be managed. One provider of business transaction management software for the financial services and payments industry said, "We can actually pick up the credit card number in transactions. And yes, it's a great feature. But with great features comes great responsibility. Make hardware encryption a mandatory check box when it comes to investing in your transaction-based monitoring tools."¹²

Remote Management

Financial institutions operating a large number of ATMs find that management costs and time can be prohibitively expensive and inefficient. Since downtime causes the company to lose customers, prompt error handling and recovery are essential.

Smart ATMs based on the latest Intel Core vPro processors can manage thousands of ATMs simultaneously. ATM breakdowns can be monitored and resolved immediately, minimizing customer inconvenience, preventing losses due to downtime, and eliminating technician travel time and costs in many cases.

The benefits of remote management include:

- **Cost savings.** Remote access capabilities provide for greater efficiency and return on a relatively modest investment.
- **Remote diagnostics.** Even if a service call eventually has to be dispatched, the technician knows what to fix, minimizing service call time and cost.
- **Remote powering.** A simple remote power down and power up cycle may solve a firmware problem with an ATM, saving the time and expense of a service call.



Smart ATMs Powered by Intel® Technology

Smart ATMs based on the latest Intel Core vPro processors provide the high performance needed to deliver features that support enhanced services such as digital marketing campaigns. These ATMs feature:

- **Power to drive innovative displays.** Multiple touch-screen displays in a single ATM can use vibrant color and video capability to deliver marketing messages based on how the customer is engaging with the ATM.
- **Remote management.** Intel® vPro™ technology helps IT technicians to remotely manage ATMs. This can drastically reduce management costs, with fewer visits by IT staff and less downtime for upgrades and patches.
- **Performance for the future.** Intel® technology-based ATMs use open architecture, which will allow deployment of new features in the future without the need to invest in additional hardware. Smart ATMs will soon include biometric security, statistical business intelligence, and video chat with bank staff.
- **An Anonymous Viewer Analytics (AVA)-ready system.** Marketing messages can be targeted based on who is using the ATM by adding AVA. AVA captures audience demographics to deliver targeted messaging

and collect audience impression data—without collecting any personal information about customers that would trigger privacy concerns.

AVA uses an integrated package of software components called Intel® Audience Impression Metrics Suite (Intel® AIM Suite) to accomplish this purpose. You can learn more about the Intel® AIM Suite in a video available at www.youtube.com/watch?v=5vcS1b3IGGQ or in a solution brief available for downloading at www.intel.com/content/www/us/en/embedded-developers-engineers/retail-innovations/audience-impression-metric-aim-suite.html.

Conclusion

Customers are taking personal control of their banking experiences with online account access, smartphone banking apps, and more. ATM providers are realizing significant cost savings with remote management, while taking advantage of the capabilities of smart ATMs to deliver personalized services and messages.

ATMs continue to play an important role in shaping customers' banking experience. Intel technologies provide the performance and manageability needed to power smart ATMs that can help financial institutions build market share by delivering the services and security that tech-savvy customers expect now, and in the future.

IMPROVING THE CUSTOMER EXPERIENCE WITH REMOTE ATM MANAGEMENT

Managing ATMs remotely creates significant cost savings for banks and service providers, and also delivers a better customer experience. Shinhan Bank of South Korea installed 1,500 ATMs that take advantage of the remote management capabilities of Intel® vPro™ technology. They had impressive results, showing that a small investment in technology can yield significant benefits.

43% **Reduction in ATM downtime.**
More customers were able to use the ATM, with fewer customers having to return at a later time.

33% **Reduction in service visits.**
Fewer customers had to wait to use an ATM while it was being serviced.

Read more about Shinhan Bank's experience with remotely managed ATMs:

http://communities.intel.com/servlet/JiveServlet/previewBody/4893-102-1-7791/ShinhanBank_CaseStudy_EN_0211.pdf

For more information visit: www.intel.com/go/ic or www.intel.com/FSI.

¹ Intel® vPro™ Technology is sophisticated and requires setup and activation. Availability of features and results will depend upon the setup and configuration of your hardware, software, and IT environment. To learn more, visit: www.intel.com/technology/vpro.

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⁴ Slawsky, Richard: "2012 ATM Software Trends and Analysis, 5th Edition." http://global.networkdalliance.com/downloads/white_papers/KAL_G_2012-ATM-Software-Trends-and-Analysis_To-Launch.pdf.

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⁶ Wollenhaupt, Gary: "Smart ATM Site-Planning, Preparation, Delivery, and Installation."

⁷ Slawsky, Richard: "Engaging the ATM Customer with Intelligent Personalization." www.atmmarketplace.com/whitepapers/2581/Engaging-the-ATM-Customer-with-Intelligent-Personalization.

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¹⁰ Schwarz, Henry: "Black Hatted." <http://henryschwarz.blogspot.com/2012/black-hatted.html>.

¹¹ Lee, Michael: "ATMIA releases new ATM Fraud Survey." www.atmmarketplace.com/article/196137/ATMIA-releases-new-ATM-Fraud-Survey.

¹² Borbas, Marc: "Understanding Security in Transaction-Based Monitoring Tools." www.atmmarketplace.com/blog/8645/Understanding-security-in-transaction-based-monitoring-tools?utm_source=NetWorldAlliance&utm_medium=email&utm_campaign=EMNAAMC08172012.

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