2025/26
ATM & Self-Service
SOFTWARE TRENDS

Table of Contents

Presented by:

KAL ATM Software (est. 1989) is a world-leading ATM software company and the preferred supplier for global megabanks. The company specializes in software solutions for ATM networks of all sizes and complexities – allowing banks to gain control, reduce costs, increase functionality, and improve competitiveness.

ATM Marketplace, owned and operated by Louisville, Kentucky-based Networld Media Group, is the world's largest online publisher of news and information for and about the global ATM industry. Content on the site is updated every business day and is distributed to financial services industry professionals around the world twice weekly in a free e-mail newsletter.

Introduction

It's easy to forget, but the ATM has been in a nearly constant state of evolution, almost from the very beginning. It has been revised, refined, and reimagined many times.

American inventor Luther Simjian designed a machine called the Bankograph around 1960. Often credited as the earliest version of the ATM, it only accepted deposits. In 1967, inspired by vending machines that dispensed candy, Scotsman John Shepherd-Barron created a machine that allowed users to withdraw cash.

American engineer Donald Wetzel made a big change to the cash-dispensing machine in 1969 by swapping out Shepherd-Barron's paper vouchers for plastic cards that stored bank account information on magnetic strips.

Innovations continued over the years, from shared networks and real-time account verification to touchscreen ATMs to the introduction of functionalities like bill payments, account transfers, biometric authentication, and contactless transactions.

So what is happening today? Despite steadily declining cash usage, the 18th edition of the *ATM Software Trends Survey* found that ATMs appear to be holding their own.

This year's survey saw a big jump in the number of banks that said they were more reliant on ATMs to deliver services to their customers. The number increased to 51 percent, up from 31 percent in last year's survey.

In addition, about 58 percent of bank respondents to the survey reported that overall ATM usage in their networks has increased over the past few years, while about 20 percent said it stayed the same. Only about 22 percent said ATM usage has decreased.

Customer demand grew for transactions of all types. The biggest growth was seen in cash deposits, mentioned by about 70 percent of bank respondents. This was followed by contactless transactions (65 percent) and mobile-integrated transactions (63 percent). Cash withdrawals maintained their popularity, with about 61 percent of banks saying customer demand for withdrawals increased.

Interview Insights

Over 50 percent of banks have reported increased reliance on ATMs in the past 12 months. When we asked this question in 2024, this was true for only 31 percent of banks. What factors do you think are making banks rely more on ATMs today?

In this region, ATMs are seen as part of the just-in-time workflow of purchases/shopping. Hence, ATMs are available on almost every corner. In other developed nations, ATMs are seen as an extension of brickless branches. Hence it is increasing in most parts of the world.
— Lakshmi Narayanan, BDO Philippines, the Philippines

In the Middle East, bank branches are becoming expensive to maintain, and we have seen a great decline in customers visiting branches. Banks are closing more branches – but to maintain their presence and provide customer support, they are investing more in alternative channels to support core banking services. The ATM is one important element.
— Ziabuddin Shah, Rototype SpA, Middle East Dubai - UAE

The ATM is transforming into the primary method to convert physical cash into digital and digital currency into physical cash. The industry is shifting back to physical space, investing in places where sales happen. Offloading the transaction to the ATM frees up people resources to build relationships or handle more complex transactions and sales. Banks are more reliant on hardware technology because the staff has been repositioned to do other tasks.
— Bill Friend, Huntington Bank, U.S.

Compared to bank branches, ATMs are more widespread. People may prefer using ATMs as a convenient alternative to traveling to a branch for transactions. Moreover, banks in Hong Kong are enriching mobile banking apps and boosting the usage by introducing more functions. Cardless withdrawals (i.e., withdrawing cash by using mobile banking apps to scan the QR code displayed on ATMs) is one example. Our customers are requesting for the geographical availability of cardless withdrawals to be extended.
— Industry colleague in Hong Kong

ATMs are much cheaper to run than full-service branches, which have high costs for staff and rent. People now use mobile and online banking for most tasks. ATMs provide 24/7 cash access that fits this digital lifestyle….Despite digital payments, cash remains important for many people and businesses, and ATMs are the easiest way to get it.
— Industry colleague in Republic of China

I think recent outages in channels of various banks' payment technologies have reinforced customer perceptions that cash is a technology-independent payment system, and thus more reliable. Also, a proportion of customers are using cash to enable "envelope budgeting."
— Commercial bank professional in Ireland

Cash is king, as the saying goes. Cash gives the holder greater control of how much to spend, where, and when – without incurring debt or charges. Cash is anonymous. As it continues to be used, so will the deposits. An ATM can be accessible 24/7 to conduct transactions. Cash deposit demand may likely be tied to the increase in ATM cash recycler deployments; greater deposits lead to less reliance on cash loading.
— Multinational bank professional in Canada

More ATM networks are cashing in on cash recycling

A recent article published in *BAI ProSight* highlighted SMBs (Small-Medium sized Businesses) as a [potentially huge driver](#) for deposit-taking ATMs. The article quotes a Diebold-Nixdorf vice president, who said 70 percent of cash coming into branches is from SMBs. Diebold-Nixdorf research found that 75 percent of SMBs it surveyed are willing to deposit business funds into self-service devices. This is likely driven by the need to make deposits outside normal branch hours.

Steve Hensley, KAL's executive vice president of Global Sales, agreed that SMBs present a key opportunity for deposit-taking ATMs. Many business owners like giving their deposits to a bank

teller, rather than just dropping the money in a deposit slot or at an ATM, especially when depositing a large number of notes. "But this method restricts customers to bank hours, so it's not convenient for many businesses that make their deposits long after branches have closed for the day," he said.

UniCredit, the largest bank in Italy, satisfied concerns over security while making machines accessible 24/7 by locating its deposit-taking ATMs in secure rooms that can only be accessed with a bank card. Bank employees are available during hours if customers require assistance.

Automating business deposits using a new generation of ATMs specifically designed for this purpose delivers big benefits for both the banks and their customers, Hensley said. "For the customer, business deposit automation provides immediate credit for the amount deposited. For the bank, the transaction process does not require assistance from a bank employee. Bank staff who previously spent long periods of time counting deposited money are now freed up to provide more valuable services such as interacting with customers and selling and promoting bank products."

ATMs that can accept deposits also often feature cash recycling capabilities. According to *Datos Insights* research, demand for cash recyclers shored up global ATM shipments in 2024. Cash recyclers accounted for 59 percent of ATM shipments, up from 55 percent in 2023.

Continued growth is predicted. According to the *Business Research Company*, the cash recycler market hit $3.76 billion in 2024 and will increase to $4.88 billion by 2029. In addition to ATMs, cash recyclers are also used for other applications, including self-checkout and teller assistance.

Two Diebold executives, during a presentation at the ATMIA Conference in February 2025, noted some changing trends among their customers, with an increase in the average deposit rate to $441. The most frequently deposited bills are 100s and 20s. Cash recyclers give financial institutions more flexibility to accept – and dispense – cash of varying denominations.

They also described how cash recycling helped one Diebold customer [reduce its cash-in-transit (CIT) costs](#). A branch that spent $11,700 for CIT to come three times a week was able to drop the visits to once a week (at a cost of $3,900) by adding additional cassettes. It further reduced CIT costs, to $1,950 every two weeks, by adding cash recycling.

The Diebold executives suggested that the "sweet spot" for adding cash recycling to ATMs is machines with a transaction mix of 30 percent deposits and 70 percent withdrawals.

Summary of key points

▶ Cash recyclers made up 59 percent of global ATM shipments in 2024, up from 55 percent in 2023.

▶ Diebold customers experienced significant reductions in CIT costs by adding additional cash cassettes and recycling to their machines.

▶ SMBs that visit bank branches outside normal business hours are likely to be especially interested in using cash recycling at ATMs.

Interview insights

Over 50 percent of banks say overall customer demand for ATM services has increased. Seventy percent have noted increased demand for cash deposits specifically, while 63 percent say the same about cash withdrawals. What do you think this says about the evolving demand for cash in society? Why do you think ATM cash deposits are in such high demand?

> *We have observed that ATMs have evolved from being mere cash dispensers to becoming advanced self-service channels that complement both digital and physical banking….Banks are also using ATMs to absorb basic transactional operations, freeing up branch capacity for more consultative services.*
> *— **Multinational financial services professional, Spain***

Cash serves as a back-up to all digital payment alternatives. Moreover, there is still a huge segment of the population that prefers operating via cash, which they feel is more tangible.
— **Multinational bank professional, Asia**

In economies like Latin America, the use of cash still exists and even more in informal markets. Although there are now digital wallets, retail businesses handle cash daily, which makes cash deposits higher in demand.
— **Angel Ramos, Belltech, Peru**

Many markets in Middle East specifically are heavily dependent on cash transactions. These businesses aim to make quick and easy cash deposits into their banking systems daily. With the closure of many branches and no access to bank branches after office hours, the demand for cash deposit machines has significantly increased.
— **Ziabuddin Shah, Rototype SpA, Middle East Dubai - UAE**

One theory contributing to higher demand for cash deposit services is that many retailers (including gas stations) have incentivized the use of cash by offering lower prices for customers who pay in cash vs card. This could increase the use of cash in some areas, which, in turn, increases the circulation of cash between FIs. The challenge for FIs is to then process this influx of cash in the most efficient manner possible, hence the drive to cash recycling and the ultimate goal of a closed-cash ecosystem. We are working on implementing several ways to optimize how we process cash from newer ATMs – ATM cash recycling, cassette optimization, and better cash forecasting.
— **Whit Coolbaugh, State Employees' Credit Union, U.S. (North Carolina)**

Using cash in some countries, for example Hong Kong, is still fairly common – especially for small businesses, local shops and taxi fares. On the other hand, after small businesses receive cash from customers, they need to have a channel for depositing the cash. Thus, ATMs with cash deposit functionality are in demand.
— **Industry colleague in Hong Kong**

The surge in cash deposits at ATMs is a direct result of two key factors in Taiwan: branch closures/convenience and the night market and cash-based SME economy….Major banks are consolidating and closing smaller branches to cut costs. For small business owners, night market vendors, and individuals who end their day with significant cash, deposit-enabled ATMs are now the most convenient way to bank after hours without visiting a teller.
— Industry colleague in Republic of China

ATM user activity spikes for customers aged 45-60

So, who is using ATMs the most?

Bank respondents to the *ATM Software Trends Survey* tapped Generation X (born between 1965 and 1980) as the most active customer demographic.

The survey asked respondents to rank Boomers (born 1946-1964), Generation X, Millennials (born between 1981-1996), and Generation Z (born between 1996-2010). Sixty-four percent of respondents ranked Generation X either first or second in ATM activity. This was followed by Millennials (with 52 percent ranking them as first or second), Generation Z (with 44 percent listing as first or second), and Boomers (40 percent ranking as first or second).

This makes sense, since Generation X came of age in the 1970s and '80s. During that time, the use of debit and credit cards increased dramatically. Millennials grew up with cards (and to a lesser degree, paper checks) – though they are also young enough to have used digital payment alternatives like PayPal and online shopping. Being "digital natives," Generation Z is the most comfortable with mobile wallets, peer-to-peer payments, and eCommerce.

YouGov research highlights similar numbers. Notably, YouGov found that 49 percent of bank customers across all ages preferred ATMs over bank tellers (favored by 42 percent).

According to YouGov, 55 percent of Millennials gave the edge to ATMs while 30 percent chose tellers. Fifty-four percent of Generation X customers liked interacting with ATMs vs 36 percent who chose tellers. Boomers were the only generation who preferred to see a teller (53 percent) over using an ATM (42 percent).

When it comes to both branches and ATMs, *Market Street Research* found that all age groups prioritized convenience and proximity. According to a post in its blog: "... the interviewees who prioritized ATMs in choosing a bank said that it was important to have ATMs that are convenient to home, work, or frequently used travel routes. While paying fees for using out-of-network ATMs is, not surprisingly, undesirable, it can usually be avoided – the most important thing was to have options for "primary" fee-free ATMs that are convenient to daily life."

ATM Software Trends Survey respondents agreed. Forty-six percent tapped proximity when asked which factor is most important to customers when selecting which ATM to use. This was followed by safety (named by 26 percent) and trustworthy brand (17 percent). Cleanliness and hardware integrity (undamaged machine) were both mentioned by 2 percent of respondents.

