



2020 ATM & Self-service SOFTWARE TRENDS

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ATM Software



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INTRODUCTION

This year, 2020, marks the 13th edition of the ATM and Self-Service Software Trends report. And for the self-service banking segment, what a year it's been already.

The second decade of the 21st century got off to a blazing start with the end of support for Microsoft Windows 7, the operating software that supports virtually every bank-owned ATM in the world, as well as a sizeable number of non-bank-owned ATMs.

Microsoft's grand selling proposition for Windows 10 has largely been its promised security. As one [blog](#) stated:

"Windows 10 sports a built-in firewall and security scan system in addition to the usual patches and updates that come with standard Microsoft support. One of the most anticipated features, Device Guard, runs as a sidecar system alongside the main OS. The program is engineered to detect and prevent emerging threats from malware and other up-and-coming cyber threats."

Additionally, Win 10 promises greater speed, an improved interface and expanded transaction sets, with support for capabilities such as learned preferences and e-receipts.

An OS migration would be the Big News of the Year for the ATM industry in any normal year. But, 2020 has been anything but normal.

Even as banks around the globe were upgrading or replacing their ATMs to take advantage of Windows 10 and its high-tech security offerings, the world began to take note of a low-tech threat that literally would change everyday life as we knew it.

A more than usually unusual year

That threat, of course, would be the coronavirus disease, or Covid-19.

On January 14, a health official in Wuhan, China, [reported](#) that this newly discovered and potentially deadly respiratory virus appeared to be capable of human-to-human transmission.

We would soon find out just how capable.

Within weeks, the World Health Organization had declared a global pandemic, hospitals in a growing number of affected regions were being overwhelmed by critically ill patients, and one nation after another was closing its borders and closing down its economy in an effort to control the progress of an unfamiliar and often unpredictable new disease.



As of this writing, scientists are working furiously to better understand — and ultimately defeat — the virus. At the same time, consumer-facing businesses are proceeding cautiously to reopen, using digital technologies wherever possible to minimize person-to-person contact and potential transmission of Covid-19.

Win, lose ... or withdraw

For ATMs, the implications are mixed: Advanced-functionality ATMs, video teller machines and other remote teller devices — already a mainstay of branch transformation initiatives — can provide an excellent alternative to in-person, in-branch interactions with an extensive offering of features and capabilities. For one reason or another, they are sure to gain ground in a post-pandemic interaction-averse landscape.

For simple cash dispensers and other, limited-functionality devices, however, the picture is more challenging for a couple of reasons: Firstly, these machines are often located in malls, airports, hotels and retail stores, and are either inconvenient or inaccessible due to business hour limitations or outright closures.

Secondly, unfounded fears about coronavirus transmission could prompt some consumers to choose bank cards or mobile payment apps for retail payments instead of cash.

In March 2020, The Telegraph, a U.K. publication, stoked worries about the advisability of using cash in an [article](#) that quoted a representative of the World Health Organization. Immediately afterward, WHO [clarified](#) that it “did NOT [emphasis theirs] say banknotes would transmit COVID-19, nor have we issued any warnings or statements about this.”

As a follow-up, several central banks, including Bank of England, Bundesbank, Bank of Canada and the South African Reserve Bank issued [statements](#) reassuring the public. “The risk posed by handling a polymer note is no greater than touching any other common surfaces such as handrails, doorknobs or credit cards,” Bank of England advised.

It is worth noting that, while visits to ATMs declined in number with the onset of the pandemic, the quantity of cash requested per visit increased as cardholders rattled by disruption and uncertainty stockpiled cash in case of emergency. Bank of Canada [reported](#) a run on cash during the early days of the pandemic.

“Hoarding cash isn’t a surprise,” says Aravinda Korala, CEO of KAL ATM Software. People are holding cash not because they think the banks are going to have trouble, but because it’s a comfort. People are holding cash because they feel safe and comfortable having that cash.”

Adds Steve Hensley, executive vice president for global sales at KAL, “I think it’s a great story for the ATM industry that people want and need convenient, safe access to their cash.”



Much of that cash has come from government benefits programs designed to support individuals and families affected by the pandemic, not only in developed nations, but also in emerging and low-income countries, according to an International Monetary Fund [blog](#).

This has heightened the need for reliable and effective cash distribution systems of all varieties – from cash agents to [retail teller machines](#) to cash dispensers and multifunction terminals.

According to the IMF, Ecuador doubled its number of licensed cash agents within the span of just two weeks. Meanwhile, in New York City, cardholders waited in line for hours at ATMs operated by KeyBank, the sole EBT card administrator for New York state’s unemployment program.

Benefits cardholders could draw cash from other ATMs for a fee, but those transaction limits were far lower than the \$1,500 maximum allowed at KeyBank machines, according to a New York Times [report](#).

In Morocco, KAL worked with the government to develop and implement technology that allowed benefits recipients to access cash at bank ATMs using specially programmed codes, according to Korala.

The post-pandemic picture

As with consumer run on commodity products early in the pandemic, panic-driven cash stockpiling eventually subsided. With retail stores shuttered during lockdowns, normally cash-preferred consumers turned to electronic means for transactions with online shopping and delivery providers.

According to a [report](#) by the Financial Times, John Howells, chief executive of the U.K. based Link ATM network, said that many consumers who were heavy cash users had reluctantly switched to digital payments and were happy with the change and likely to make it permanent.

As yet, though, it’s purely speculation as to whether day-to-day changes precipitated by the global pandemic will persist after it has passed. We hope to be able to answer that question in the 14th edition of the ATM and Self-Service Software Trends report in 2021.

In the meantime, we’re pleased to present the results from the 2020 survey, which was conducted online during the early days of the pandemic.

In **Chapter 1**, we examine the status quo for ATM features and technologies, and check on progress made toward implementing new functionalities designed to improve ATM performance and the customer experience.

We also check in on banks’ longer-term plans for their own networks and for the ATM and self-service channel overall.

In **Chapter 2**, we turn our attention to ongoing branch transformation and rationalization trends and the challenges and opportunities these present for the ATM channel.



How are banks meeting their customers' demands for full-function ATMs that deliver on the “high tech-expectations” of a mobile-centric public? How will bank customers accept the increased use self-service systems tasked with performing scores of branch transactions? Where are banks finding cost efficiencies to justify the needed high-tech investments?

In **Chapter 3**, we take an in-depth look at recurring issues around Windows operating system upgrades and take stock of the current migration to Windows 10.

Throughout the report, we've amplified survey results and analysis with corresponding remarks from more than four dozen executives representing the banking and ATM industries. You'll find their comments at the end of each chapter, in some instances lightly edited for clarity.

We think these contributed observations and insights offer not only a global perspective on the industry but also a personal point of view on the continued importance and potential of this unique customer service channel.



SURVEY DEMOGRAPHICS

A total of 549 ATM and self-service industry members participated in this year's survey — an increase of nearly one-third (31%) from the 2019 report, and a high participation rate not seen since 2017, when the industry celebrated the 50th anniversary of the ATM's introduction.

Of this year's survey respondents, 235 (43%) represented financial institutions. This compares with 50% representing FIs in 2019, 49% in 2018 and 45% in 2017.

The remaining 57% of 2020 respondents identified as "other," a group comprised largely of ATM and self-service equipment vendors, service providers, independent ATM deployers and processors.

These non-bank providers comprised 52% of survey respondents in 2016 and 56% in 2017, but leveled out with banks in 2018 and 2019, before jumping into the majority again this year.

In a departure from precedent, Asia outpaced North America in the 2020 software survey as the region with the largest share of respondents, at 24%, compared with just 17% from North America, including both the United States and Canada.

Interestingly, Africa also represented a larger share of respondents than North America in 2020, at 19%. The continent's representation has jumped significantly since 2017, when African FIs accounted for only 6% of respondents.

North America, in third place, was followed by Europe (17%); Central and South America (9%) the Middle East (8%); Australia and Oceania (5%); and the Caribbean (1%).

Representation from Africa continued an uninterrupted incline begun in 2016, when FIs then comprised just 8% of survey results, compared with 19% this year.

Asia saw the largest increase in representation from last year to this, reversing an anomalous downturn in 2019, when the region represented just 9% of respondents. This dip had been preceded by a steady rise from 14% in 2016 to 22% in 2018.

This year, the anomaly was North America, whose representation dropped by exactly one-half, from 34% last year.

In previous studies, North America has consistently averaged 32% of responses — year after year, it has claimed the largest percentage of any participating region ... until 2020.



SURVEY DEMOGRAPHICS

Another first in 2020: North America and Europe accounted for only about one-third (34%) of respondents, compared with 57% in 2019, reversing their long-term dominance in representation in the study.

So it is that, in 2020, mature markets have been for the first time overtaken by developing regions — and decisively so. It's a trend that we will certainly be following with interest in future years' reports.

In terms of ATM fleet size, the largest fleets (2,000-plus units) won out over smaller fleets (1–200 units) in terms of representation in this year's survey, with the former comprising 33% of respondents' estates compared with 27% of the latter.

The small fleet category shrank percentage points between 2019 and 2020, while the large fleet category gained nearly 13 percentage points.

Between these two bookends of smallest and largest, ATM fleets numbering 101–500, 501–1,000 and 1,001–2,000 were fairly evenly arrayed at 16%, 12% and 12%, respectively.



CHAPTER 1

The State of Play

As mentioned in the introduction, branch transformation initiatives have driven the steady adoption of new ATM features and technologies over the past several years.

These introductions have helped banks reduce costs at the teller window even as they have increased customer satisfaction by allowing users to conduct their everyday banking business when and how they please.

Progress report: 2018–2020

To see what progress banks are making toward a greater selection of self-service features and technologies, we compared responses by bank executives to similar questions asked this year (“Which of the following ATM features and technologies do you already support?”) and in 2018 (“Which features are supported today?”)

In 2020, the top 10 responses from bank executives included:

1. Cardless transactions — i.e., single-use PIN for emergency cash (51%)
2. Cash recycling (48%)
3. Teller functionality at ATMs or kiosks (47%)
4. E-receipts (40%)
5. Targeted marketing (35%)
6. Contactless transactions (33%)
7. Customer preferences (30%)
8. Customer-selected note denomination (28%)
9. Biometric authentication (26%)
10. TPM chip for security (22%)



By comparison, the percentage (and percentage point increase in 2020) of banks whose ATMs offered these capabilities in 2018 is as follows:

1. Cardless transactions — i.e., single-use PIN for emergency cash (41%; +10%)
2. Cash recycling (37%; +11%)
3. Teller functionality at ATMs or kiosks (28%; +19%)
4. E-receipts (29%; +11%)
5. Targeted marketing (31%; +4%)
6. Customer preferences (not listed in 2018; n/a)
7. Contactless transactions (19%; +14%)
8. Customer-selected note denomination (19%; +9%)
9. Biometric authentication (11%; +15%)
10. TPM chip for security (not listed in 2018; n/a)

Most notable was the 19% increase from 2018 to 2020 in teller functionality at ATMs and kiosks. It is no coincidence that this increase occurred as banks were closing branches at a record pace at the end of the last decade.

According to S&P Global Market Intelligence, U.S. banks closed 1,947 branches in 2018, on top of 1,919 closures in 2017. Only one state — South Dakota — saw a net increase in numbers in 2018, gaining exactly *one* bank branch.

Retail Banker International estimated that U.S. branch closures continued at the rate of 4% in 2019. Meanwhile, other developed nations were also rationalizing their networks. Between 2017 and 2018, EU banks closed approximately 9,000 excess branches, according to a report by Statista.

The U.S. still maintains one of the highest rates of branches per capita in the developed world, leaving room for future reductions. However, a 2020 study by Jones Lang LaSalle (JLL), a provider of real estate services, forecast that the rate of closures would moderate to just 2% per year.

That said, the Q1 study from JLL could not foresee the impact of Covid-19 ... and more recent coverage suggests that it could be enormous.

According to a separate report by S&P Global Market Intelligence, Rob Aulebach, a former retail distribution executive with Bank of America Corp., predicted that 30% of U.S. branches that were closed due to Covid-19 might not reopen. It's a stunning number with massive implications for the American banking industry.



Beyond U.S. shores, as well, the fallout could be especially consequential for self-service banking, as one executive from a major European bank, said, “ATM channel enhancement has been recognized as a way to both improve staff efficiency in branches and provide an alternative in the case of branches closing. The Covid-19 outbreak seemed to bring this effort into focus even more.”

Contactless transactions and e-receipts, both of which bank executives named as current capabilities, also saw double-digit gains in availability from 2018 and 2020 — and also are likely to be an even greater focus in a Covid-19 environment.

The same could be true for pre-staged transactions and check-cashing — a typical driver of teller-customer interactions in the USA. Mobile pre-staging of self-service transactions was the capability most often cited as a “must” by both bank and non-bank executives in follow-up interviews to the survey.

Additionally, cash replenishment, another activity that is often dependent on people travelling to an ATM, could also be minimized by cash recycling by the ATM.

The non-bank view

We also compared survey responses of non-bank executives from 2018 and 2020, and found that while response rates varied, the same features and technologies were mostly top-of-mind.

In 2020, the top 10 responses from non-bank executives included:

1. Cardless transactions — i.e., single-use PIN for emergency cash (54%)
2. Cash recycling (54%)
3. Teller functionality at ATM/kiosk (48%)
4. E-receipts (39%)
5. Contactless transactions (37%)
6. Customer preferences (35%)
7. Customer-selected note denomination (32%)
8. Prestaged transactions via mobile phone (30%)
9. Targeted marketing (30%)
10. Cashing checks (27%)



For the non-bank group, the percentage in 2018 (and the percentage point increase in 2020) is as follows:

1. Cardless transactions — i.e., single-use PIN for emergency cash (48%; +6%)
2. Cash recycling (46%; +8%)
3. Teller functionality at ATM/kiosk (36%; +12%)
4. Customer-selected note denomination (32%; +14%)
5. Pre-staged transactions via mobile phone (23%; +7%)
6. E-receipts (23%; +16%)
7. Contactless transactions (18%; +14%)
8. Customer preferences (not listed in 2018; n/a)
9. Targeted marketing (21%; +9%)
10. Cashing checks (not listed in 2018; n/a)

Playing catch-up

Bank executives whose institutions have not yet implemented the top features and technologies said that they plan to do so in the not-too-distant future:

Pre-staged transactions via mobile phone (50%)

1. Contactless transactions (49%)
2. Cardless transactions — i.e., single-use PIN for emergency cash (47%)
3. Biometric authentication (46%)
4. E-receipts (45%)
5. Cash recycling (39%)
6. Targeted marketing (35%)
7. Teller functionality at ATM or kiosk (34%)
8. Customer preferences (31%)
9. Cashing checks (29%)



For non-bank executives, the list of priorities was essentially the same, though differently ordered:

1. Biometric authentication (62%)
2. Pre-staged transactions via mobile phone (55%)
3. Contactless transactions (53%)
4. Cardless transactions — i.e., single-use PIN for emergency cash (51%)
5. E-receipts (49%)
6. Teller functionality at ATM or kiosk (44%)
7. Cash recycling (44%)
8. Remote teller assist (42%)
9. Targeted marketing (42%)
10. Customer-selected note denomination (34%)

For the past several years of this report, the direction at the branch has been clear: Move uncomplicated everyday teller transactions to the self-service channel in the interests of economy and efficiency for the bank and of convenience and control for the consumer.

Responses to the 2020 survey indicate that this strategy is not merely continuing, but in fact, is gaining momentum over time.

And, in a year dominated by concerns about a global pandemic, it is also clear that this same strategy can serve not only the bank's objectives for branch rationalization and transformation, but also the consumer's ongoing needs for everyday access, convenience and peace of mind.

Interview insights

INTERVIEW QUESTION: "Which new ATM features and technologies do you think you are interested in supporting over the next few years?"

Here are some of the responses:

Mobile apps are increasingly widespread and are developing functions that we couldn't even imagine years ago. The future of the ATM will depend on how well it can adapt to this trend.

– An executive from a major systems and security company in Spain



For the last few years, ATM channel enhancement and the creation of the self-service area was in focus on the group level, in line with global ATM trends:

- *Renewal of ATM networks with focus on cash-in functionalities*
- *Dedicated cash corner self-service areas*
- *Campaigns aimed at boosting ATM use and fostering customer independence for transactions*

The majority of banks either have introduced or will introduce “cash-in” / “cash-acceptance” in 2020, with recycling as a next step, with the first bank to introduce recycling in 2020.

Also, banks are focused on boosting revenues with [direct currency conversion] and surcharge being introduced by multiple banks.

– An executive with a major European bank

Features that enable contactless cash withdrawal (i.e., pre-staged transactions) are the immediate need of the hour. There is a need for technologies that can deliver contextual and personalized experiences during customer interactions with the ATM.

– Manohar Bhoi, Vice President, Electronic Payment & Services Pvt. Ltd.


We see the following as key topics in ATM evolution:

- *CRM integration in order to transform the ATM into a key phygital touchpoint to manage branch transformation and to foster the triggering of a marketing pitch to bank customers and prospects.*
- *Enhanced interaction with mobile devices in order to streamline use (e.g., mobile device for managing off-us transactions) and the purchasing process via prestaged transactions.*
- *Cross-bank interoperability enhancement in order to boost the benefits from shared services other than withdrawals.*

– Igor Borceto, Head of Marketing ATM & Self Banking, Nexi Payments S.p.A.

Pre-staged transactions are interesting from the perspective that they can create a better user experience for our customers and reduce line lengths at the physical ATM. Customer testing and surveying has shown very little demand for e-receipts.

– Mike Cripps, Service Owner ATM & Digital Experiences / Everyday Banking, Westpac New Zealand



Although the importance of cash gradually decreases, it still continues to be needed. In line with the bank's reduction of branches and redirection of customers to ATMs, use has increased considerably.

This has led to an increase in queues on ATMs. Nowadays, as with any situation, customers are impatient about waiting; they want to complete their task quickly and smoothly.

Finally, customers want to remove additional processes — such as using cards or passwords — from their daily life. Because of all this, biometric access, pre-staged transactions with mobile and QR-based transactions will be important over the next few years.

– Ergün, Ercüment, Vice President of ATM Operations, ING Bank Turkey

It would be interesting to see more banking services supported by networks so that cardholders can get similar functionalities at off-us ATMs to those at on-us ATMs — specifically, cash deposits, contactless and pre-staged transactions, e-receipts and check cashing.

– Alicia Moore, Head of Global ATM Partnerships, Visa

In light of the recent Covid-19 crisis, we view the expansion of pre-staged transactions with mobile wallet applications as a top priority for this industry.

– Khaled Emam, Senior Product Development Manager, Bank Aljazira

The internet and the networks have become essential for operations at companies and the relevant insights gathered from interconnected systems are key drivers for decision-making.

I believe that IoT solutions will experience a boom and gain more importance in the coming years.

– Maria Fernanda Loreto Manriquez, Product Manager, Telmex

A better look and feel in screens and flow, especially more active intelligence on the ATM for cash flow management at a cassette level.

Technically, the ATMs must have more operative capabilities to decrease dependencies from the legacy or centralized systems and have an efficient and integral multivendor solution.

Additionally, they need to interact with a CRM solution to target products and services according a customer's profile.

Focus on exclusive offers in the digital channel to promote its use.

– Jose Alejandro Ortega, Director of Electronic Operations, Bancoppel S.A.



INTERVIEW QUESTION: “In what ways should the ATM channel be improved over the next few years?”

Here are some of the responses:

The ATM channel is facing increased costs (regulatory and operational), and increased risks owing to fraud. Therefore, in the next few years, greater importance will be given to enhancing security, reducing overall costs, as well as improving the user interface to give a differentiated experience.

– Puneet Kapoor, President of Products, Alternate Channels and Customer Experience Delivery, Kotak Mahindra Bank

In my opinion, although we have not seen a sharp decrease in cash withdrawal transactions during the pre Covid-19 period, the impact of Covid-19 might drive more migration over to e-payments and decrease the use of cash, which indirectly decreases the overall cash withdrawal transaction volume.

As such, I think it would be prudent for banks and IADs to start planning for lower cost of operations by partnering with trusted solution providers and even forge an alliance with friendly competitors to pool their resources.

Also, I believe security remains an important area for the ATM channel which requires constant focus and review of its effectiveness.

– Marcus Lim, Head of Shared ATM Network & Self-service Terminals, Payments Network Malaysia Sdn. Bhd.

Improved customer interface and new features should be the target. Speed of transactions is currently more than adequate; a contactless type of transaction is performed in 20 seconds. Lower cost of operations and more frequent updates should also be a target. But ... new features and cost effective and lucrative services would be more and more interesting for banks as acquirers.

– A Project Manager from a major European bank

Optimize the transaction timing to avoid long lines waiting for the next customer to use the ATM and to improve the security measures due to the different vectors of attacks that happen on a daily basis.

– Victor Manuel Muñoz, Banco Multiva SA



There can be big differences region to region ... I think customer interface should be the focus, as visuals presented on most of the ATMs look as they did at the beginning of the millennium, compared to development of web presentations during past years. And there are always things to improve at a security level, even when you are doing your best.

– David Novotný, Project Management Specialist, Česká spořitelna

First of all, operations costs have to be decreased. Then comes transaction speeds ... For customer satisfaction, user experience is also one of the main aspects. Serving customers with the same transaction flow as internet and mobile banking is the most customer-friendly approach.

– Tolga Özdemir, Project Manager, ZiraatTeknoloji

In the Australian market specifically, the focus is on reduced cost of operations, which is leading the financial industry to outsource ATMs and services.

In addition is the ability to deploy additional features and make customer interface and interaction more attractive.

– Pablo Santa Teresa, Head of Project Management Office, Prosegur Australia

The number of ATMs will continue to increase instead of the number of branch offices, hence the bank must guarantee the availability of sustainable services with alternatives for branch services. Secure transactions at ATMs must be improved — including the user interface and user experience for user convenience — while also implementing cost-effective and efficient operations.

– Marcus. R. Winata, Head of Electronic Banking, PT Bank Central Asia Tbk



CHAPTER 2

Full-function ATMs: A better branch alternative

“Given recent branch closures, what should banks do with the ATM channel to provide alternatives for branch services?”

When this question was drafted for the annual software trends survey early in 2020, the intended reference was not Covid-19. But it could have been.

For years to come, bank and ATM industry executives will point to the 2020 pandemic as proof of the human capacity to adopt “the new” and the speed at which such change can be accomplished when workable options are on the table.

In recent months, an inanimate virus has spurred consumer uptake of digital banking channels with an urgency that years’ worth of persuasively framed marketing messages couldn’t muster.

As the pandemic forced banks to close up shop along with every other consumer-facing business, the digital banking question was simply a matter of push coming to shove.

Consider these statistics from S&P Global regarding the impact to banks in the United States:

- During the month of April, seniors and boomers comprised a whopping 23% of first-time digital banking users at Bank of America.
- During March, South State Corp. logged a 90% year-over-year increase in digital deposits.
- M&T Bank Corp. experienced a 40% increase in digital banking enrollment compared with the 60-day period prior to the pandemic.
- Starting in mid-March, Citizens Financial Group Inc. charted a year-over-year increase of 25% in mobile and digital logins, corresponding with a 20% decrease in branch transactions.

In Mexico, Citi saw an increase of 116% in mobile app downloads from February to April and an 80% increase in mobile app logins in March, Forbes [reported](#). An executive at ING



told the publication that the increase in digital banking during the epidemic could ultimately reduce the bank’s need for physical branches across Europe.

Digital-only banks also have seen a surge in users as a result of the pandemic, Forbes found. South America-based Nubank reported a sudden unexpected upswing in enrollment among customers over the age of 60, an age group usually thought of as unattainable for digital upstarts. In May alone, Nubank signed up more than 300 customers over the age of 90.

According to Manohar Bhoi, vice president of India-based Electronic Payment & Services Pvt. Ltd., the forced retrenchment of consumer banking habits over the past months provides ATM operators with an opportunity to better understand and provide what consumers ultimately are looking for in “branch in a box” style self-service.