Summary of key points

▶ Survey respondents selected Generation X as the most active ATM users, followed by Millennials, Generation Z, and Baby Boomers.

▶ All ages prioritize proximity and convenience when visiting ATMs.

▶ Boomers are the only generation that prefers to visit a teller vs. using an ATM.

Interview insights

In our survey, banks ranked both Boomer (aged 61-79) and Gen Z (aged 18 –28) generations as the least active ATM users, while Gen X (aged 45-60) Millennials (aged 29-44) were the most active. What factors do you think are shaping these trends?

ATM usage habits reflect clear generational dynamics. Gen X and Millennials are the most active because they combine digital convenience with the frequent need to manage cash in their daily and professional lives. Although Boomers value the physical channel, many have become accustomed to using branches directly and, in some cases, migrate toward assisted digital solutions. Gen Z grew up in a cashless environment with greater adoption of digital and mobile payments, reducing their interaction with ATMs.
*— **Multinational financial services professional, Spain***

I would argue that data suggests Gen Z is the most active ATM user. Viral trends are driving physical cash usage with envelope-stuffing budgets. Savvy younger consumers have recognized that frictionless spending with tap-to-pay removes the psychological feeling of spending and makes it easy to over-spend. Cash is real and tangible, and it changes spending behaviors.
*— **Bill Friend, Huntington Bank, U.S.***

I think the Boomer generation is still not as comfortable using digital technologies vs. human-based interactions. The Gen Z generation is the opposite but prefers dealing with mobile or online interactions and new digital payment options. Gen X adults were raised with ATM technology and are most comfortable with it. But they may not be as comfortable yet with newer online and mobile payment technologies.
*— **Bank professional in Canada***

I think ATM (and inherently cash) usage is a factor of the demographics' familiarity, need, comfort, and reliance on cash. Of these factors, I think need is an important one. We have seen a reliance or resurgence in cash usage amongst certain demographics in times of financial stress, as it is seen to be an effective budgeting tool.
— Multinational financial services professional in the UK

Where physical meets digital: ATMs as 'phygital' banking gateways

An *American Bankers Association* survey conducted in late 2024 highlights how dramatically consumer banking habits have [shifted toward digital channels](). More than half of U.S. consumers (55 percent) now prefer managing their accounts through mobile apps, while online banking via laptop or PC comes in second at 22 percent. Traditional channels, such as visiting a branch (8 percent), using an ATM (5 percent), or calling by phone (4 percent), are far less common.

Unsurprisingly, mobile app usage is especially strong among younger consumers, with 68 percent of Millennials and 64 percent of Generation Z naming it their primary channel.

With mobile banking leading the way, ATMs are evolving to better integrate into this digital-first ecosystem. Banks are increasingly reimagining their ATM networks to align with online and mobile channels.

"We are now in a new era led by web and mobile-oriented design, and it's important that using an ATM doesn't feel like stepping back in time," said Kader Baadoud, Deputy CEO of KAL. "Making ATM screens interactive, responsive, and user-friendly is a way of delivering great customer experiences that are smooth, easy, accessible, and fast. This approach gives customers a good impression of ATMs and, by association, the organizations running them."

According to the *ATM Software Trends Survey*, over half of banks (55 percent) have rolled out contactless transaction capabilities within the past two years, while nearly half (49 percent) have enhanced user interfaces. Expanded services (40 percent), cross-channel transactions (39 percent), QR code integration (35 percent), and personalization features (31 percent) are also gaining traction.

In the U.S., the earliest adopters of contactless transactions include Chase, Wells Fargo, and Bank of America. Credit unions have also joined the trend, with Co-Op Financial Solutions enabling thousands of member institutions to offer contactless functionality.

This shift reflects a broader change in consumer behavior as physical cards lose ground to digital wallets from Apple, Google, and Samsung. For consumers juggling multiple banking relationships, contactless ATMs eliminate the need to carry multiple cards while providing faster service. Transactions average just 15 seconds, and users can still access cash if their card is lost or forgotten.

Contactless transactions improve security, which is a benefit for both banks and their customers. Since no card is inserted into an ATM, thieves can't access data via a card skimming device. Many contactless transactions require two-factor authentication, which creates a hurdle for fraudsters. This combination of speed and security is pushing ATMs beyond their traditional role.

Some banks are adopting new software to transform their ATM experience. Turkish bank Yapi Kredi, for example, used KAL's K3A software to create a more engaging, user-friendly interface. By mirroring internet banking screens, introducing animations to guide transactions, and enabling personalization such as custom withdrawal amounts, the bank was able to deliver faster and more intuitive service.

Within just six months of development, Yapi Kredi launched a pilot ATM. Once ready, they were able to update ATMs at a rapid pace of 200 machines a day. The results were impressive: cash withdrawals became 46 percent faster and QR code withdrawals 23 percent faster.

This focus on user experience reflects a broader trend. In the *ATM Software Trends Survey*, banks ranked enhanced user experience as a top priority for selecting an ATM software supplier (mentioned by 44 percent of respondents), just behind integration with diverse systems (52 percent) and security (49 percent). Cost efficiency (43 percent) and state-of-the-art software development tools (34 percent) also ranked high. This underscores the need for flexible, future-ready ATM solutions.

Yapi Kredi's investment extended beyond customer-facing improvements. It also streamlined operations by replacing three legacy monitoring applications with KAL's comprehensive KTC remote management system.

Summary of key points

▶ More than half of U.S. consumers now prefer managing their bank accounts through mobile apps, well ahead of online banking and visiting a branch.

▶ Contactless transactions average just 15 seconds.

▶ Integration with diverse systems, security, and enhanced user experience are top priorities for selecting an ATM software supplier.

Intervie insights

In digital channels, the goal is often for customers to spend more time engaging with websites or videos. For ATM interactions, our survey data shows that banks tend to prioritize speed and efficiency. How can banks strike the right balance between fast transactions and the growing demand for personalized or expanded ATM services?

ATMs are generally placed in high-traffic areas. People expect to perform transactions quickly when others are queuing behind them. The balance between speed and engagement can be struck by monitoring ATM usage patterns, strategic ATM placement, and optimizing the supply and rotation of cash. There is strong demand for deploying ATMs in busy, high-traffic areas where

personalization, ad placement, and location-based promotions are possible. That said, there should be a dynamic need for changing the ATM behavior based on the time of the day.
*— **Lakshmi Narayanan, BDO Philippines, the Philippines***

ATMs should have as much functionality as apps, with the advantage of cash management, both for receiving and recirculating.
*— **Financial services professional in Mexico***

The key is to design a user experience that is layered and context-aware. Speed should never be compromised for the majority of users who want a simple transaction. It's important to prioritize the core journey. The primary interface should always default to speed…The balance comes from smart personalization. The ATM should recognize the customer and can, for instance, display shortcuts for their most common transactions (e.g., Withdraw RM200, Pay Tenaga Nasional Bill). This approach uses personalization to increase speed.
*— **Information technology professional in Malaysia***

Interaction and switching between channels play a critical role here. By quickly connecting mobile apps to ATMs using QR codes, customers can access the interaction they need via mobile devices, and transactions can be completed quickly and with targeted focus at ATMs, where resources are limited.
*— **Ünal KILIÇ, Yapi Kredi Bank, Turkey***

ATM hardware and faster communication have brought average transaction speeds down from 2-plus minutes to sometimes under 30 seconds. That same technology has enabled more content like advertisements to be served in real-time, piquing the interest of marketing teams. The balance here is getting the most value out of capital expenses and requires a location-by-location strategy.
*— **Bill Friend, Huntington Bank, U.S.***

Personalization and AI are powerful partners

Personalization is a key area where banks are beginning to catch up. Historically, financial institutions have offered standardized products rather than tailored experiences – and their customers have noticed. FICO research presented at FICO World 2024 revealed that only 14 percent of customers consider their bank "extremely effective" at delivering contextually relevant experiences. At the same time, 65 percent said they want banks to make it easier to discover and compare products.

Some banks are taking action. Banco Bradesco, the third-largest bank by assets in Brazil and Latin America, embedded personalization into a new customer-centric strategy by delivering tailored loan offers. The results included a 56 percent increase in monthly loan applications and a 30 percent rise in conversion rates. Plus, more than 82 percent of customer reviews rated their experience as highly positive.

At ATMs, personalization is an opportunity for banks to build loyalty, said KAL's Hensley. "Consider what banks know – or should know – about their most loyal customers. Why ask the customer who's taken out $200 in $20 bills every other week for the last seven years what language they speak or if they would like that receipt? Shouldn't we know what language they prefer and that they never want a receipt?"

Looking ahead, personalization will likely be powered by artificial intelligence. Research published in *BAI ProSight* identified several areas where AI can drive value, including customized lending, bespoke financial products, contextual advice, AI-powered assistants, adaptive user interfaces, and tailored payment solutions.

Accenture is also bullish on AI in its report Banking: The Future Is Back. It foresees AI driving tectonic improvements in customer experience, product strategy, and operational efficiency. Perhaps most interesting, it believes AI can drive the movement from

core legacy banking systems to modern cloud-based systems. As Accenture notes, AI can reverse engineer legacy code and also make it possible to create applications using natural language. In addition, AI can automate testing of rewritten code.

By 2030, Accenture expects banks to emphasize AI skills over programming. According to the report: "Increasingly, as banks' basic IT maintenance tasks are automated, their IT experts are likely to play a more valuable role. By working more closely with the bank's product leaders, the roles of technology leader and business leader will blend together into a closely-knit partnership that enables new offerings and revenue streams to be engineered at a pace we can now only imagine."

If Accenture is right, AI should be able to help banks overcome what they cited in the *ATM Software Trends Survey* as their main challenges in improving innovation in the ATM channel: high costs (mentioned by 45 percent), legacy technologies (19 percent), and integration difficulties (19 percent).

Summary of key points

▶ Just 14 percent of consumers say their banks are "extremely effective" at delivering contextually relevant experiences, and 65 percent want banks to make it easier to discover and compare products.

▶ Banco Bradesco saw a 56 percent increase in monthly loan applications and a 30 percent rise in conversion rates when it began delivering AI-driven personalized loan offers to its customers.

▶ Accenture believes artificial intelligence will drive the movement from core legacy banking systems to modern cloud-based systems, due to its ability to reverse engineer software code and create applications using natural language.

Advancing ATM technologies in the Windows 11 era

For more than 20 years, ever since ATMs moved from the OS/2 operating system to Windows, upgrades have been a nearly constant consideration. This year is no exception. Manufacturers and financial institutions are preparing to migrate machines from Windows 10 to Windows 11. As with all upgrades, the shift brings challenges in hardware compatibility, regulatory timelines, and resource constraints.

Microsoft will end mainstream support for Windows 10 over the coming years, with October 14, 2025, marking a major cut-off for many builds. For financial institutions, that means ATMs running on older versions of Windows 10 will no longer receive critical security patches, creating potential compliance and fraud risks.

ATM makers are responding. Diebold Nixdorf became the first to deploy Windows 11 on live ATMs in late 2024, using the Windows 11 IoT Enterprises LTSC 2024 version. Hyosung Americas and NCR Atleos are preparing their systems as well. Windows 11 promises long-term support through 2034, offering financial institutions a more stable software horizon.

About 60 percent of bank respondents to the *ATM Software Trends Survey* have either already upgraded some or all of their ATMs to Windows 11 (23 percent) or are planning to start migrating machines soon (37 percent).

While the move to Windows 11 is necessary, it's far from simple. Institutions face several key obstacles. Many older ATM cores simply can't run Windows 11.

As ATM sales and service provider Edge One wrote on LinkedIn, Intel Gen 4 processors and NCR 30-series models cannot support Windows 11 and must be replaced by 2026. Intel Gen 6 or 7 cores may run Windows 10 through 2032 with updates, but these systems still require BIOS and TPM upgrades. Intel Gen 10 or newer processors are fully compatible with Windows 11.

As always, time and logistics present challenges. A fleet-wide ATM upgrade typically takes 9-12 months. That timeline shrinks quickly when factoring in chip shortages, shipping delays, and limited technician availability. With over 450,000 ATMs in the U.S. serviced by only about 14,600 technicians, scheduling upgrades becomes more difficult as deadlines approach.

The migration to Windows 11 isn't happening in a vacuum. Institutions are also dealing with PCI compliance updates and other regulatory changes. Without careful planning, banks risk making short-term fixes only to face additional costly upgrades shortly thereafter.