“Banks should analyze the top five reasons why customers visit branches and explore how those can be enabled at ATMs, fully or partially,” Bhoi said.

Mike Cripps, an executive at Westpac New Zealand, also favors that approach. “Look at what other transactions can be displaced from over the counter, especially focusing on non-cash interactions,” he said. “The recent pandemic has shown, at least in the short term, greater adoption of digital channels and less reliance on cash. It will be interesting to see if this results in speeding up the move to a cashless society.”

It’s a question on the mind of most industry watchers as the pandemic stretches on. However, the simple fact is that old cash-preferred habits die hard. A [study](#) by McKinsey found that as coronavirus-affected countries began to reopen in May, cash use began to bounce back in Italy, Spain and the U.S., countries where cash use is historically strong.

The value-added answer

For respondents to our ATM Software Trends survey and questionnaire, the question is not whether ATMs will remain an essential cash distribution channel, but rather, why this existing network of banking touch points is not doing a great deal more to add value to both the institution and its customers, pandemic or no pandemic.

“Banks and consumers are seeing the value that ATMs bring as more transactions have moved to this self-service channel due to either branch closures or consumers’ desire to conduct their transactions outside of a branch,” says Tiffini Bloniarz, a senior manager in media relations at Diebold Nixdorf.

She added that today’s ATMs — far from simply serving utilitarian, transactional purposes — can, in fact, become relationship-building tools for banks that opt to add capabilities such as two-way video, account opening, instant card issuing, check book printing and other multifunction technologies.



“It allows FIs to close branch locations while still servicing customers, enhance the drive-up experience, allow a cost-effective way to test new markets, extend branch service hours and allow for face-to-face contact when the branch is unexpectedly closed,” Bloniarz says.

Which gets back to the question, “*Given recent branch closures, what **should** banks do with the ATM channel to provide alternatives for branch services?*” In both the bank (54%) and non-bank (65%) survey groups, the No. 1 response was, “*Replace cash-dispensing ATMs with full-function ATMs with more capabilities.*”

The No. 2 and No. 3 answers from bank respondents were that they were expanding their ATM networks (45%) and adding remote teller functionality (36%). Non-bank respondents thought they were more likely to add remote teller functionality (42%) than expand their networks (31%).

Bank respondents also said they were considering additional strategies for the delivery of cash, such as encouraging retailers to offer “cash back” at the point of sale (34%) and promoting low-cost alternatives to ATMs, such as kiosks that could dispense vouchers to be redeemed for cash at the point of sale (18%).

Non-bank respondents were equally likely to answer that banks were promoting cash-back strategies (34%) and somewhat more likely to say that banks were considering voucher-dispensing kiosks (26%).

Nearly one-third (29%) of bank respondents and just over one-quarter of non-bank respondents (26%) said that institutions were content with their current cash distribution through ATMs and branch channels and were not pursuing other strategies.

The bottom line is ... the bottom line

One of the critical challenges of introducing additional branch transactions at the ATM channel is to avoid introducing undue expense in the process.

Some added cost is inevitable, but to help offset the cost of added complexity — and simply to make the most of their investment in an ATM estate — operators are looking for opportunities to drive additional cost efficiencies within their networks.

Martin Chlumský, an executive with **Česká** spořitelna, the Czech Republic’s largest bank, described the quest for cost efficiency as a jigsaw puzzle.

“There are many ‘pieces’ targeting or supporting efficiency in different areas,” he said, “... implementation of recycling; Windows 10 upgrade with a reasonable ATM lifecycle model; an appropriate set of provided ATM features; test and deployment automation; etc.”



Halil Küt, ATM application development manager at Istanbul, Turkey-based Yapı Kredi Teknoloji, believes that predictive maintenance programs hold the key to cost efficiency.

“The result of predictive maintenance will be increased availability of ATM machines,” he explained. “Less faulty operation means less technician and CIT intervention and less cost.”

Another means of increasing cost efficiency is to boost fee generation or product sales through value-added services such as direct currency conversion or personalized marketing of relevant services to the customer using the machine.

Banks surveyed said they were working to improve overall maintenance operations (58%); improve CIT services, including cash forecasting and replenishment schedules (49%); improve settlement and reconciliation processes (39%); outsource management to third parties (35%); and migrate transactions to lower-cost channels, where possible (35%).

A perpetual pain point

An additional pathway to cost savings that was not included in the survey responses, but that surfaced frequently in interviews was the desire to reduce the costs associated with OS and software upgrades, an especially keen pain point this year due to the migration from Windows 7 to Windows 10.

Marcus Lim, head of shared ATM network and self-service terminals at Payments Network Malaysia Sdn. Bhd., said that in his personal opinion, one serious impediment to cost efficiency is simply the co-dependent relationship between operating systems and hardware components.

“Decoupling the dependency on the operating system obsolescence with the hardware is key to avoid or prolong the replacement cycle which is costly and brings no real business benefits,” he said.

For most ATM channel managers, decoupling — and the years it can add to the machine replacement cycle — is also key to securing a top-level buy-in for the deployment of expensive full-function ATMs meant to stand in for a downsized branch network.

Interview insights

INTERVIEW QUESTION: “Given recent branch closures, what should banks do with the ATM channel to provide alternatives for branch services?”

Here are some of the responses:

Convert the ATM into a remote office position where, through an agent, you can complement the vast majority of operations that a client could do in the office.

– An executive from a major bank in Spain



Some banks have started using kiosks and other modern devices, to enable customers to open a new bank account, capturing KYC data using a scanner, signature and camera, and providing instant card dispense or card replacement.

– Hendra Boen, Product & Solution Consultant, PT Abhimata Persada

It is easier with mobile banking than with the ATM channel to provide alternatives for branch services.

– Chen, Guodong, Deputy GM of R&D Center, Zijin Fulcrum Technology Co. Ltd.

At this point, solutions such as video teller machines will come to the fore. Customers still want to contact someone live when they need it.

– Ercüment Ergün, Vice President of Merchant & POS, ATM Operations, ING Bank Turkey

Banks should leverage the ATM channel to deliver branch services with remote teller assist. The traditional brick and mortar branch can be transformed into a digital branch with the ATM and yet human touch is not lost.

– Ricky Fang, Impromptu Solutions SDN BHD

Converting standalone ATM areas to smart banking (e-Lobbies) will help provide a greater number of transactional services to customers and will serve as an alternative to branches. In addition, such e-Lobbies are available to customers 24x7.

– Puneet Kapoor, President of Products, Alternate Channels & Customer Experience Delivery, Kotak Mahindra Bank

Smart and economical withdrawal / deposit points (smart boxes with mobile/internet interface for tap-and-cash or tap-and-deposit). Agreements with retailers that improve the overall cash supply chain and reduce transport due to surplus or lack of cash.

– Luciano Hertzriken Maggi, Director of Operational Excellence and Service Level Control, Santander España



There are a number of options available to the banks for the provision of branch services through the ATM channel at other locations. These can be close and convenient to the customer, such as shopping malls or main streets, and can include most of the more common transactions.

A combination of ATM features with online banking technology can deliver a powerful set of transactions available to their customers.

– Pablo Santa Teresa, Head of Project Management Office, Prosegur Australia

ATMs should not change their purpose. More alternatives can be offered via Home Banking.

– Lucian Serban-Negoiu, Software Developer, ING Bank Romania

In China, with the widespread use of mobile payment, the non-cash transactions in branches can take place with Mobile App, E-banking, etc. I think the ATM channel's function is mainly to provide alternatives for branch services on cash transactions.

– Erqing Sun, General Manager of IT Department, Bank of Shizuishan Co. Ltd.


Gradually, the bank has begun to develop alternatives for branch services to become available for self-service transaction at ATMs, such as opening accounts, replacement and activation of the ATM cards, foreign exchange and many more.

– Martinus R. Winata, Head of Electronic Banking, PT Bank Central Asia Tbk

INTERVIEW QUESTION: “What should be done to make the ATM channel as cost efficient as possible?”

Limit or fight against programmed obsolescence (hardware and software); initiate ATM sharing or mutualization between banks

– An executive with a major European payments processor



Banks should clearly define the role of the ATM within their retail organization. What is the purpose? What kind of functionality does their customer base expect? How are they going to make it attractive to their customers through marketing? If you're going to make the ATM channel cost efficient, the ATMs need to be able to handle a lot of different transactions and need to be attractive to the customer so they utilize the self-service technology rather than going to a traditional teller."

– Tiffini Bloniarz, Senior Manager of Media Relations, Diebold Nixdorf

I believe the adoption of multivendor ATM software and support for Hypervisor will be able to make the ATM channel more cost effective as it will prevent enforced upgrade due to Windows OS upgrade and it will be less effort to make changes in supporting new ATM features which usually require special skillsets to enhance the ATM host.

– Ricky Fang, Impromptu Solutions SDN BHD

It depends on how the market and client behavior change after the Covid-19 era, but it will be for sure the cash recycling ... that is the business secret.

– David Novotný, Project Management Specialist, Česká spořitelna

Offer more digital transactions (cashless), like account transfers and local and international remittances.

Accept other banks' cash deposits, bill payments, credit payments.

– Jose Alejandro Ortega, Director of Electronic Operations, Bancoppel S.A

ATMs should be used for only money withdrawal and deposit. They should be integrated with mobile. No screen, no card ATMs should be more common.

– Özkan Özdemir, Vice President of IT Digital Banking Applications, Akbank T.A.Ş.



In my opinion, it is possible to achieve profitability by increasing profitability, i.e. the availability of software that allows you to quickly integrate new features, thereby increasing the “flow of other customers”; the availability of high-quality and accurate monitoring, with the ability to respond quickly; the presence of a remote technical assistant or module for remote updates, including the OS.

**– Oleg Semenenko, ATM Network Monitoring and Development, Team Lead,
TBC Bank, Georgia**



CHAPTER 3

Microsoft Windows 10: A “Win” win?

An ATM operating system upgrade. For a bank’s IT department, it’s the motherboard of all headaches.

As explained in a previous edition of this report:

With each OS upgrade, banks must engage in an expensive process of assessing the PC capacity of each of their ATMs; determining whether a machine can be upgraded with a new motherboard to support the new OS; deciding whether a machine should be upgraded or junked; replacing obsolete ATMs; updating all software applications to run on the new OS; testing, testing and testing again to ensure that everything plays nicely together; and, finally, installing the new OS and apps across the fleet and praying that nothing goes wrong and customers continue to experience seamless, convenient ATM service.

And always, it seems that as soon as the job is finished, it’s time to “rinse and repeat.” No surprise, then, that “continuing on Windows 7 as long as possible,” was the most often repeated response among executives interviewed for this 2020 report.

‘A gradual migration’

Many banks find themselves in a position similar to that described by Daniel Hula of UniCredit CZ, who said that the bank will make a “gradual migration” to Windows 10.

“The reason for the gradual migration is the need to replace more than 50% of the ATMs (obsolete hardware) and a hardware upgrade is required for the others,” he explained.

Others, like Astrid Martinez of Colombia-based Banco Davivienda S.A., said that they had either started or completed the process of upgrading all hardware capable of supporting Windows 10. But she added, “After, we are still evaluating the replacement of old hardware.”

In fact, more than half of the banks participating in this year’s software trends study have yet to migrate from Windows 7 to Windows 10. They said either that they were continuing to run Windows 7 and contracting with Microsoft for extended support for the older OS (16%) or were planning to migrate to Windows 10 “in the relatively near future” (40%).



According to Igor Borceto, Head of Marketing ATM & Self Banking, Nexi Payments S.p.A., the “vast majority” of Italy’s ATM fleet is not yet Windows 10-ready.

“For this reason, we expect temporary solutions will be put in place by banks to postpone as much as possible the fleet upgrade to Windows 10 standards,” he said. “This is because of the exceptional costs required to upgrade the hardware to Windows 10 requirements. Potentially W10 could cause shrinking of the installed base, calling for network optimization.”

Another Windows 10-related comment arising more frequently in this year’s interviews was this one from Martinus R. Winata, Head of Electronic Banking, PT Bank Central Asia Tbk: “We are currently in the process of migrating to Windows 10, while starting to look at other operating systems for ATMs.”

Other operating systems?

Indeed, 11% of survey respondents said they were considering “alternative solutions.” However, as Aravinda Korala, CEO of KAL ATM Software explains, those solutions comprise a very small and somewhat rarified universe — for one very sound and simple reason: “Across the board, a bank’s IT department wants the same operating system on their ATMs that they use on the desktops supporting them.”

For operational efficiency, they want the same version of the OS across the board, as well. And for maximum security, they want it to be the latest, fully supported version.

The inescapable ubiquity of Microsoft is what makes it so useful across an entire banking sector ... and what makes other options so unsatisfactory by comparison.

It runs everything and everything runs it, which is the ruling calculus for most IT departments and the thing that makes the notion of migrating to an open source option like Linux appealing.

However, the idea can be a hard sell, as Xiong Wang of Bank of Nanjing Co. Ltd. discovered. “We have discussed changing to Linux, but are still waiting,” he said. The bank has “no clear plan on any change or upgrade for now; we are still on Windows XP and Windows 7.”

In the best of all possible worlds, a bank ATM operator would be able to merge the flexibility and economy of a Linux-based system with the category-killing dominance of Microsoft Windows.

It was this notion that inspired KAL to partner with Red Hat, an IBM-owned provider of open source software products for enterprise, to develop an out-of-the box solution — a Linux-based hypervisor that sits comfortably on an older PC and runs a Windows 10 ATM software stack in a sandbox virtual operating environment ... without a hardware upgrade.



The “no-upgrade” upgrade

In a press release dated Jan. 14, KAL announced that the company had worked successfully with the **Česká spořitelna**, the Czech Republic’s largest bank, to deploy the first ATM running Windows 10 on a Linux Hypervisor in a production environment.

As described in the release, KAL’s Kalignite Hypervisor solution “uses OS-virtualization technology to solve the long-standing problem of enforced ATM hardware upgrades and decouples the ATM PC-core from the ATM operating system so that software drivers that are unsupported under new Windows operating system versions can be supported by the Linux drivers instead.”

The bank is now using Windows 10 across its entire ATM estate — including older machines with motherboards no longer supported by Microsoft. Hypervisor does the work instead, running peripherals seamlessly and with virtually no loss of speed.

What’s more, Kalignite Hypervisor could extend the life of these ATM not only through the current migration to Windows 10, but also through all subsequent Microsoft migrations.

This benefit could assume critical importance for banks contemplating the budgetary future of their ATM channel. Because although the Windows 10 label will stick indefinitely, the OS itself will update every three years, or possibly more frequently — as opposed to six years for the last version. As a result, the need for hardware upgrades will only accelerate for any bank that aims to keep up with OS versions.

That said, it should be noted that each LTSC release of Windows 10 comes with the promise of 10 years of bug fixes and security patches from Microsoft, ostensibly extending the life of that version from three years to 10.

But ... it also should be noted that this support is useful only to banks willing to see their ATM channel frozen in time for a decade and willing to run multiple versions of LTSCs as new LTSCs become available and new ATM are purchased. Any bank planning an ATM refresh within a 10-year span must take into account that the latest hardware will require a current version of Win 10 in order to function.

A fast-forward for forward-thinking FIs

Even the condensed three-year LTSC pace represents a slow-roll for Microsoft. The company’s preferred timetable is its Semi-Annual Channel, which every spring and fall rolls out required updates for desktop systems. LTSCs are a somewhat reluctant concession offered to users of embedded systems.

“For little kind of islands of stability like ATMs and MRI machines and nuclear power stations and those kinds of things, Microsoft is saying, “All right; you don’t have to update every six months. You can go every three years.’ So those customers can get LTSCs,” Korala explains.



However, he says, Microsoft is encouraging even these enterprises to consider the Semi-Annual Channel for the faster pace of innovation it supports.

According to a Microsoft [blog](#), the channel has become “the predominant choice” of enterprise clients for reasons that include:

- Chipset and processor support.
- New peripheral support.
- Application support.
- Best security.
- Best stability.
- Greatest hardware choice.

For a bank’s IT department, the SAC also keeps all systems on the same page, with all users receiving the same release and getting functionality updates that are both frequent and significant.

Given this situation, Korala says, “My feeling is that most of the forward-looking banks are going to go with these SACs and are going to be changing every six months. Of course, some will think of ATMs as an area where they do an upgrade and then forget about it for the next 10 years, and they might be happy with LTSCs. But there are fewer and fewer of those banks doing that, saying that they’re not interested in the ATM channel.”

‘The Big Deal’

A hypervisor solution that decouples hardware drivers from software puts all of the decisions — fleet optimization, OS update frequency, hardware refresh cycles, functionality introduction timelines and, most importantly, ATM channel budgeting — firmly in the hands of the bank.

“The big deal is that you choose when to upgrade your hardware based on the performance of the hardware,” Hensley says. “It’s not because Microsoft says you have to because they’re not going to support it anymore. So maybe the machine is starting to run slower and you say, ‘OK, it’s at the lower 10% of our estate, and we want to replace those because of performance.’”

As a fully agnostic multivendor solution, Kalignite Hypervisor doesn’t care whose ATMs the bank is running or what’s in their software stack, he adds. “The original thought was for our customers that run KAL ATM software. But the more we talk about it, it’s an idea that benefits the whole industry, so we’ve opened it up to everyone.”



According to Korala, hypervisor integration takes approximately two months from start to finish.

“It’s potentially quite quick,” he says. “What we do is to pick up everything they have in the software stack — we don’t change it at all — and then we put this hypervisor underneath of it. It’s like lifting furniture and putting a mat underneath of it — and that’s it. It just works with the existing technology.”

The cost of hypervisor per ATM per year is about \$120 — less than 1% of a bank ATMs estimated annual operating cost. And then there’s the potential savings in hardware replacement, amounting to \$2,500 for a new ATM motherboard or \$40,000 or more for a new machine.

What is beyond calculation is the value added for those forward-thinking banks wanting to maintain maximum flexibility in their ATM fleet in order to respond on a dime to customer needs, whether driven by the rapid pace of innovation we’ve all come to expect ... or by a sudden, unpredictable and life-altering event like a global pandemic.

Interview insights

INTERVIEW QUESTION: “Regarding upgrading the ATM fleet to Windows 10, what are banks doing in your market?”

Here are some of the responses:

OS migration is inevitable due to security and support issues. It has always happened and unless there is any major change in the financial standard, we will always have this dependency.


– An executive from a major systems and security company in Spain

Windows 10 implementation is in process for our banks with the first bank planning to implement it for some ATM-type devices in Q3 this year, and others to follow. As it will be introduced gradually, Windows 7 will remain on some devices mid-term. Also, alternative solutions may be under consideration in the future.

– An executive from a major European bank

Windows 7 as long as possible, but suppliers must take some of the responsibility — they sold Windows 7 up to 2020.why

– David Ball, Managing Director, EuroCash ATMs



Most of our customers have decided to upgrade and have either moved by now or have an ongoing project for the move. There are some who have ATMs they can't upgrade and are just waiting for their hardware to depreciate in value and fully replace them.

– Tiffini Bloniarz, Senior Manager of Media Relations, Diebold Nixdorf

Clients are continuing on Windows 7 for as long as possible, but taking steps to move to Windows 10.

– Vladut Mihai Costin, Senior Software Developer, ING Bank Romania

Each bank has a different view and pressing points in this matter, we may not know exactly what every single bank has decided to do but we think the following factors control the course of actions for individual banks:

- 1. The number and age of the terminals.*
- 2. Whether this bank has single vendor or multiple vendors.*
- 3. The tendency of business management to accept non-compliance risks.*

– Khaled Emam, Senior Product Development Manager, Bank AlJazira

I think that the Windows 10 process is making banks more aggressively move to white label models. White label seems a certain solution for banks.

– Ercüment Ergün, Vice President of Merchant and POS, ATM Operations, ING Bank Turkey

Banks have started to explore various solutions, including but not limited to buying upgrades and extended operating system support.

– Puneet Kapoor, President of Products, Alternate Channels & Customer Experience Delivery, Kotak Mahindra Bank



Banks are taking a mix of approaches, but mainly looking to move to Windows 10.

– Adam Levitt, Senior Manager of Product and Engineering, Stanley Black & Decker Inc.

We moved to Windows 10. Others continue on Windows 7 for as long as possible.

– Nurzhas T. Nurpeissov, Group Lead of the Self-Service Devices DevTeam, Kaspi Bank, Kazakhstan

Our customers are trying to continue on Windows 7 as much as possible, but at the same time are going to set up a plan for migrating to Windows 10. I'm not aware of alternatives.

– An executive from a major European processor

At this moment we are in the upgrade process, starting with hardware capable of running Windows 10.

– Germán Puerto, Channel Services, BBVA Colombia

Selling new-generation processors is not an option due to the costs, when there are solutions like the Kalignite Hypervisor which is a real and compliant solution.

– Luis Razo, Moneta Technologies

We are considering other solutions in order to avoid a substantial investment.

– Andres Gerardo Rolon Salazar, Banco de Bogotá



Continuing on Windows 7 as long as possible and making strategic Windows 10 upgrades.

– Toby Salsman, Chief Technology Officer, Dolphin Debit Access

Banks are either extending Windows 7 support as long as possible or taking the opportunity to look for outsourced models that move the responsibility to a third party.

– Pablo Santa Teresa, Head of Project Management Office, Prosegur Australia

If there's a good technical solution, we would prefer to go on with Windows 7. Otherwise, we'll upgrade to Windows 10.

– Guojun Tang, General Manager of IT Department, Bank of Shizuishan Co. Ltd.

They are still evaluating what to do in the short term and considering alternative solutions.

– Carlos Villaseñor, Datasys Group SA

We are currently in the process of migrating to Windows 10, while starting to look at other operating systems for ATMs.

– Martinus R. Winata, Head of Electronic Banking, PT Bank Central Asia Tbk



SUMMARY

One Big Thing

In 2018, 2019 and again in 2020, we asked banks to do the impossible: Identify the single, solitary aspect of their ATM channel they would choose to improve, if they had to choose just one.

In 2018, the One Big Thing for 21% of respondents was customer experience (i.e., ATM user interface). Another 16% named cost of operation, while 15% cited ATM availability. In 2019, the One Big Thing was new features and functionalities (i.e., moving teller transactions to the ATM) for 25% of respondents ... but, for another 25% it was ATM availability. Lowering the cost of operation was the top job for 22% of respondents.

In 2020, 28% of respondents selected increasing ATM availability as their No. 1 goal; 19% chose improving the overall customer experience (i.e., better user interface and faster transactions); and 18% chose lowering the cost of operation.

For non-bank respondents, the various No. 1s in 2018 were customer experience (21%), cost of operation (18%) and ATM availability (15%).

In 2019, non-bank choices were cost of operation (31%); customer experience (26%); and new features and functionalities (25%).

In 2020, non-bank respondents named cost of operation (35%); customer experience (23%); and overall availability (14%).

Three years of survey results highlight an important truth about ATMs: It is virtually impossible to pin down a single area of focus within a complex and diverse customer service channel.

Also this: For 53 years now, the self-service channel's one constant has been change.

And finally, here's the *real* One Big Thing: Know your customer.

Then, let the trends follow you.



Interview insights

INTERVIEW QUESTION: “What is your highest priority for your ATM network over the next few years?”

Here are some of the responses:

I would categorize three priorities:

- *Revenue boosting: through features such as surcharge and DCC*
- *ATM channel enhancement: introducing recycling, improve speed of transactions, improving customer experience, user interface*
- *Improving security: Win 10, aligning with constantly changing PCI requirements.*

– An executive with a large European bank

Ensuring cash is encouraged in retailers, from saying “NO CASH accepted.”


– Dave Ball, Managing Director, EuroCash ATMs

Our immediate strategy is to sustain the ATM business as ATM transactions are declining due to other digital channels.

– Manohar Bhoi, Vice President, Electronic Payment & Services Pvt Ltd

Our customers are focused on how to seamlessly and efficiently handle transaction volume at the ATM. To be able to do that, they need to look at consumers’ expectations. Consumers want touchless transactions, the ability to select the denominations that they want and have access to ATMs in locations that are quick and easy to access.