The challenges are real, but financial institutions can mitigate risks and even turn migration into a strategic advantage. Practical strategies include:

▶ **Inventory and Assess Your Fleet** – Start by cataloging every ATM: processor generation, OS version, TPM presence, and firmware status. From there, institutions can classify machines into three categories: replace, upgrade, or safe.

▶ **Prioritize Security and Compliance** – Machines running unsupported Windows 10 builds or outdated processors pose immediate risks. These should be targeted for replacement or upgrades first to ensure PCI compliance and continued vendor support.

▶ **Plan Phased Rollouts** – Avoid last-minute scrambles by designing a multi-year rollout plan. Include software upgrades for machines with compatible hardware and full replacements for end-of-life models.

▶ **Make Future-Proof Investments** – When replacing machines, financial institutions should invest in modern cores (Intel Gen 10 and newer) that can support not only Windows 11 but also future OS updates. This reduces the likelihood of facing another costly upgrade cycle in just a few years.

▶ **Evaluate ATM Functionality** – Not every ATM needs to offer every service. In communities where deposit-taking ATMs aren't heavily used, banks might save money by deploying

simpler, Windows CE cash dispensers that can still offer advanced features like cardless withdrawals and multilingual support.

Summary of key points

▶ Windows 11 promises long-term support through 2034, offering financial institutions a more stable software horizon.

▶ About 60 percent of bank respondents to the *ATM Software Trends Survey* have either already upgraded some or all of their ATMs to Windows 11 or plan to start migrating machines soon.

▶ Intel Gen 4 processors cannot support Windows 11 and must be replaced by 2026. Intel Gen 6 or 7 cores may run Windows 10 through 2032 with updates, though BIOS and TPM upgrades will be needed. Intel Gen 10 or newer processors are fully compatible with Windows 11.

Interview insights

What is the general attitude towards Windows 11 and ongoing ATM OS upgrade cycles in your region? To what extent do you think alternative operating systems like Linux are gaining traction?

In Europe and Latin America, the industry follows a progressive upgrade schedule toward Windows 11, ensuring security and compatibility. However, there is a growing interest in Linux and open platforms as a means of cost optimization, flexibility, and reducing dependencies. The challenge for banks is to manage the transition while ensuring operational continuity, cybersecurity, and network homogeneity.
*— **Multinational financial services professional in Spain***

We see Windows as a solid operating system for the self-service industry with a growing necessity for frequent and fast updates. However, update times from one version to another are still relatively long. The openness to alternative operating systems like Linux and the possibility of incorporating them is still a challenge (or hope) that requires development.
*— **Financial institution professional in Colombia***

Windows 11 is not really welcomed by businesspeople in banks, as it does not add any real benefits (apart from being on a later level of Windows). My view is banks will delay as long as possible before upgrading. Linux has been talked about for the last 20 years, but the cost of change from a Windows platform outweighs any real benefit.
— John Ennis, Cennox, EMEA

Linux is certainly gaining traction, but it's a slow and steady process, not a revolution. Its appeal is strongest with new, agile players like the Independent ATM Deployers (IADs), who are building their networks from scratch and can capitalize on the lower licensing costs and greater customization of Linux.
— Information technology professional in Malaysia

ATM OS upgrades are always a pain, with extensive testing requirements. The benefits of the upgrades don't outweigh the pain of getting a stable system upgraded.
— Multinational bank professional in Asia

Windows, being the widest used OS in ATMs machines, is also prone to the highest cyberattacks and antivirus/OS patches. We are seeing demand from various customers to invest and explore different operating systems. It's just a start but likely to grow.
— Ziabuddin Shah, Rototype.SpA, Middle East Dubai - UAE

If we can move the UI to mobile, maybe we won't need an operating system on an ATM.
— Bank professional in the U.S.

Windows upgrades are a complete distraction from feature innovation and investment cycle. Hardware and software companies across the industry that create this false urgency and perpetually sell aged hardware slow down investment in technology that matters. Linux doesn't get traction because someone needs to step out in front and show the way.
— Bill Friend, Huntington Bank, U.S.

New opportunities through the first cloud-native XFS standard for ATMs

About 19 percent of bank respondents to the *ATM Software Trends Survey* said they were exploring alternative options as part of their evaluation of Windows 11. While banks have long leaned on proprietary systems for much of their technology infrastructure, including ATMs, that may be starting to change.

In its *Banking: The Future Is Back* report, Accenture predicts banks will fully embrace open-source architecture like the Linux operating system by 2030. As part of that switch, it said, "Banks will increasingly collaborate and share common industry code that benefits the entire industry – much like Wi-Fi standards – enabling open-source banks to collaborate more seamlessly with fintechs and each other."

For more than two decades, the ATM industry has been working to modernize the long-running CEN/XFS 3.x standard by moving to an OS-agnostic, cloud-friendly, API model. The latest release of the specification, called XFS4IoT, was published in March 2024 by the XFS Committee of the European Committee for Standardization (CEN), an association that brings together the standards bodies of 34 European countries.

XFS4IoT removes the old Windows-only constraint and allows multi-vendor interoperability. This enables banks to run ATM software on different operating systems and mix their hardware more freely. It also enables devices to be addressed and monitored locally or from cloud apps. This facilitates faster feature rollouts and easier centralized management of machines.

XFS4IoT also enhances security by defining end-to-end security, including mutual authentication, with support for secure elements embedded in devices.

Major ATM hardware and software suppliers are supportive of the standard, positioning it as the path to multi-vendor choice and lower cost-of-ownership of ATMs.

"With XFS4IoT, maintenance and upgrades become far more streamlined and cost-effective," said KAL Global EVP of Sales Steve Hensley. "By enabling cloud-based ATM operations, banks can reduce infrastructure demands and deployment complexity. The ability to perform remote updates and diagnostics also cuts down on physical service calls. All of this contributes to lower total cost of ownership and a more scalable, efficient ATM network."

However, despite its potentially huge benefits, relatively few bank respondents to the *ATM Software Trends Survey* have heard of it. Fifty-four percent said they had either no or low familiarity with it. Just 14 percent said they understand it in some detail.

When asked to rank the benefit that interests them the most, 30 percent cited its ability to make ATMs operating system agnostic. Two other benefits, facilitating flexible hardware integrations so ATMs can support non-traditional devices and making ATMs cloud-based to support ATM services anywhere with an internet connection, were each mentioned by 28 percent of respondents.

About 14 percent of respondents chose XFS4IoT's ability to deliver end-to-end security as the benefit that interests them most. Perhaps it should rank higher. Kit Patterson, a senior software architect at KAL, discussed rapidly evolving security threats in a recent podcast. Mentioning contactless and tap-and-go payments, he noted that "new technology introduces new risks."

While AI holds promise in identifying fraudulent patterns, Patterson said "there is no silver bullet" for security. The best way to improve ATM security is by taking a proactive approach. He encourages banks to think about not only current threats but about how systems could be compromised in the future.

Summary of key points

▶ The ATM industry has been working to modernize the long-running CEN/XFS 3.x standard by moving to an OS-agnostic, cloud-friendly, API model.

▶ With XFSIoT, banks can run ATM software on different operating systems, more easily maintain multi-vendor networks, and lower ATM cost-of-ownership.

▶ Just 14 percent of bank respondents to the *ATM Software Trends Survey* say they understand XFS4IoT in some detail.

Crossing the digital divide with outsourcing + advanced software

While Paraguay's Central Bank is committed to promoting electronic payments, cash is still popular, especially in more rural areas and for small-value transactions. Change is happening at a rapid pace, however. According to the Central Bank, instant payments in the country will surpass 172 million transactions by the end of 2025, up 113 percent since 2023.

Ueno Bank, a digital bank with almost 2 million customers (almost one-third of the country's population), is poised to benefit from this transition. Using a combination of cloud-based software and an experienced outsourcing partner, it developed a strategy that uses advanced ATMs as a way to facilitate digital transactions while still giving customers ready access to cash.

Working with KAL, Belltech, a Latin American provider of ATM services, and technology partner iTTi, Ueno Bank created a network of advanced ATMs called Digital Experience Terminals. Many of the 700 terminals the bank has rolled out so far are located at some of the bank's 70 physical branches throughout Paraguay.

The branches are welcoming spaces, complete with play areas for children and sports spaces where customers can celebrate the national football (soccer) team. In addition to standard ATM transactions, customers can use the Digital Experience Terminals to purchase tickets for music and sporting events, pay taxes, exchange currency, and perform other advanced functions.

With innovation and scalability as its two biggest requirements, Ueno Bank technology partner iTTi joined forces with Belltech and KAL to implement three KAL solutions: K3A (an advanced ATM application), KTC (a remote monitoring and management system), and KTH (a card-acquiring host system).

KTH replaced a legacy host system that couldn't adequately support cloud-based software. The KTC monitoring/management system controls ATM networks down to individual ATMs and components, a key requirement for machines that perform advanced transactions. The K3A application gave the bank the ability to create a roadmap for current and future digital transactions.

The project's first phase, completed in 2021, involved cloud and software migration and deploying contactless transactions. As with many digital strategies, contactless transactions were the "gateway" service for the bank and its customers. The project ramped up in 2024, with support for 50 new transaction types. The bank's ambitious plans are to add 500 more advanced ATMs by the end of 2025 – for a total of 1,200 machines.

The cloud-based software also enabled Ueno Bank to make security enhancements and more quickly satisfy regulatory requirements like PCI DSS by leveraging Amazon's AWS infrastructure. With AWS, the bank gains compliant pre-certified services, robust encryption and key management tools (like AWS KMS and CloudHSM), and automated security services (such as AWS Config, GuardDuty, and Security Hub). This gives the bank further audit trails, continuous monitoring, and automated compliance reporting, which streamlines PCI DSS audits.

Summary of key points

▶ Paraguay's Ueno Bank is using advanced ATMs, called Digital Experience Terminals, as part of its ambitious digital-first plans for expansion. It is poised to benefit from the country's rapid movement from cash to electronic payments.

▶ Ueno Bank migrated its legacy host system and implemented new ATM software and a remote management and monitoring system with the assistance of an experienced provider of outsourced ATM services.

▶ More than 700 terminals support 50 advanced transactions, including ticket purchases, currency exchange, and tax payments. Ueno Bank plans to add 500 more terminals in the next few months.

Outsourced ATM functions are increasingly on the table

While open-source software architecture can potentially offer future financial savings for banks, outsourcing offers a more immediate way for them to lower the operating cost of their ATM networks. In addition to cost reduction, outsourcing can improve efficiency and shift portions of risk exposure – such as theft, vandalism, or other security incidents – away from the bank.

Few banks manage all aspects of their ATM networks. Among bank participants in the *ATM Software Trends Survey*, the most popular function for outsourcing to third parties is hardware maintenance, including both routine and emergency ATM support. Named by 64 percent of respondents, it outpaced cash management (52 percent) and operational monitoring (49 percent).

Outsourcing isn't one-size-fits-all. Banks can hand off specific functions or even fully transfer day-to-day operations through ATMs-as-a-Service (ATMaaS). Much like other "as-a-service" offerings, the goal is to delegate a complex, non-core function so the institution can focus on more strategic priorities.

In this model, the bank supplies the location while the ATMaaS provider delivers everything else – hardware, software, and end-to-end support and maintenance – for a predictable monthly fee. In some cases, the outsourcing partner will purchase the bank's existing ATMs, allowing them to remove the machines from their balance sheets. Major ATM manufacturers and specialized service firms offer ATMaaS.

By design, ATMaaS lightens the operational load on banks, trimming routine tasks such as device monitoring, remote patching, and level-1/level-2 support. Despite the advantages, only 19 percent of bank respondents to the *ATM Software Trends Survey* are using ATMaaS.

While the potential benefits are clear, outsourcing is far from a simple "yes" or "no" decision. It introduces new dependencies that, if not carefully managed, can compromise customer trust and regulatory compliance.

Compliance and security are key considerations. No matter who manages the ATMs, regulators will still hold the bank accountable. That means any outsourcing agreement must align with requirements for data protection, anti-money laundering, and payment card industry (PCI) standards. Banks should expect full transparency from their vendors and insist on regular audits.

ATMs remain prime targets for criminals, both physically and digitally. The right partner must demonstrate robust fraud prevention measures and the ability to respond in real-time when threats emerge. If customers lose trust in the safety of their transactions, the bank – not the vendor – will pay the price.