– Tiffini Bloniarz, Senior Manager of Media Relations, Diebold Nixdorf

- 
- *Keep feeding the new services and functionalities pipeline in order to offer banks both new sources of revenues and comprehensive tools for branch transformation*
 - *Strengthen the availability and ease of use of non value-adding branch management services, to allow “transactional” branch number decrease, which in Italy is still behind the rest of Europe. Covid can boost this trend that supports minimization of people proximity.*

– Igor Borceto, Head of Marketing ATM & Self Banking, Nexi Payments S.p.A.

The question tempts me to mention some great functionality, but the truth is very simple: seamless and cost-effective migration to Windows 10. Support for the two operating systems is painful for both operation and development, replacement of hardware also costs a lot of money and human resources. So now we have to try to deal with this important change as best we can, to try to protect our resources so that we can also address customer-focused topics.

– Martin Chlumský, Česká spořitelna

In my opinion, the highest priority is to expand the ATM network through a utility model as e-payment transactions accelerate in the next few years. A utility model enables participants to save cost in self-service machine deployments.

– Marcus Lim, Payments Network Malaysia Sdn. Bhd.

Extend capabilities and functionalities over the Visa network so that off-us networks can act more like on-us networks.

– Alicia Moore, Head of Global ATM Partnerships, Visa

The least possible number of customer incidents; improved biometrics; ATM-mobile integration.

– Nurzhas T. Nurpeissov, Group Lead of the Self-Service Devices DevTeam, Kaspi Bank, Kazakhstan



ATM network growth in cash dispensers and cash deposit machines; development of cash management on ATMs; multivendor solution integration; new functionalities integration.

– Jose Alejandro Ortega, Director of Electronic Operations, Bancoppel S.A., Mexico

Transition to Windows 10; introduction of a contactless card reader for acceptance of international cards; cash out via biometrics.

– Oleg Semenenko, ATM Network Monitoring and Development, Team Lead, TBC Bank, Georgia

Mobility and security. Now all ATMs are in special private internet connection; in the future if they go with wireless or public internet, there will be more demand for internet security.

– Goujun Tang, General Manager of IT Department, Bank of Shizuishan Co. Ltd.

As an ATM reseller, my highest priority would be to extend the life of the ATM channel as long as possible, and to try to find new uses and value in this channel.

– Jaime Unzueta, Director for Bolivia, Alpha Systems S.R.L.

Access for disabled people and the aging population; biometrics.

– Malindu Wanigarathne, Systems Specialist, Informatics Pvt. Ltd.

Improved security is the highest priority; update security to anticipate upcoming newer crime methods, both for direct access to ATMs (offline) and ATM networks (online).

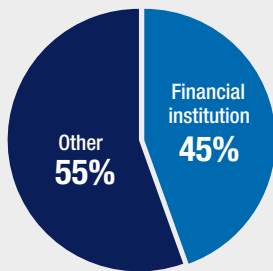
– Martinus R. Winata, Head of Electronic Banking, PT Bank Central Asia Tbk

APPENDIX

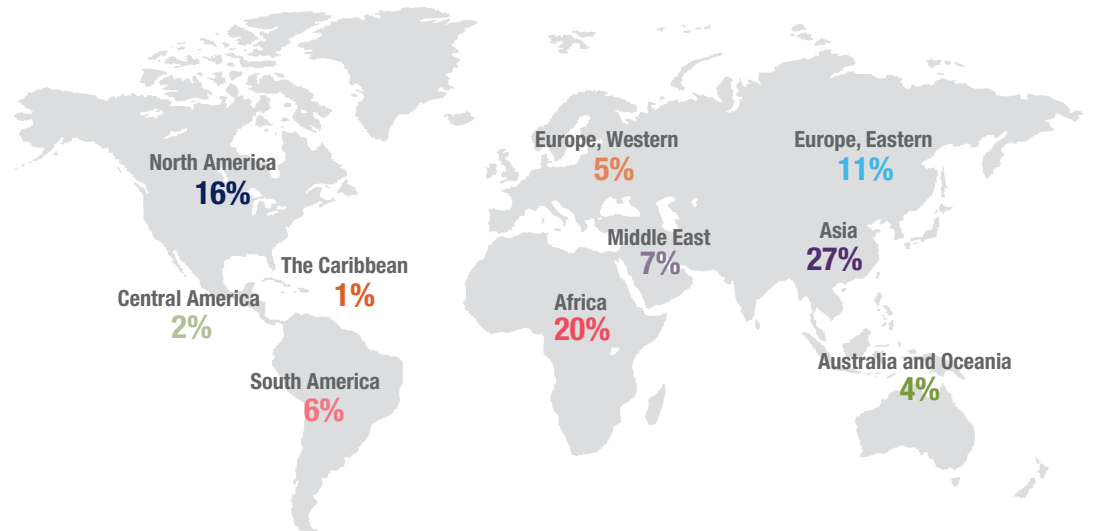
Analysis of financial institution survey results

Note: Not all data will add up to 100% due to rounding

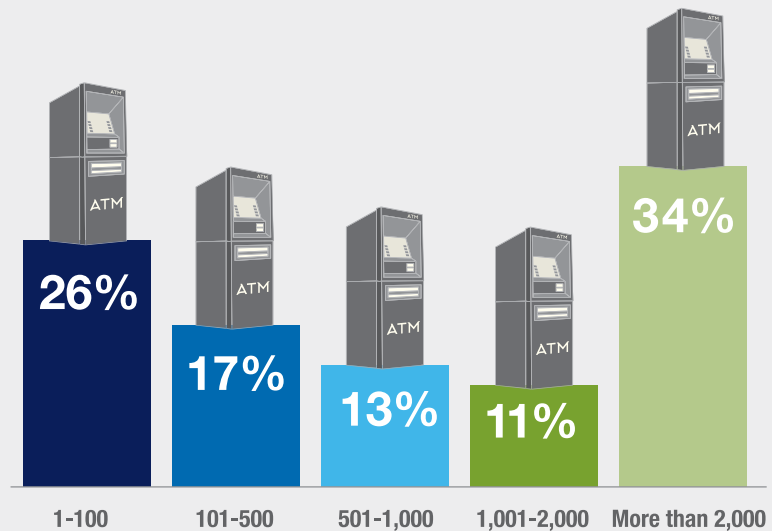
1. Please identify your industry segment.