While outsourcing is a cost-saving strategy, the math isn't always straightforward. Transition costs, ongoing service fees, and potential penalties for missed service levels can add up. Banks should model the total cost of ownership carefully and ensure the contract leaves room for future flexibility. To ensure continued good performance, service quality, up-time guarantees, and responsiveness should be at the heart of every outsourcing agreement.

Strong governance is a necessity. Contracts should spell out service-level agreements, performance reviews, data ownership, and exit strategies. Banks that build strong oversight mechanisms are far more likely to realize the benefits of outsourcing without losing control.

Done well, outsourcing allows banks to improve efficiency, enhance security, and free up resources for digital transformation. Done poorly, it can erode trust, compromise compliance, and

lock the institution into costly dependencies. To reap the benefits, banks must approach outsourcing with a clear strategy, strong governance, and an eye on the future.

Summary of key points

▶ Hardware maintenance is the most popular ATM operation to outsource among bank participants in the *ATM Software Trends Survey*, followed by cash management and operational monitoring.

▶ ATMaaS is an emerging model in which the provider delivers hardware, software, and end-to-end support and maintenance of ATMs for a predictable monthly fee.

▶ Selecting the right partner and strong governance are the keys to achieving the benefits that the outsourcing model promises.

Interview insights

What are your thoughts on the demand for third-party ATM services and fully outsourced ATM-as-a-Service in your region? What factors are promoting or limiting the adoption of these strategies?

The cost and complexity of owning and operating ATMs are increasing very much. ATM-as-a-service is considered as a part of strategy to reduce capex, but at the same time banks are worried about the loss of control. It is just near in the vicinity for banks to overcome their fears.
— Lakshmi Narayanan, BDO Philippines, the Philippines

The factors limiting their adoption are mainly regulatory, operational control, scale, and trust in the customer experience. At the organization I work for, we believe in a combination: direct management of the network where it adds strategic value and collaboration with third parties in areas where it generates efficiencies.
— Multinational financial services professional, Spain

I fully support outsourced ATM services. In my region, it is prevalent in the UK, Netherlands, France, Belgium, Sweden, and others are looking at pooling ATMs in many countries. Cost is the major factor driving this, and the reduction of ATMs in many countries means economies of scale. The benefits are huge.
— John Ennis, Cennox, EMEA

Banks in Malaysia are increasingly open and do outsource selected third-party ATM services (e.g., cash management, monitoring, first-line maintenance). Interest in a fully outsourced ATM-as-a-Service (ATMaaS) is growing, particularly among mid-sized and smaller banks that see ATMs as a cost centre rather than a differentiator or branding opportunity.
— Michael Kumar, Sea Unity Sdn Bhd, Malaysia

I believe third-party ATM services are vital to the industry and critical for maintaining competitive pricing as well as performant vendors. An ATM is a fixed asset for seven years. If the OEM manufacturer does not meet their service performance levels consistently, there is often no variable alternative because of proprietary tools and software. The industry needs software and service vendors that are capable and equipped to keep these assets working at maximum efficiency if OEM providers have challenges.
— Bill Friend, Huntington Bank. U.S.

We have full ATM-as-a-Service deployed and are definitely an advocate for the approach. It provides us with cost savings as well as being able to draw on industry expertise. I expect more FIs to follow suit in the UK as they see the benefits that specialization provides.
— Multinational financial services professional in the UK

The demand for third-party ATM services and fully outsourced ATM-as-a-Service in my region is slow. Newer banks have no issue with the approach, as there is so much to do after launching. There is no time to manage and operate an ATM network, as there is an alternative digital channel. For the larger banks, there is an attachment to the ATM channel.
— Ricky Fang, Impromptu Solutions Sdn Bhd, Malaysia

It depends on the priority and strategy of the FI. If the FI prioritizes pure direct P&L, outsourcing is more appealing. You are able to dramatically reduce headcount, so your bottom line is impacted immediately. The drawback is, if you are not satisfied with the services and want to bring it back in house, hiring could be challenging…ATM-as-a-Service is not a direction we are looking to go at this time.
— Whit Coolbaugh, State Employees' Credit Union, U.S. (North Carolina)

It is always a matter of balancing businesses between in-source and out-source, but what is more important is satisfying clients by offering a FAST, reliable and secure service.
— Multinational bank professional in Romania

Demand for third-party/outsourced ATM services is growing cautiously. The decision hinges on a total cost-of-ownership analysis. The model is attractive for cost reduction (shifting from capital to operational expenditure) and operational simplicity, especially for smaller banks. For larger banks, the key limiting factor is the need for service differentiation. They often view ATM capabilities as a strategic, branded customer touchpoint and are reluctant to outsource a function they use to compete. Control over security and customer experience is also a major concern.
— Industry colleague in Republic of China

I think it is attractive for Ops managers, but Risk managers are more cautious. Vendors need to emphasize the long-term total cost savings; and reinforce the reliability that they are guaranteeing.
— Commercial bank professional in Ireland

ATMs moving forward into a digital future

For more than 60 years, the ATM has never stood still. From its earliest days as a simple deposit box to today's software-driven cash recyclers, it has continually adapted to meet the needs of banks and their customers. Even in an era where digital channels dominate, our survey shows that ATMs remain not only relevant, but essential. Banks are using them to extend services, improve convenience, and contain costs.

The story of the ATM is, in many ways, the story of modern banking itself – a story of resilience, reinvention, and addressing customer demand in new ways. Whether through innovations like contactless transactions, personalization powered by AI, or efficiency gains from cash recycling and outsourcing, the ATM continues to evolve.

Banks that embrace this evolution – strategically, securely, and with a clear vision for customer experience – will be best positioned to thrive.

Survey demographics

Banks and financial institutions remained the most represented group in the survey. However, their participation dropped slightly compared to last year's survey, from 37 percent to 35 percent. Independent ATM deployers (IADs) and payment service providers (PSPs) got involved to a greater degree this year, accounting for 16 percent and 10 percent of participants, respectively. Rounding out the total were fintech service providers (13 percent), hardware vendors (11 percent), and business consultants (7 percent).

North America remains the most represented region at 43 percent, despite a slight participation drop from last year. South America (8 percent), Africa (11 percent), and Europe (26 percent) were more represented this year, while APAC representation (2 percent) decreased.

Respondents reporting ATM fleet sizes of 1-2,000 increased from last year, accounting for 75 percent of respondents, while the number of respondents with over 2,000 ATMs decreased to 25 percent.

Analysis of financial institution survey results

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

1. Please identify your industry segment.

Other 39%

Financial Institution 61%

2. In what global region are you based?

North America 43%

Europe 26%

Asia 8%

Africa 11%

South America 8%

Australia/Pacific 2%
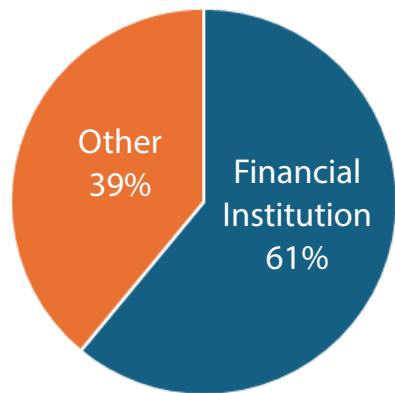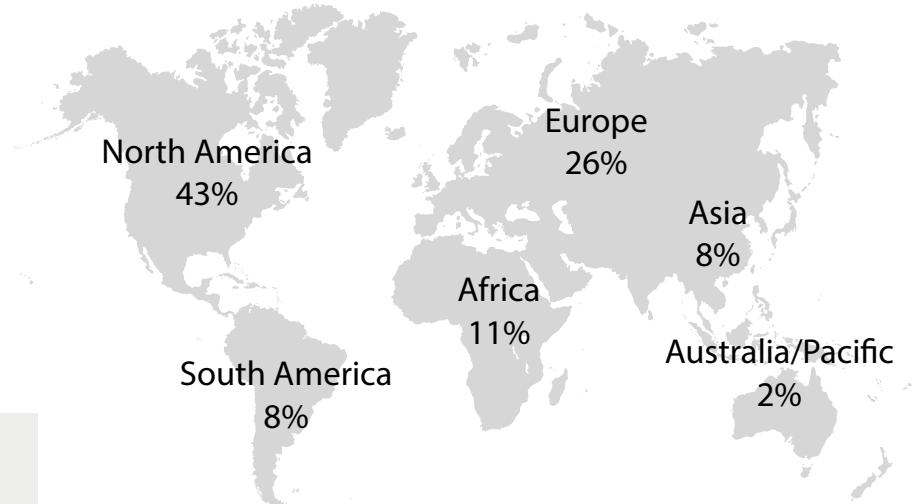
3. How many ATMs do you have?

50% — 1-500

25% — 501-2,000

25% — Over 2,000
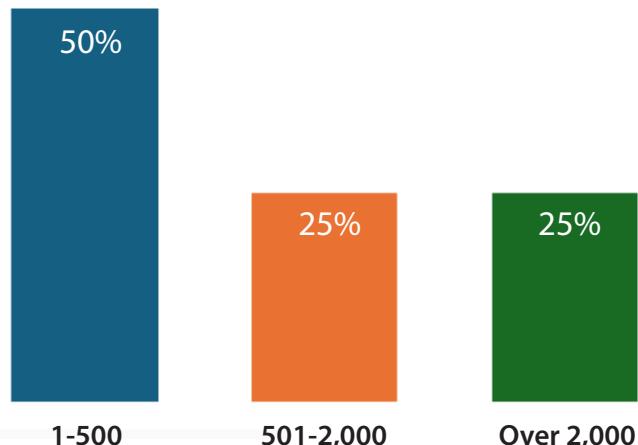
4. In the last 12 months, has the way you delivered your services made you more or less reliant on your ATMs?

More reliant 51%

Less reliant 8%

Stayed about the same 41%
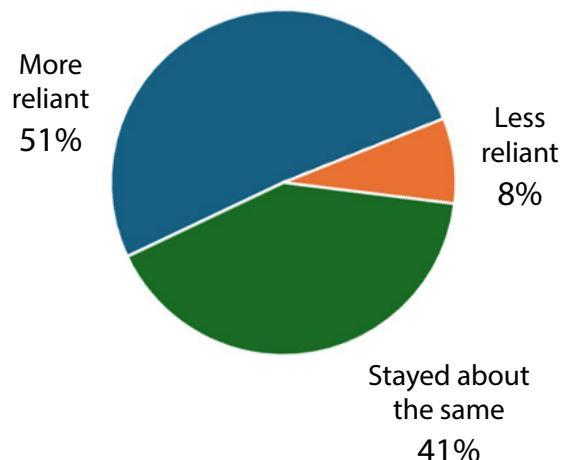
5. **How has customer demand for ATM services changed within your self-service network over the past few years? Please select one option for each category below.**
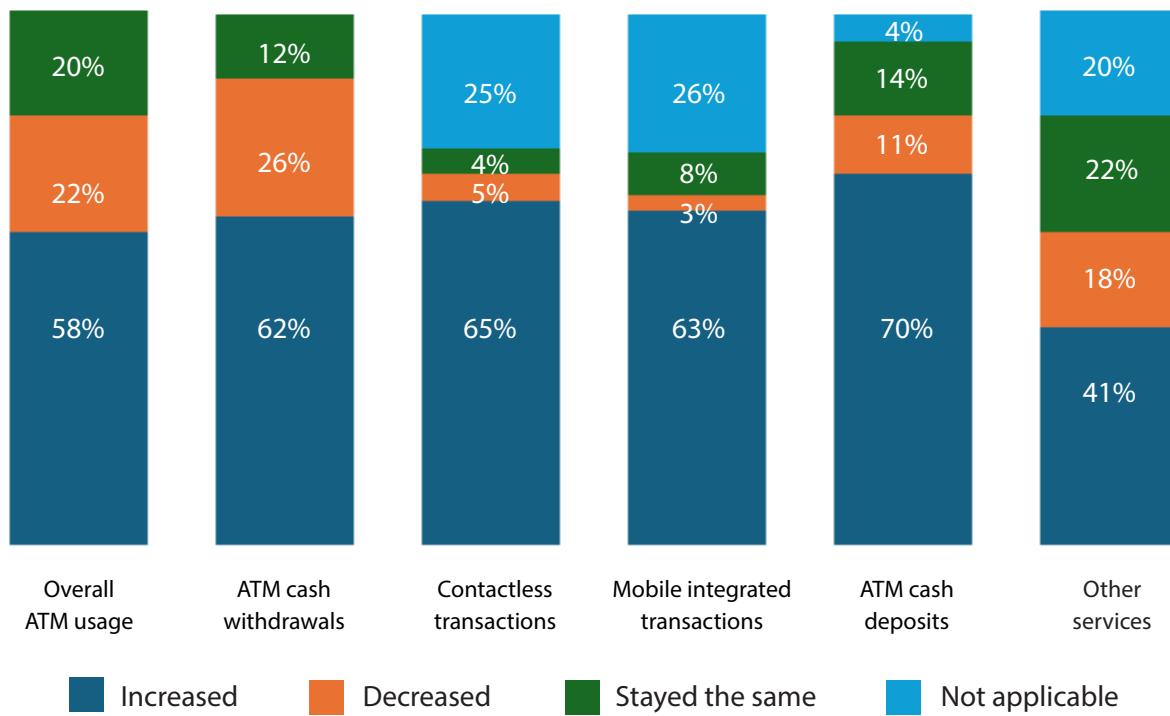
	Increased	Decreased	Stayed the same	Not applicable
Overall ATM usage	58%	22%	20%	
ATM cash withdrawals	62%	26%	12%	
Contactless transactions	65%	5%	4%	25%
Mobile integrated transactions	63%	3%	8%	26%
ATM cash deposits	70%	11%	14%	4%
Other services	41%	18%	22%	20%