2. In what global region are you based?

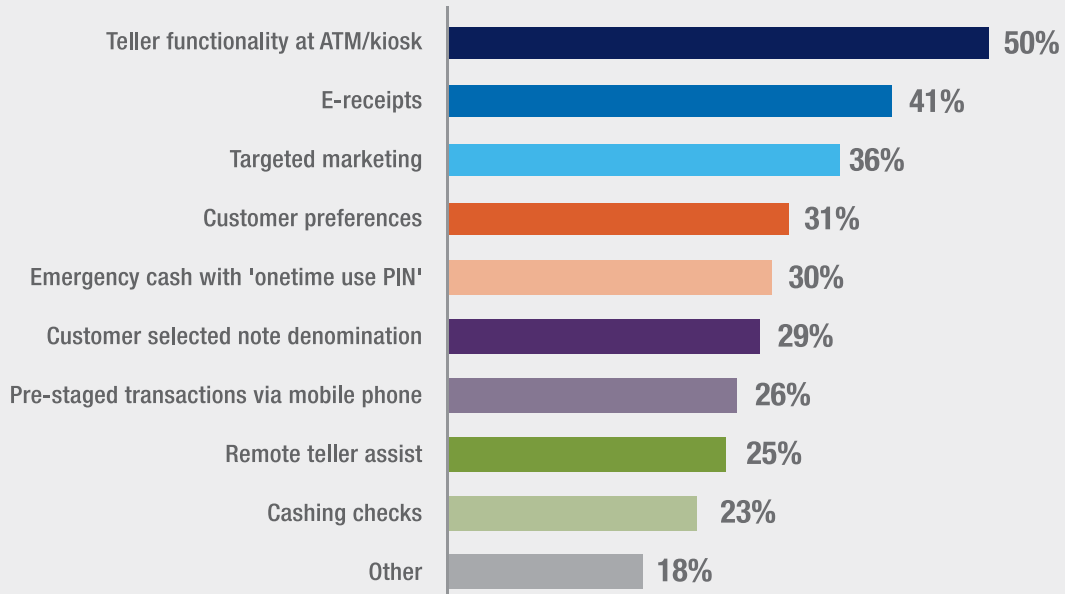


3. How many ATMs do you have?

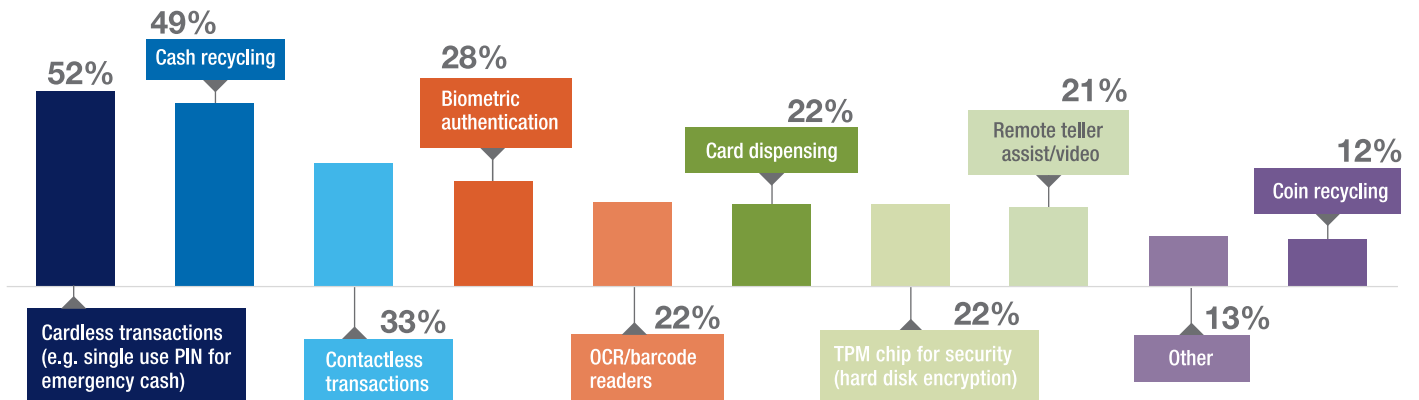




**4. Which of the following ATM features and technologies does your bank ALREADY support?
Select all that apply.**

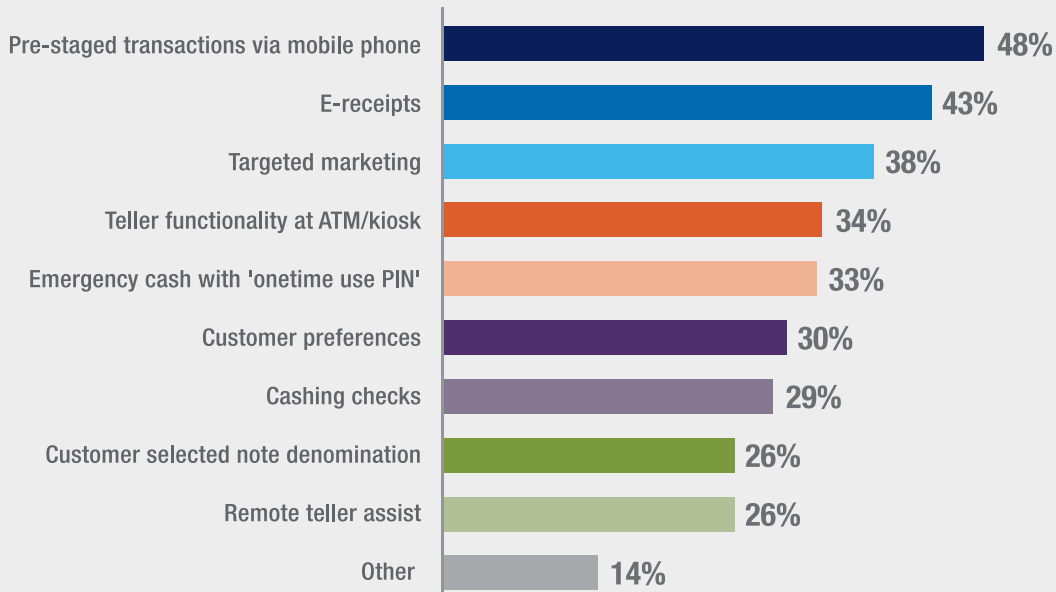


5. TECHNOLOGIES

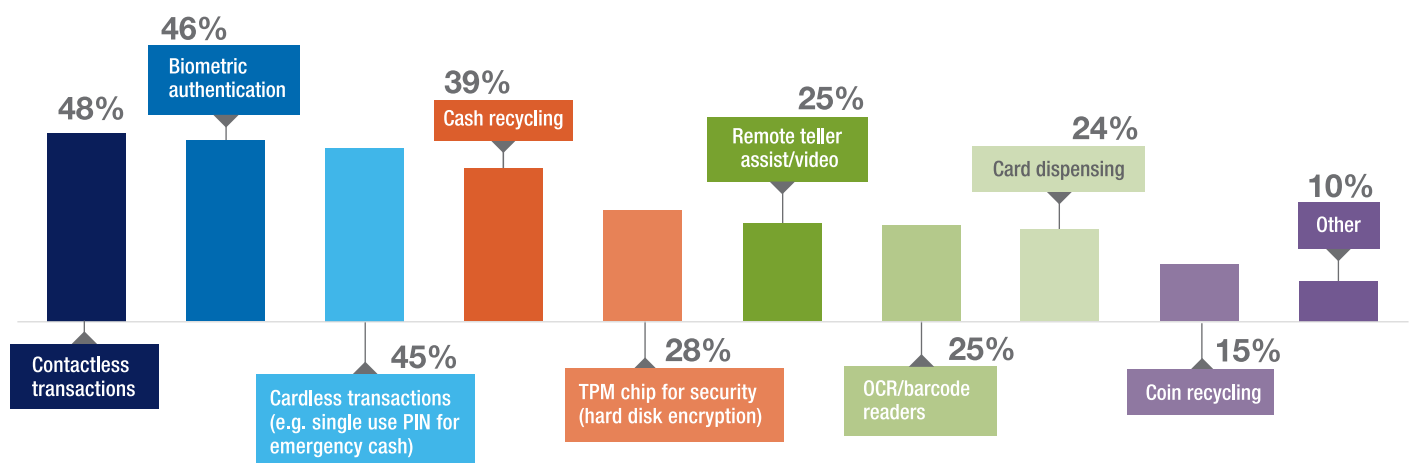




6. Which of the following new ATM features and technologies does your bank PLAN to support over the next few years? Select all that apply.

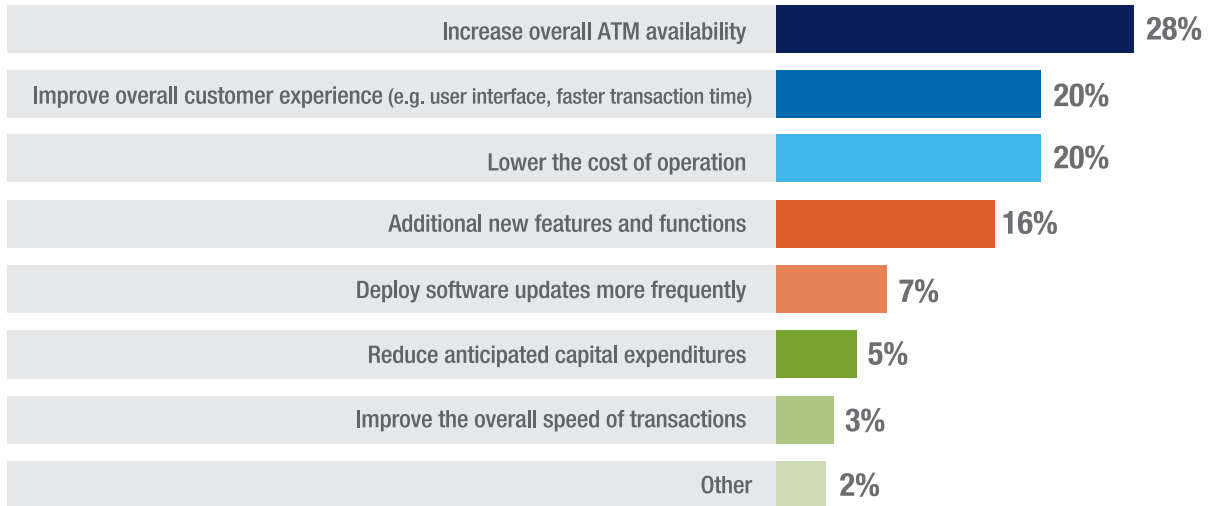


7. TECHNOLOGIES

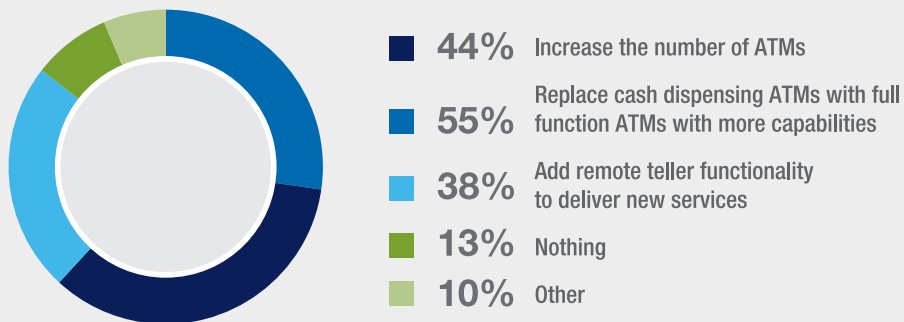




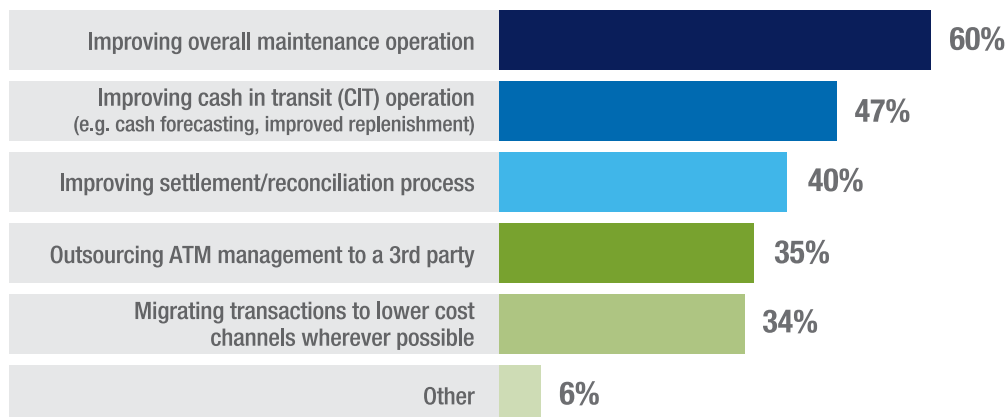
8. If you could improve only ONE aspect of your ATM channel, which would it be?



9. Given recent branch closures, what are you doing with the ATM channel to provide alternatives for branch services? Select all that apply.

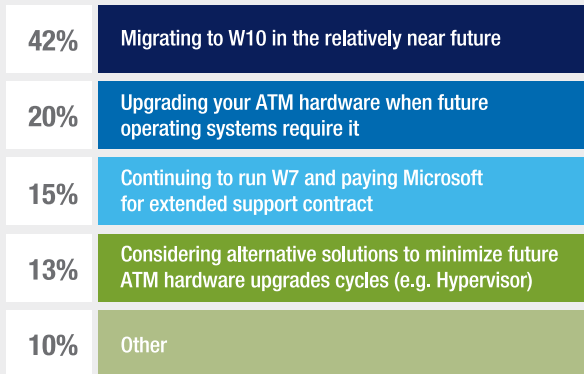


10. What are you doing to make the ATM channel as COST EFFECTIVE as possible? Select all that apply.

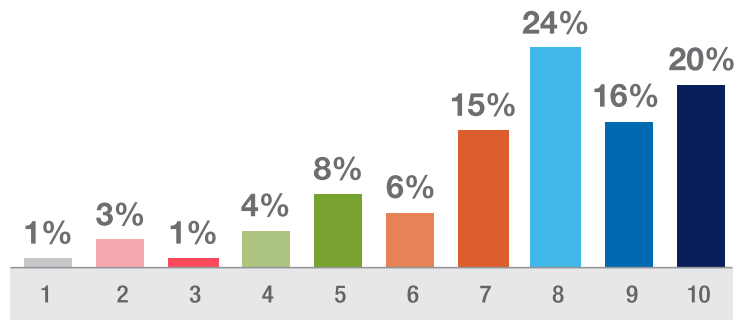




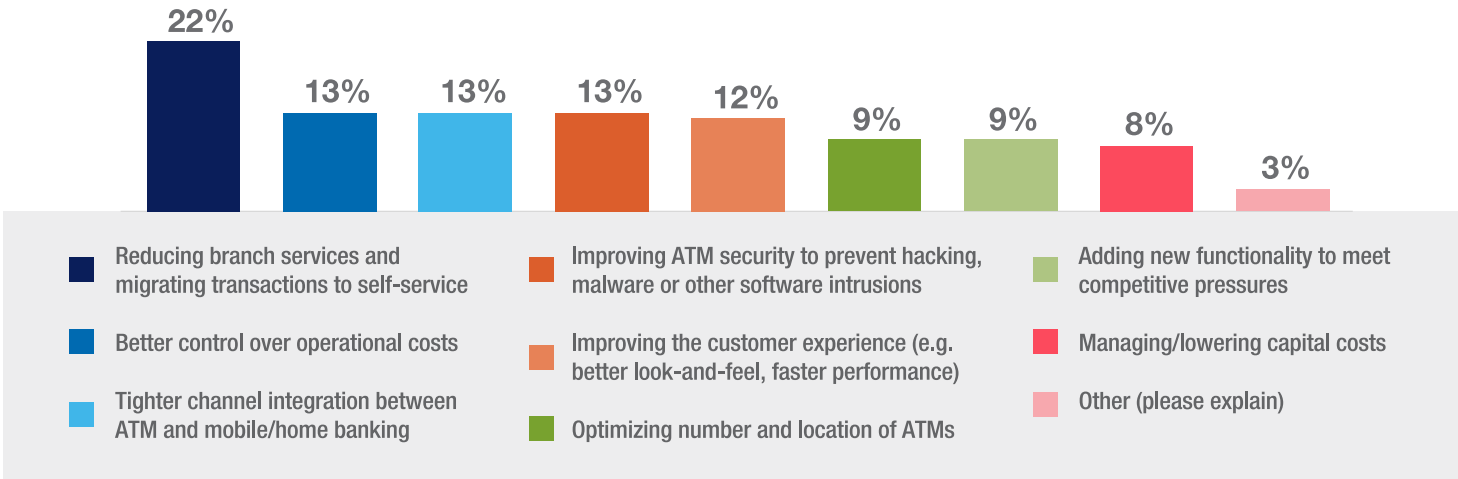
11. Which of the following statements best represents your banks approach to ATM hardware upgrades in light of W10? Are you:



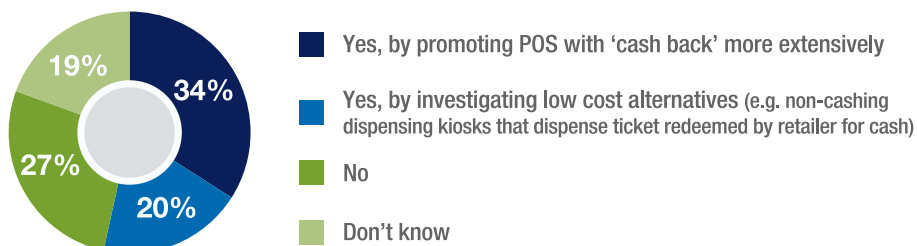
12. On a scale of 1-10 (where 1 = 'not at all' and 10 = 'extremely') how confident are you in your overall ATM software security?



13. What is your highest priority for your ATM network in the next few years? Select one answer only

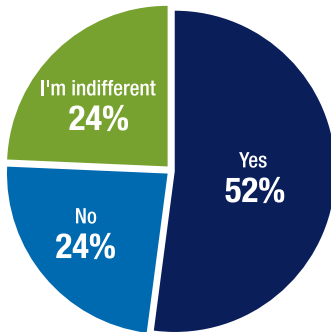


14. ATMs are the primary means of physically delivering cash to customers, but is your bank considering adding or extending alternative strategies?

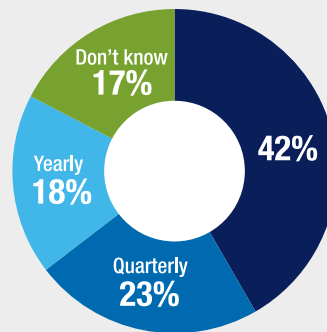




15. Do you plan that your next generation of ATM software will be cloud based?

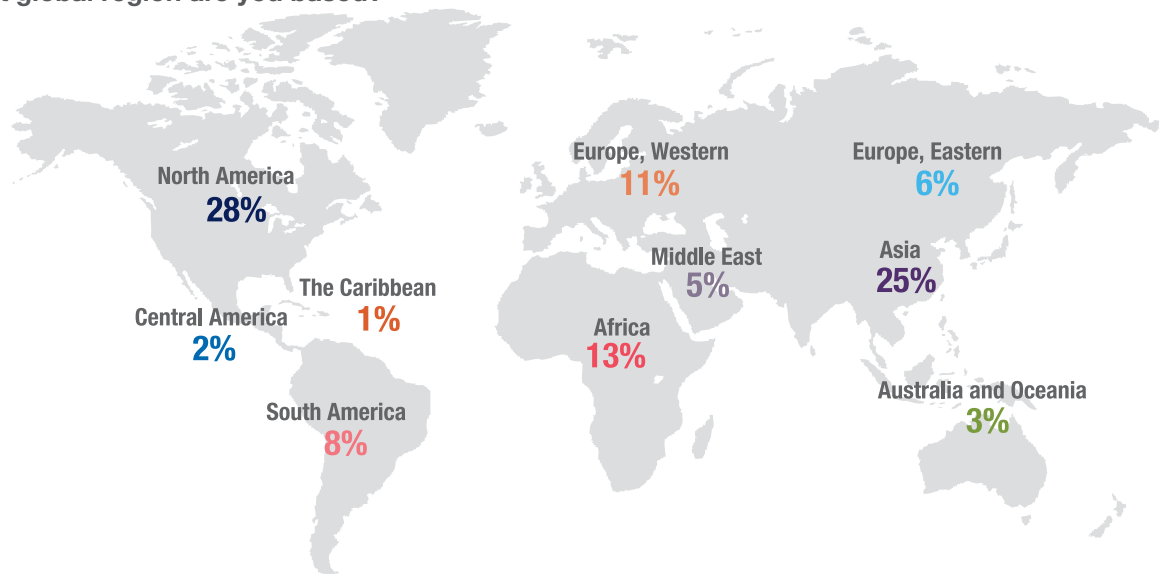


16. How frequently would you like to update your ATM software in the future?

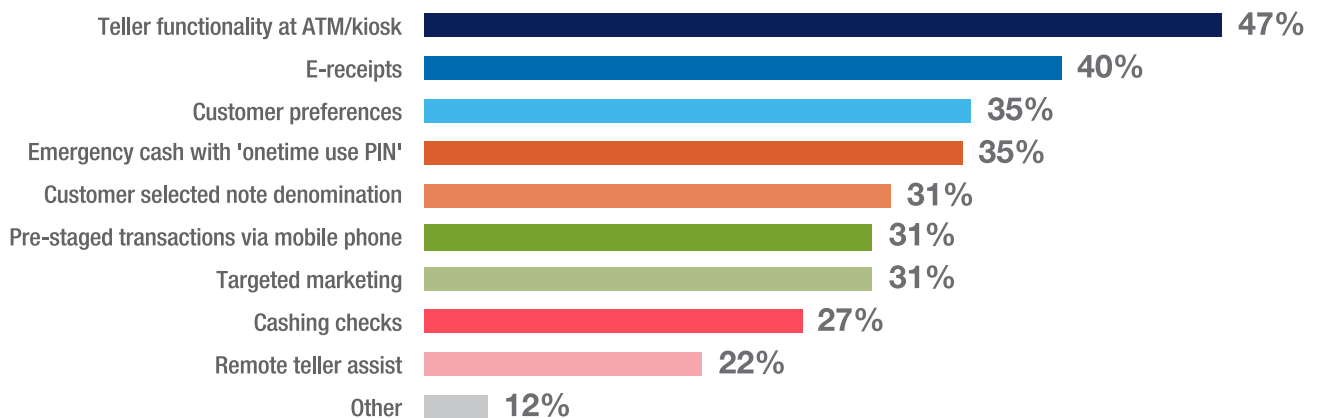


Very frequently (i.e. utilising a DevOps approach), every couple of weeks if possible

17. In what global region are you based?

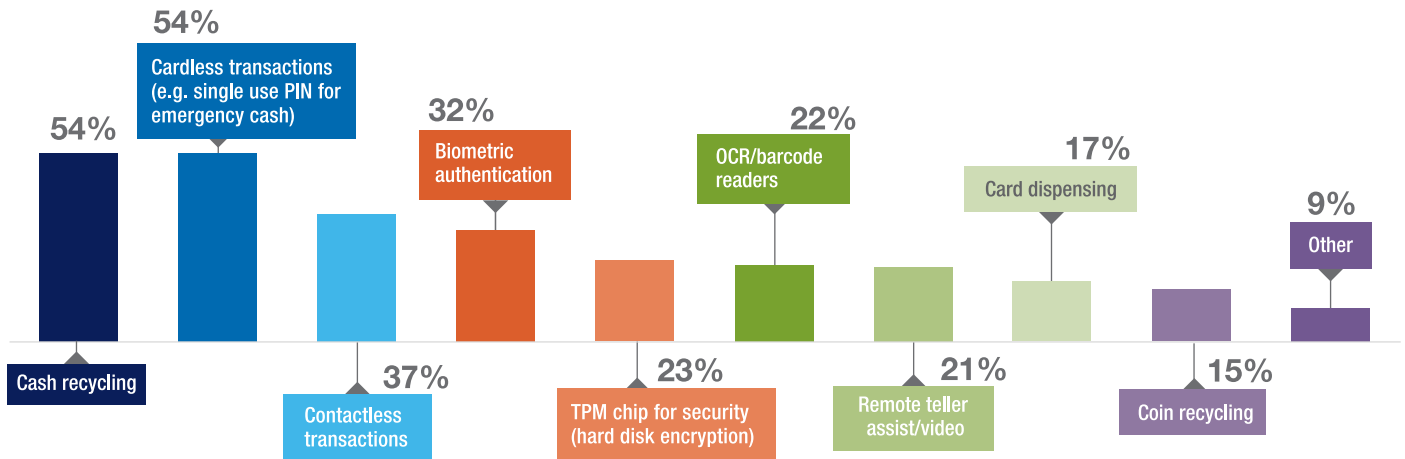


18. Which of the following ATM features and technologies do most banks ALREADY support? Select all that apply.

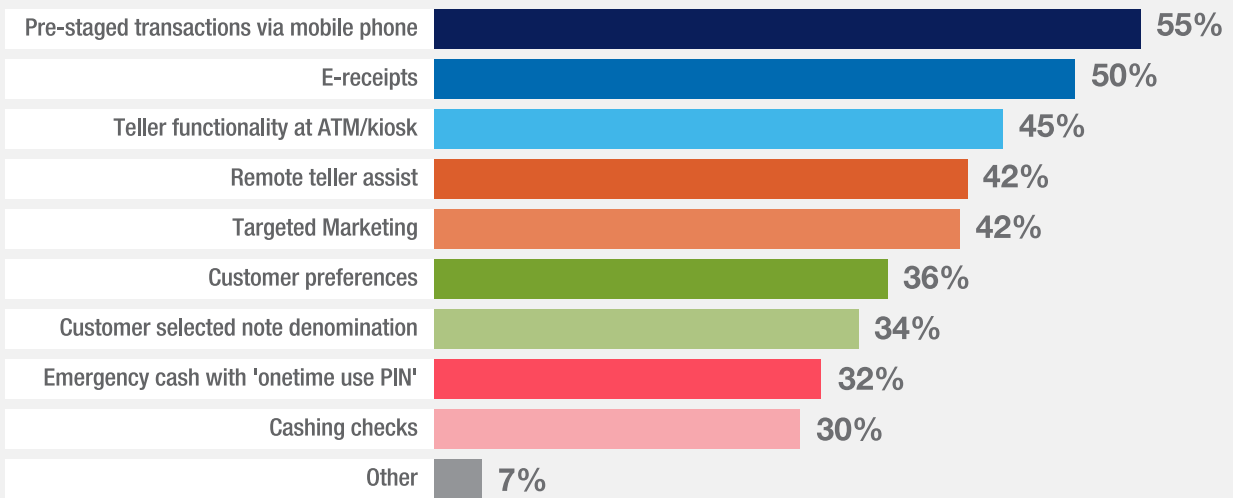




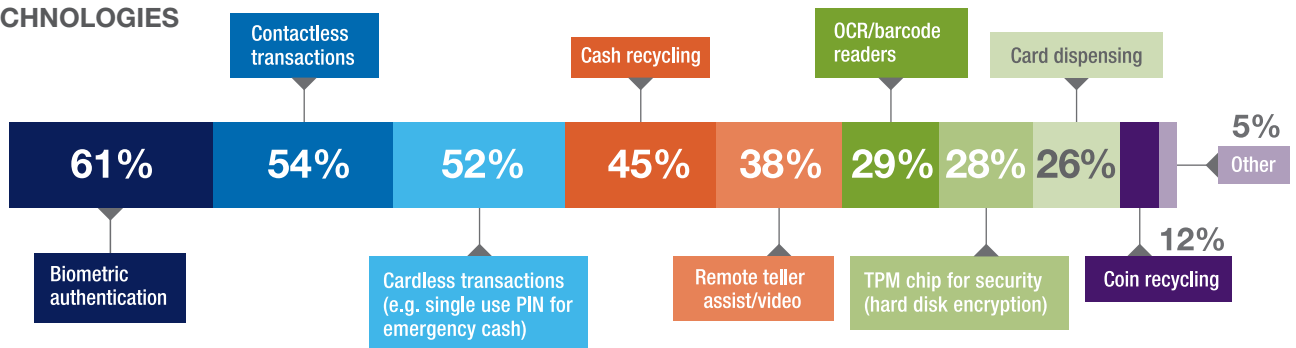
19. TECHNOLOGIES



20. Which of the following new ATM features and technologies do you think banks PLAN to support over the next few years? Select all that apply.