Legend: ■ Increased ■ Decreased ■ Stayed the same ■ Not applicable

6. **Regarding age demographics, in your opinion/experience, please rank these ATM user generations from most active to least (with 1 being most active and 4 being least active).**

	Most Active	Active	Less Active	Least Active
Boomers (Aged 61-75)	20%	20%	12%	48%
Gen X (Aged 45-60)	34%	30%	34%	2%
Millennials (Aged 29-44)	21%	31%	40%	8%
Gen Z (Aged 18-28)	24%	20%	14%	42%

Legend: ■ Most Active ■ Active ■ Less Active ■ Least Active
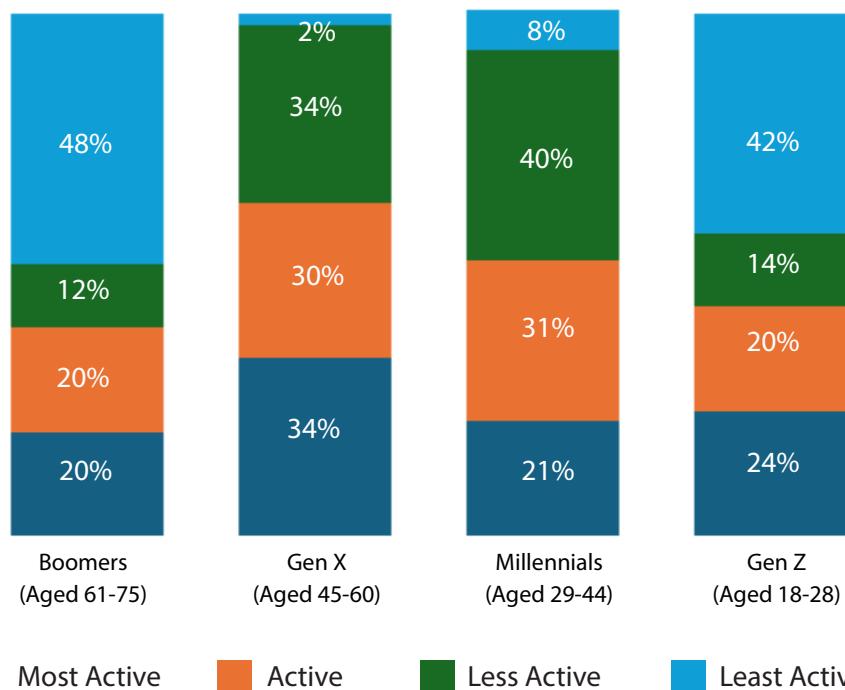
7. How frequently does your typical ATM customer visit the ATM? Please select one.
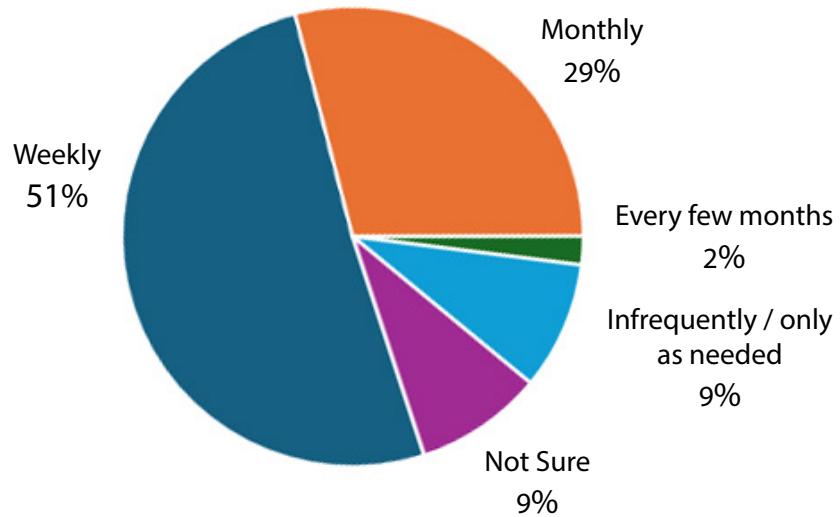
Monthly
29%

Weekly
51%

Every few months
2%

Infrequently / only
as needed
9%

Not Sure
9%

8. What factor do you think is most important to customers when selecting which ATM to use? Please select one.

Safety
26%

Cleanliness
2%

Proximity
46%

Trustworthy Brand
17%

Hardware Integrity
(not damaged) 2%

Other
5%

Not sure
1%

9. Which aspect of the ATM user experience do you think is most important to customers? Please select one.

Variety of services
17%

User-friendly UI
28%

Personalization
3%

None of the above
1%

Speed
44%

Other
7%
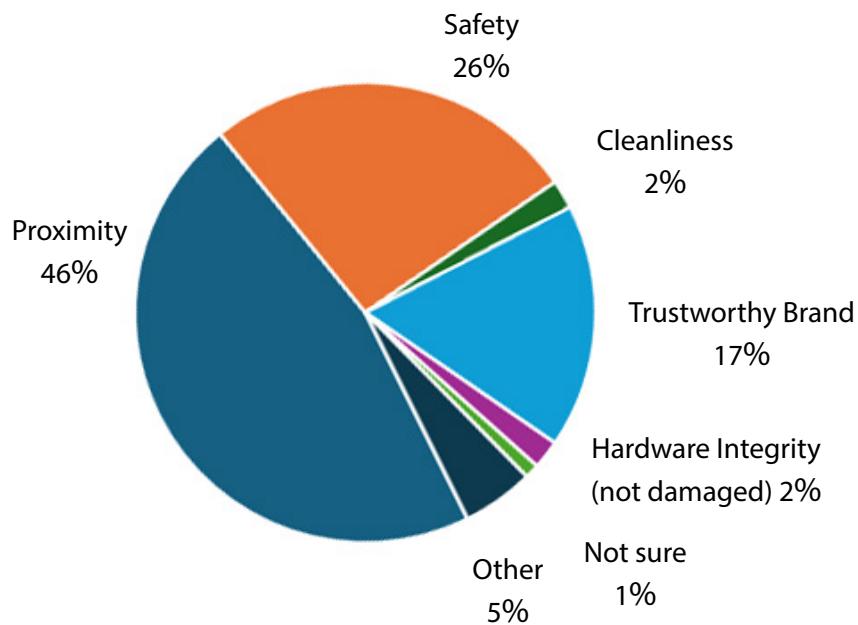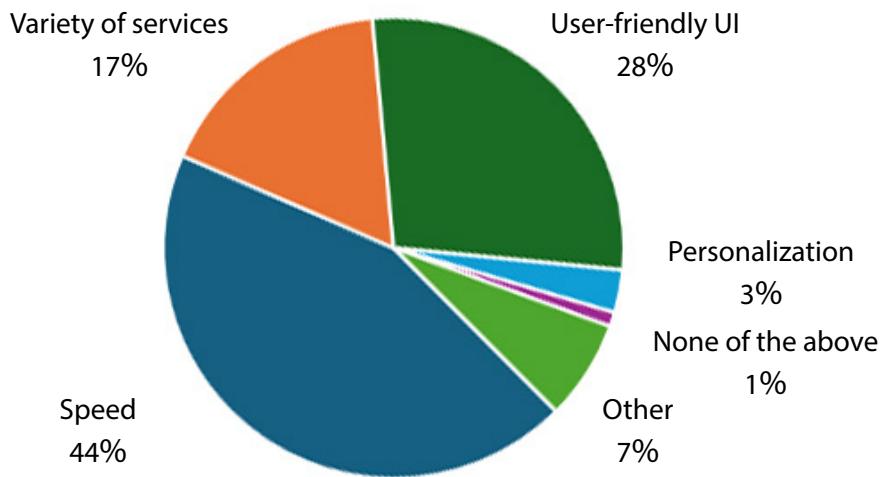
10. Which approaches have you implemented to align your ATMs with digital channels in the past 2 years? Please select all that apply.

Approach	%
Contactless support	55%
QR code integration	35%
Pre-staged transactions	30%
Cross-channel experiences	40%
Supporting expanded services in the ATM channel	41%
UI enhancements	49%
Personalization	31%
None of the above	8%
Other	2%
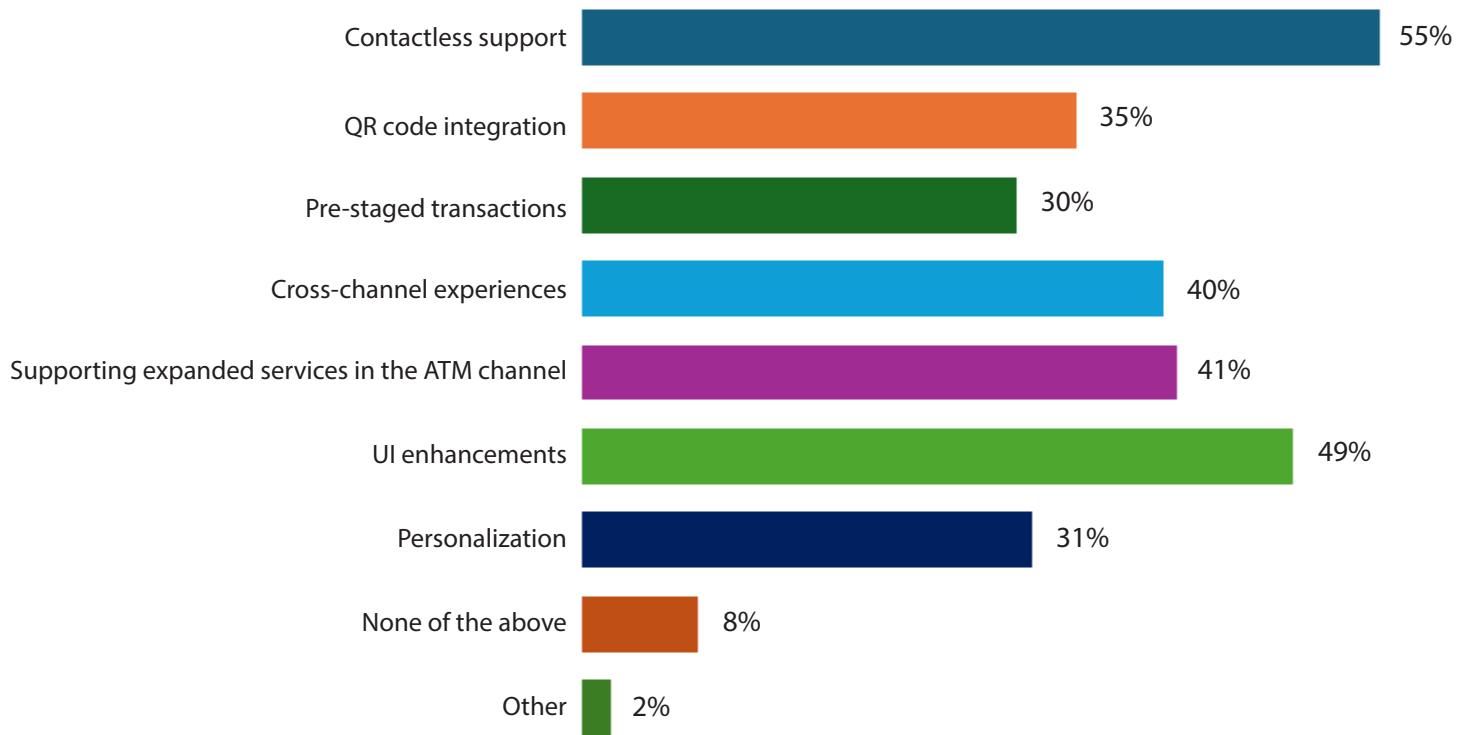
11. What factors are most important to you when selecting an ATM software supplier? Please select up to three.

Factor	Percentage
Easy integrations with diverse systems	52%
Enhanced user experiences (UI)	44%
State-of-the-art software tools for dev and testing	34%
Frequent software updates	13%
Fast delivery timescales	22%
Security	49%
Cost efficiency	43%
None of the above	2%
Other	1%
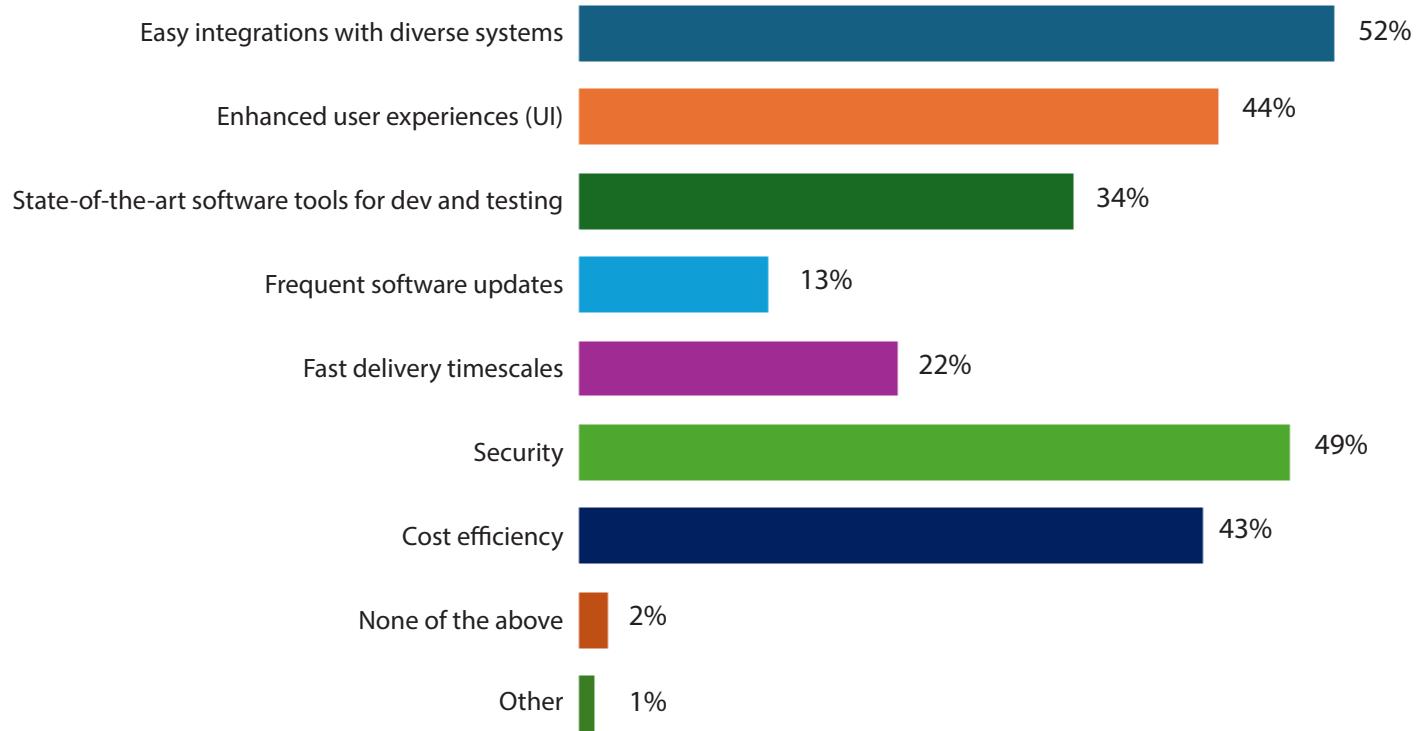
12. With Microsoft phasing out support for Windows 10, which situation best describes your ATM network?

Category	Percentage
Exploring alternative options	18%
No actions taken yet	18%
Other	4%
Already upgraded some or all ATMs to Windows 11	23%
Planning to start migrating ATMs to Windows 11 soon	37%

13. How familiar are you with XFS4IoT?

High familiarity –
I understand it in
some detail
14%

No familiarity -
I've never heard of it
33%

Low familiarity –
I only know the name
22%

Medium familiarity –
I know what it is
in simple terms
31%

14. The XFS standard powers 90% of the world's ATMs and XFS4IoT is the latest version – designed for secure and flexible innovation. We've listed key XFS4IoT capabilities below. Please select the one that is most interesting to you.

Flexible hardware integrations
– supporting non-traditional
ATM devices
28%

Delivering previously
unachievable
end-to-end security
14%

Operating system
agnostic – not just
Windows
30%

Cloud based - enabling ATM
services anywhere with an
internet connection
28%

15. Which third-party ATM services does your organization currently leverage? Please select all that apply.

Service	Percentage
Operational monitoring (real-time visibility and mgmt)	49%
Software hosting / SaaS (accessible online via subscription)	24%
ATM host processing (acquiring, authorizing, issuing)	43%
Hardware maintenance (routine and emergency ATM support)	65%
Cash management (forecasting, restocking)	52%
Security (protecting against physical and digital attacks)	34%
Full ATM network outsourcing (ATM-as-a-service)	19%
None of the above	1%
Other	4%

16. Which third-party ATM services does your organization plan to leverage in the next 2 years? Please select all that apply.

Service	Percentage
Operational monitoring (real-time visibility and mgmt)	37%
Software hosting / SaaS (accessible online via subscription)	27%
ATM host processing (acquiring, authorizing, issuing)	37%
Hardware maintenance (routine and emergency ATM support)	43%
Cash management (forecasting, restocking)	39%
Security (protecting against physical and digital attacks)	28%
Full ATM network outsourcing (ATM-as-a-service)	24%
None of the above	19%
Other	9%

17. What is the main challenge you would like to overcome to improve innovation in the ATM channel? Please select one.

Legacy technologies
19%

Integration difficulties
19%

High costs
46%

Regulatory requirements
5%

Customer resistance to change
6%

None of the above
1%
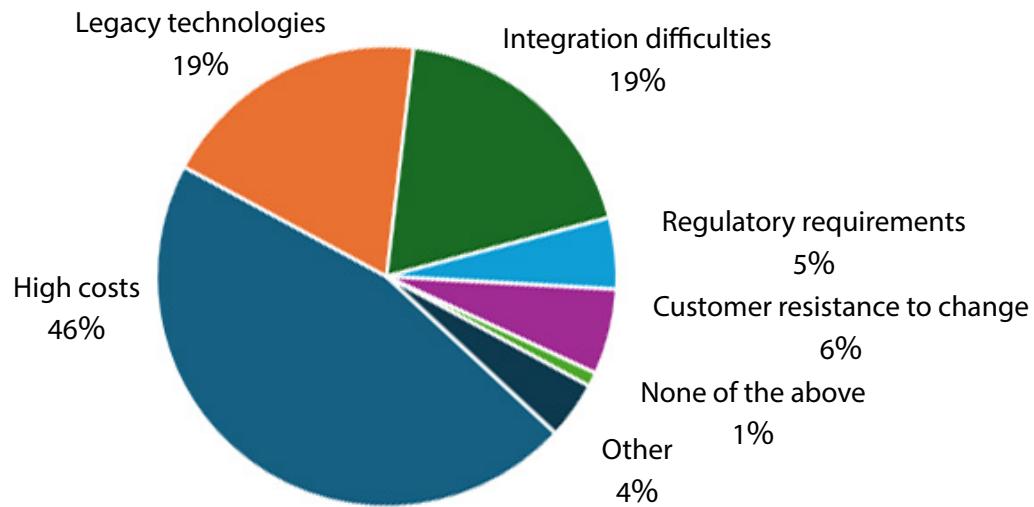
Other
4%

Analysis of NON-financial institution survey results

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

18. In what global region are you based?

North America
42%

Europe
25%

Asia
17%

Africa
8%

South America
6%

Australia/Pacific
2%
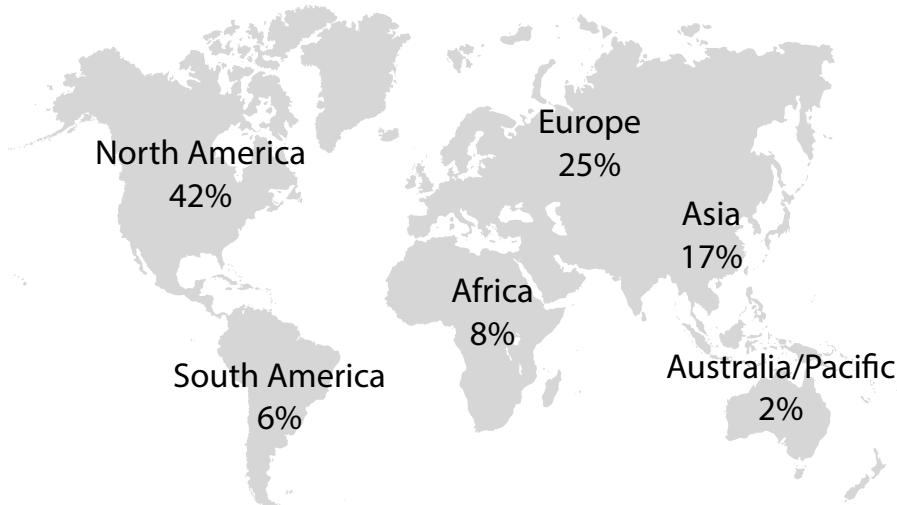
19. In the last 12 months, do you think the way banks and other financial institutions deliver their services has made them more or less reliant on their ATMs?