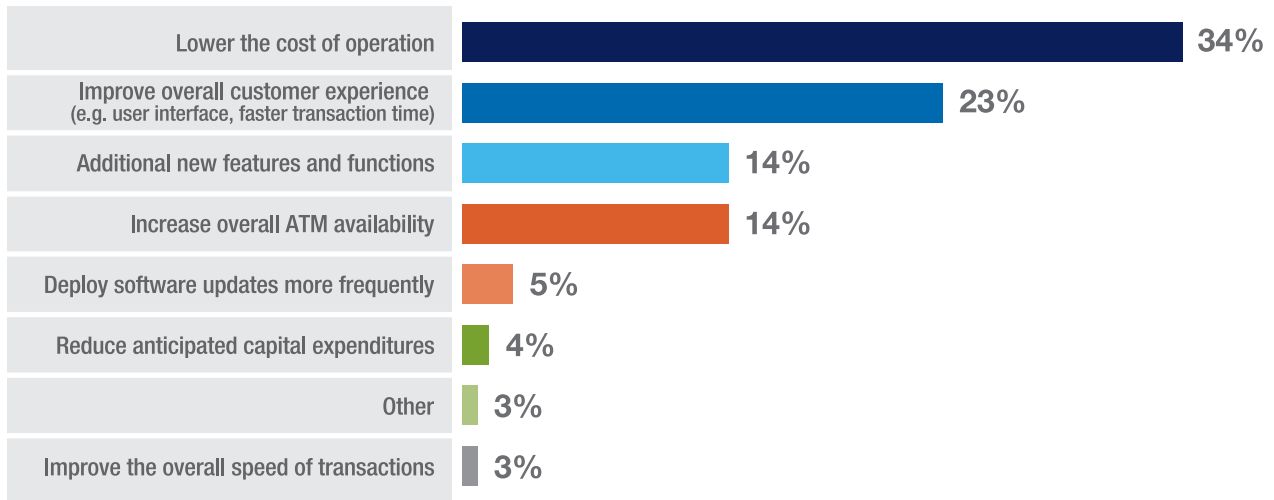


21. TECHNOLOGIES

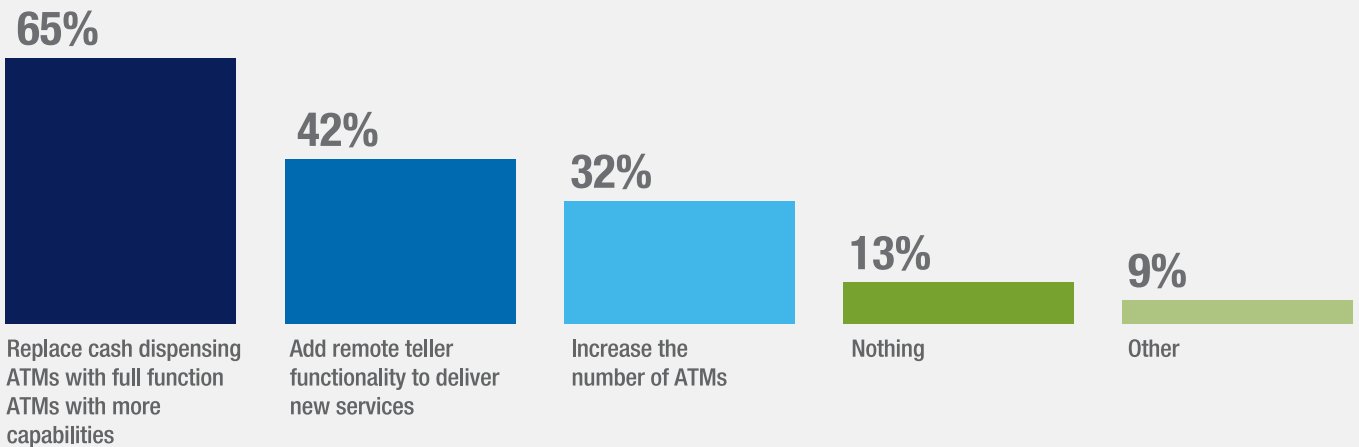




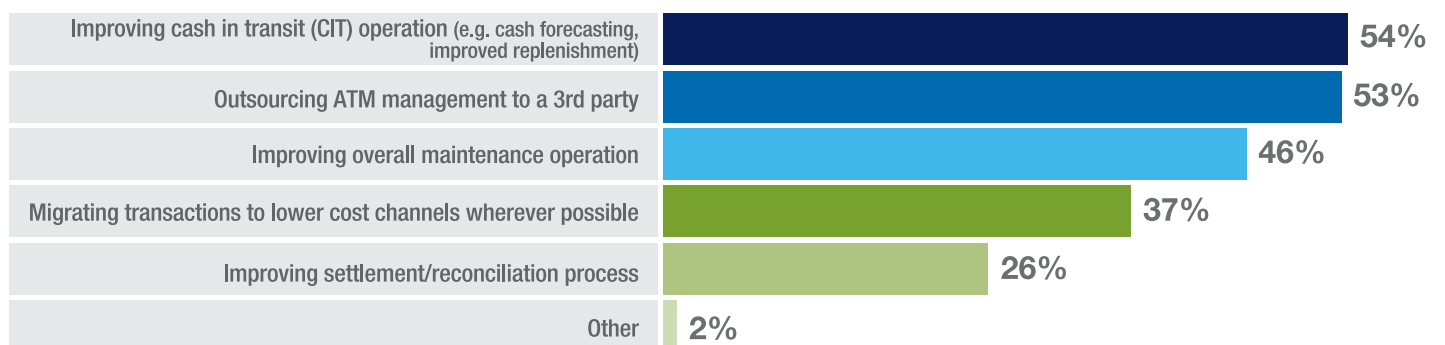
22. If banks could improve only ONE aspect of their ATM channel, which do you think it would be?



23. Given recent branch closures, what do you think banks are doing with the ATM channel to provide alternatives for branch services? Select all that apply.

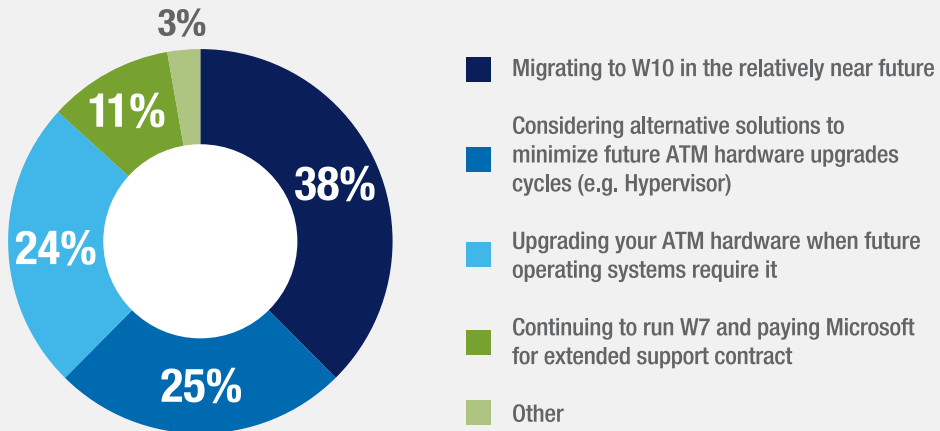


24. What do you think banks are doing to make the ATM channel as COST EFFECTIVE as possible? Select all that apply.

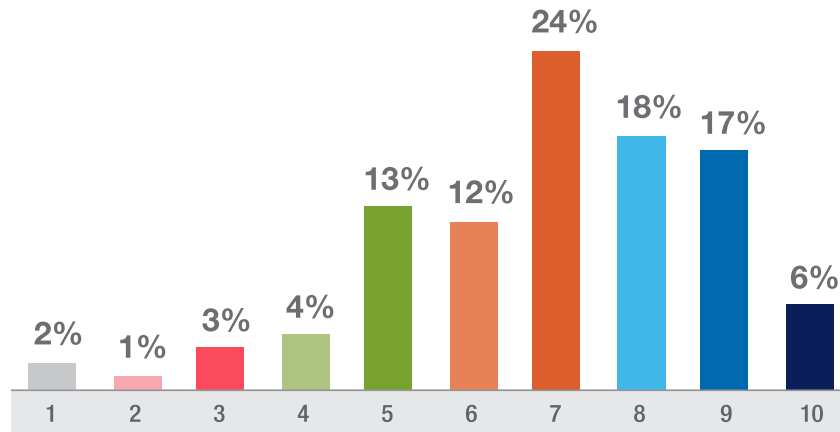




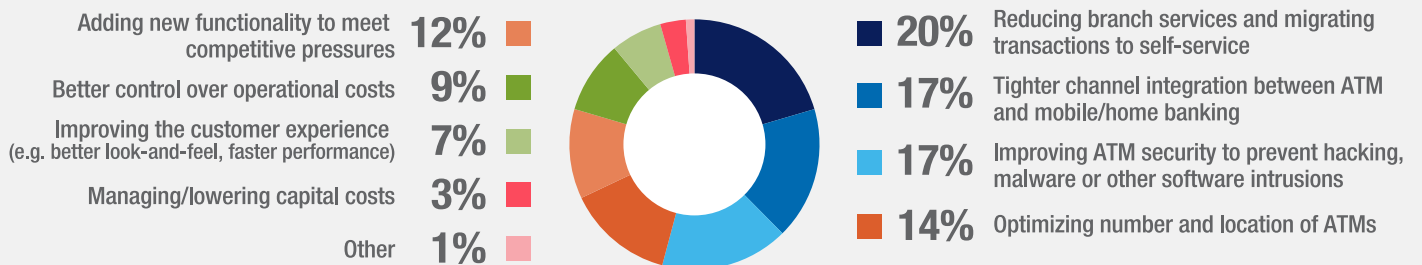
25. Which of the following statements best represents banks approach to ATM hardware upgrades in light of W10? Are you:



26. On a scale of 1-10 (where 1 = 'not at all' and 10 = 'extremely') how confident are you in your overall ATM software security?

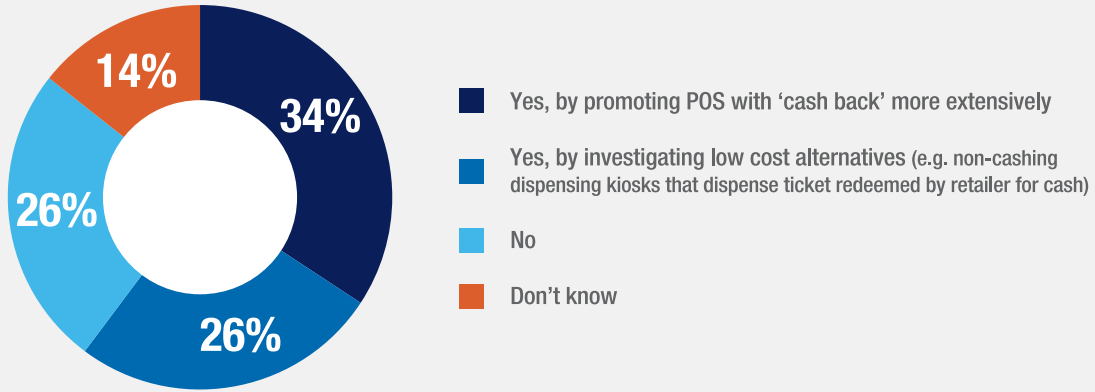


27. What is your highest priority for most banks ATM networks in the next few years? Select one answer only





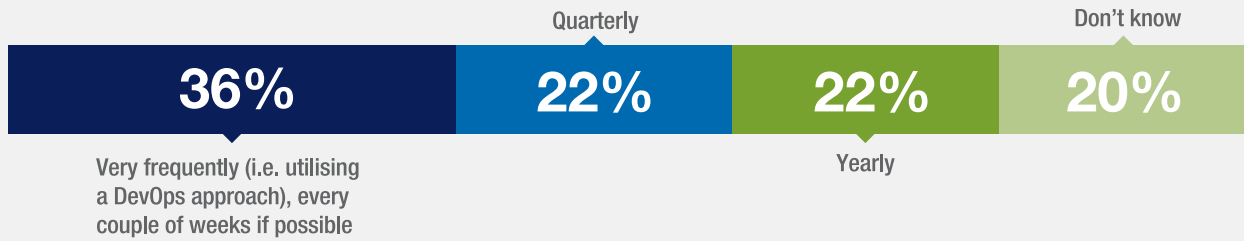
28. ATMs are the primary means of physically delivering cash to customers, but do you see banks considering adding or extending alternative strategies?



29. Do you think that banks next generation of ATM software will be cloud based?



30. How frequently will banks update their ATM software in the future?





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Banco de Bogotá	Erste Bank Croatia	Stanley Black & Decker
Banco Multiva	EuroCash ATMs	TBC Bank
Banco Santander	Garanti BBVA Teknoloji	Telmex
Bancoppel	Impromptu Solutions	UniCredit Bank
Bank Aljazira	Informatics	Visa
Bank Central Asia	ING Bank	Westpac New Zealand
Bank of Nanjing	Intesa Sanpaolo	Yapı Kredi Teknoloji
Bank of Shizuishan	Kaspi Bank	Zijin Fulcrum Technology
Bankia	Kotak Mahindra Bank	ZiraatTeknoloji
BBVA Colombia	Leo Systems	

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