Less reliant
22%

Stayed about
the same
42%

Mor reliant
36%
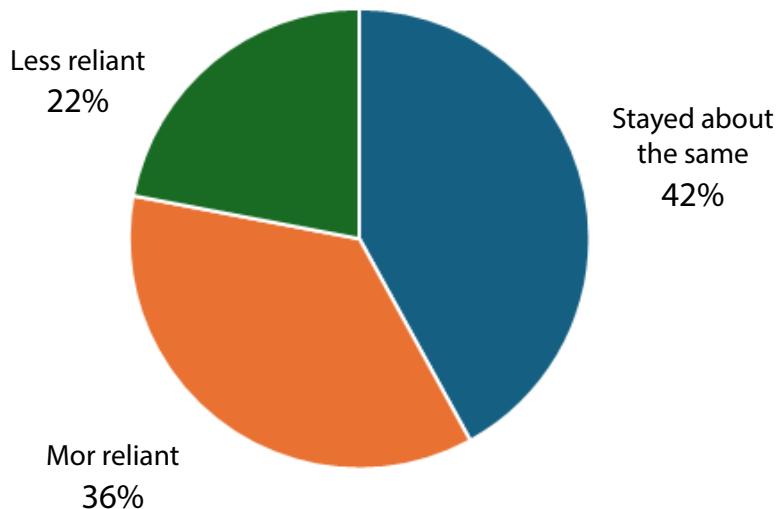
20. How do you think customer demand for ATM services has changed over the past few years? Please select one option for each category below.
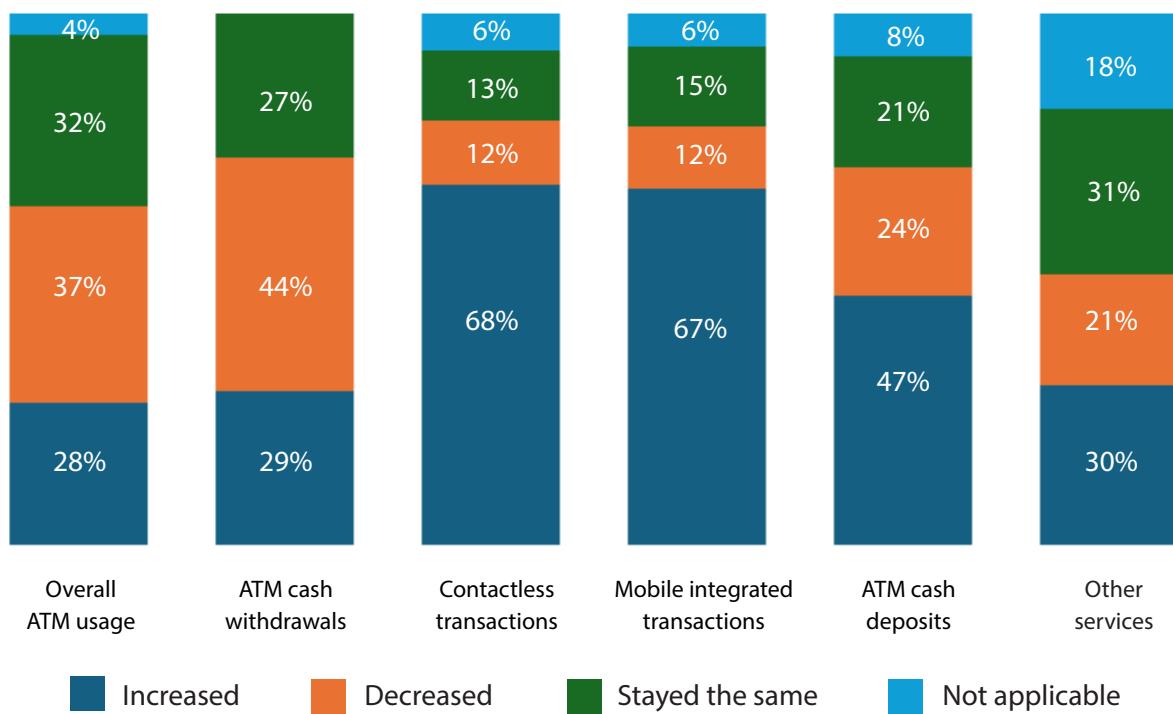
	Overall ATM usage	ATM cash withdrawals	Contactless transactions	Mobile integrated transactions	ATM cash deposits	Other services
Not applicable	4%		6%	6%	8%	18%
Stayed the same	32%	27%	13%	15%	21%	31%
Decreased	37%	44%	12%	12%	24%	21%
Increased	28%	29%	68%	67%	47%	30%

Legend: Increased — Decreased — Stayed the same — Not applicable

21. Regarding age demographics, in your opinion/experience, please rank these ATM user generations from most active to least (with 1 being most active and 4 being least active).

	Boomers (Aged 61-75)	Gen X (Aged 45-60)	Millennials (Aged 29-44)	Gen Z (Aged 18-28)
Least Active	27%	3%	13%	53%
Less Active	12%	27%	46%	15%
Active	25%	40%	24%	11%
Most Active	36%	26%	17%	22%

Legend: Most Active — Active — Less Active — Least Active
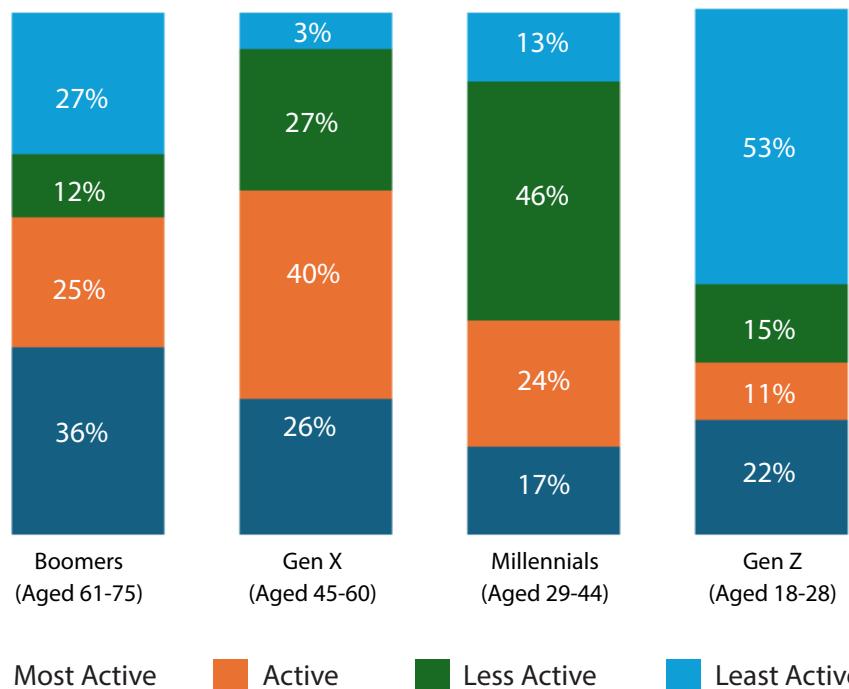
22. How frequently do you think a typical bank ATM customer visits the ATM? Please select one.

Monthly 32%

Every few months 10%

Infrequently / only as needed 16%

Not Sure 4%

Weekly 38%
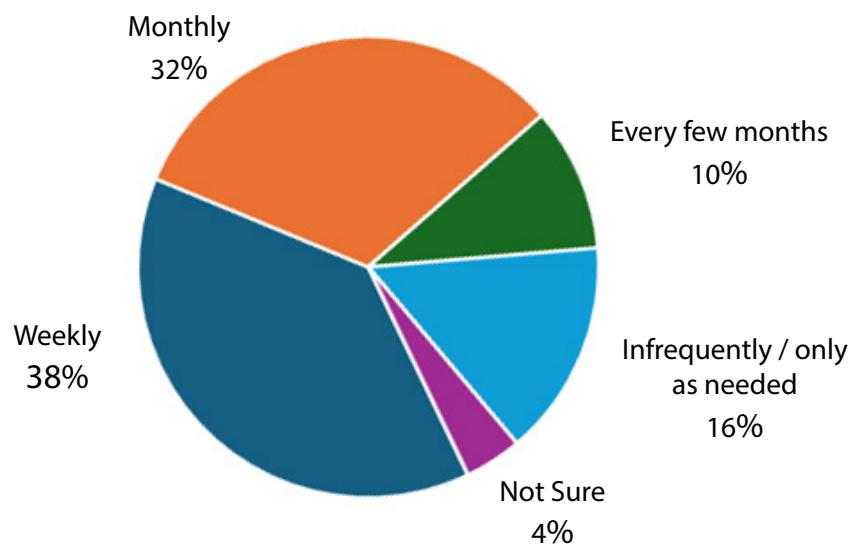
23. What factor do you think is most important to bank customers when selecting which ATM to use? Please select one.
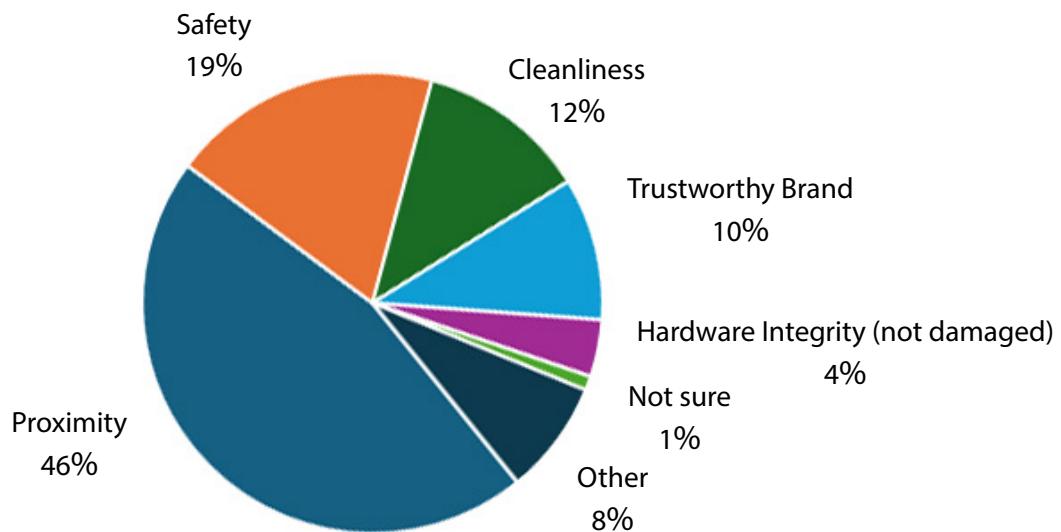
Safety 19%

Cleanliness 12%

Trustworthy Brand 10%

Hardware Integrity (not damaged) 4%

Not sure 1%

Other 8%

Proximity 46%

24. Which aspect of the ATM user experience do you think is most important to customers? Please select one.

- User-friendly UI 34%
- Personalization 10%
- None of the above 2%
- Other 5%
- Speed 27%
- Variety of services 21%
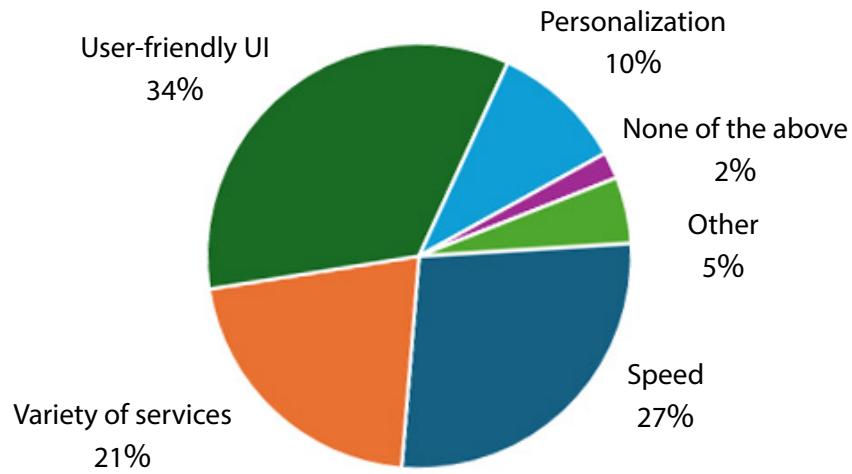
25. Which approaches do you think are most popular for aligning ATMs with digital channels? Please select all that apply.

Approach	Percentage
Contactless support	55%
QR code integration	41%
Pre-staged transactions	34%
Cross-channel experiences	38%
Supporting expanded services in the ATM channel	40%
UI enhancements	37%
Personalization	29%
None of the above	2%
Other	1%
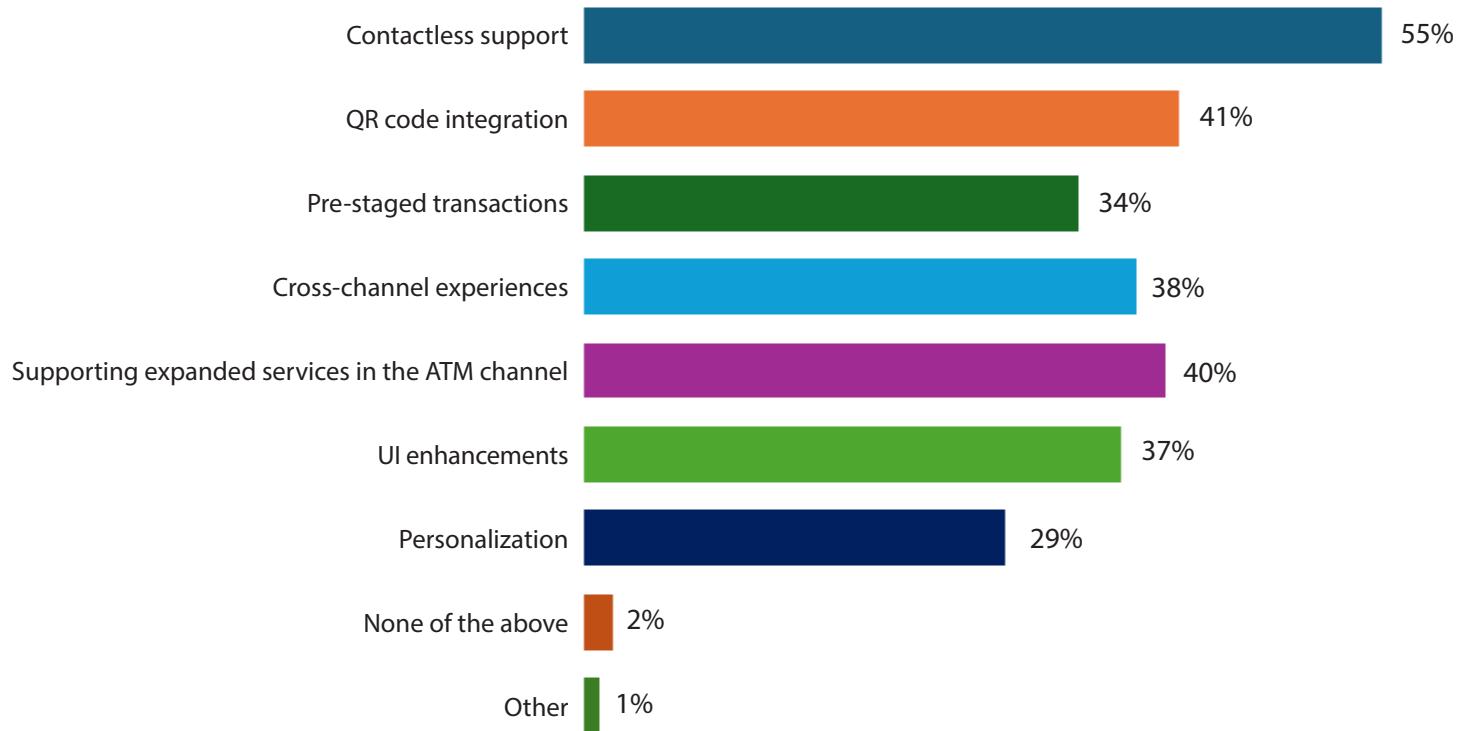
26. What factors do you think are most important to banks when selecting an ATM software supplier? Please select up to three.

Factor	%
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State-of-the-art software tools for dev and testing	17%
Frequent software updates	13%
Fast delivery timescales	29%
Security	44%
Cost efficiency	47%
None of the above	1%
Other	1%
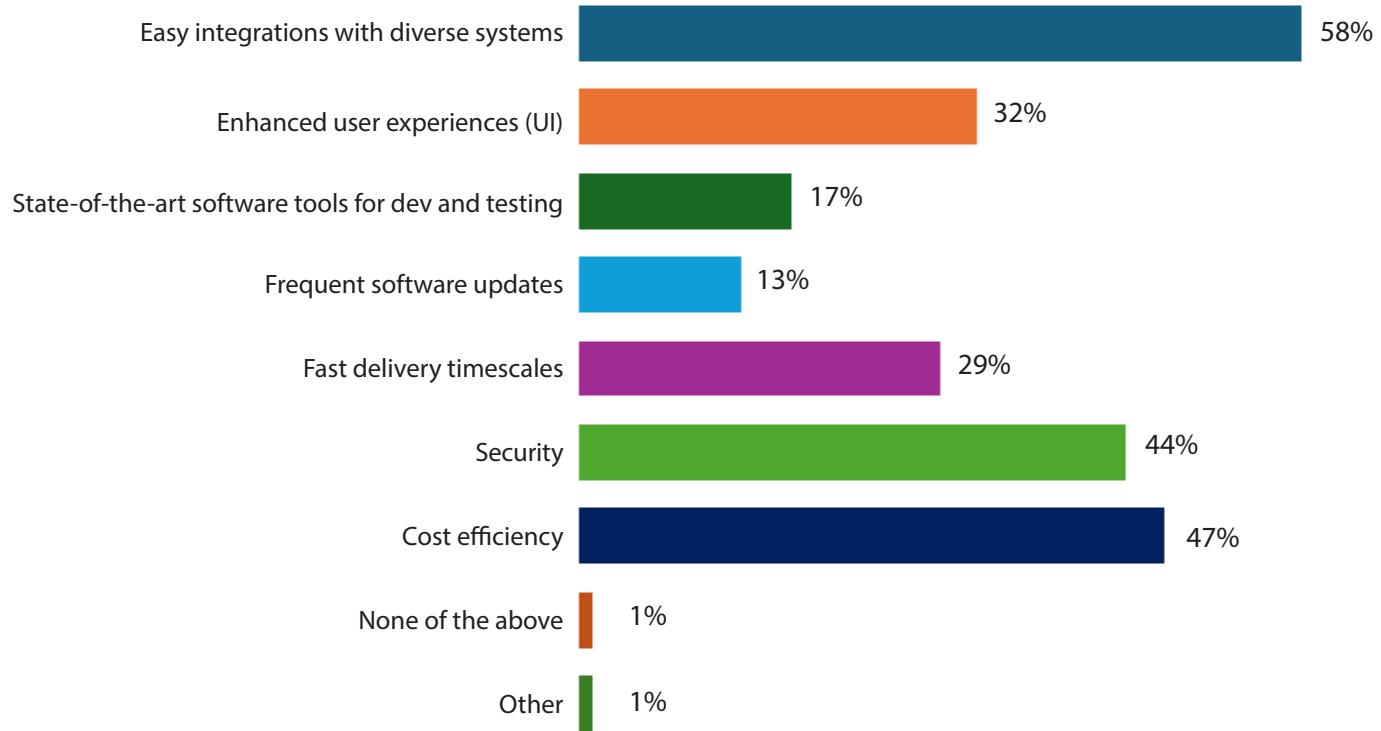
27. With Microsoft phasing out support for Windows 10, which situation do you think best describes most organizations with ATM networks?
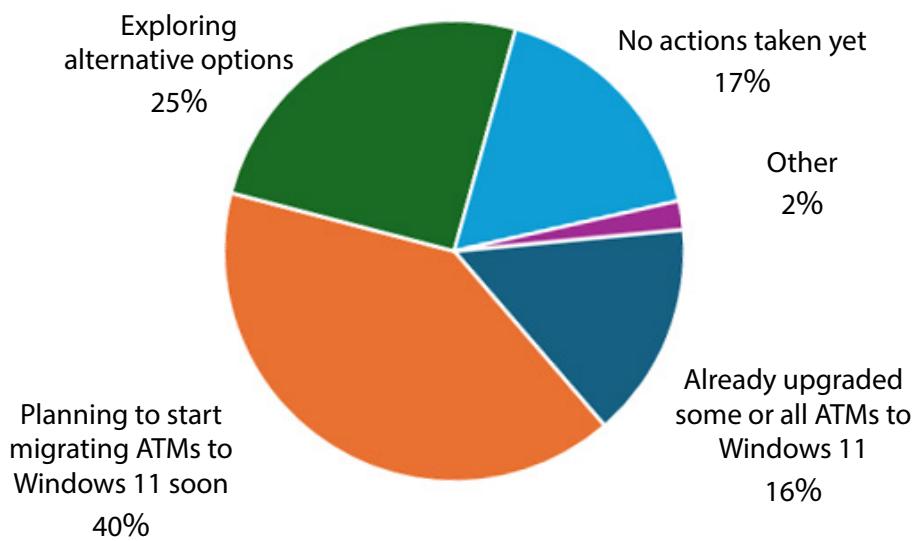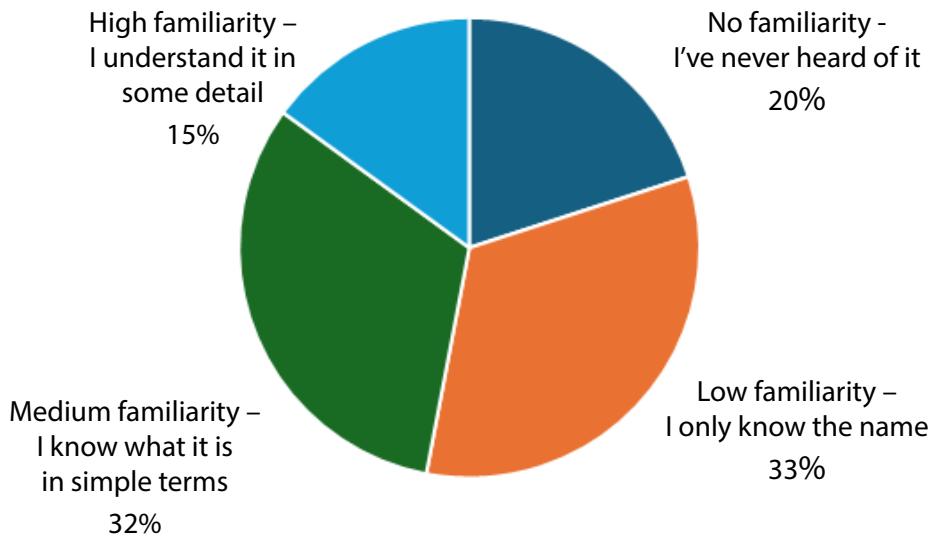
Category	%
Exploring alternative options	25%
No actions taken yet	17%
Other	2%
Already upgraded some or all ATMs to Windows 11	16%
Planning to start migrating ATMs to Windows 11 soon	40%

28. How familiar are you with XFS4IoT?

High familiarity –
I understand it in
some detail
15%

No familiarity -
I've never heard of it
20%

Medium familiarity –
I know what it is
in simple terms
32%

Low familiarity –
I only know the name
33%

29. The XFS standard powers 90% of the world's ATMs and XFS4IoT is the latest version – designed for secure and flexible innovation. We've listed key XFS4IoT capabilities below. Please select the one that is most interesting to you.

Cloud based - enabling ATM
services anywhere with an
internet connection
21%

Operating system
agnostic – not just
Windows
26%

Delivering previously
unachievable
end-to-end security
23%

Flexible hardware integrations
– supporting non-traditional
ATM devices
30%
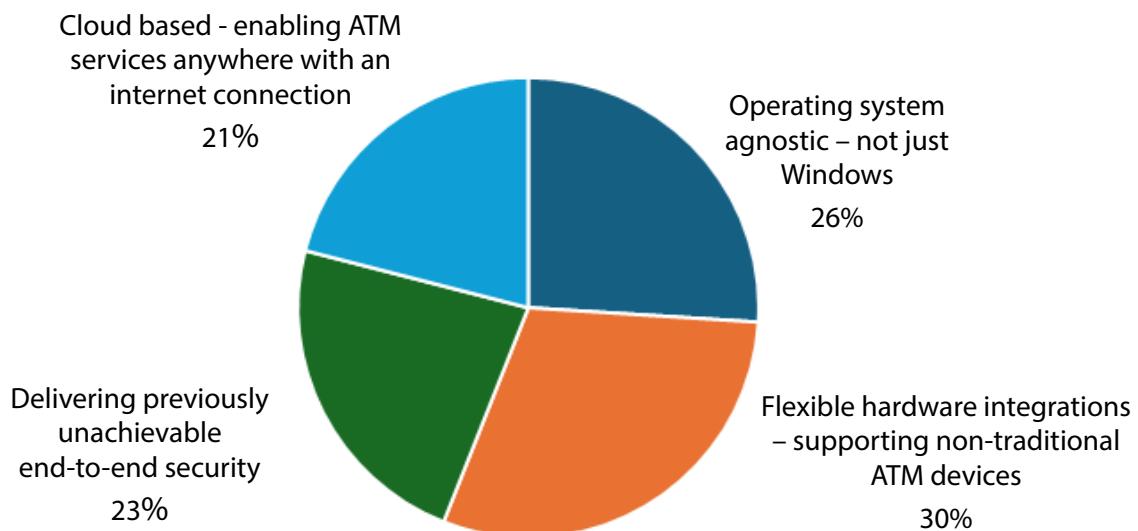
30. **Which third-party ATM services do you think banks are leveraging the most? Please select all that apply.**

Service	Percentage
Operational monitoring (real-time visibility and mgmt)	46%
Software hosting / SaaS (accessible online via subscription)	10%
ATM host processing (acquiring, authorizing, issuing)	32%
Hardware maintenance (routine and emergency ATM support)	35%
Cash management (forecasting, restocking)	42%
Security (protecting against physical and digital attacks)	37%
Full ATM network outsourcing (ATM-as-a-service)	38%
None of the above	3%
Other	0%

31. **What is the main challenge you would like to overcome to improve ATM innovation? Please select one.**

- Integration difficulties 21%
- Regulatory requirements 15%
- Customer resistance to change 3%
- None of the above 3%
- High costs 19%
- Other – 0%
- Legacy technologies 26%
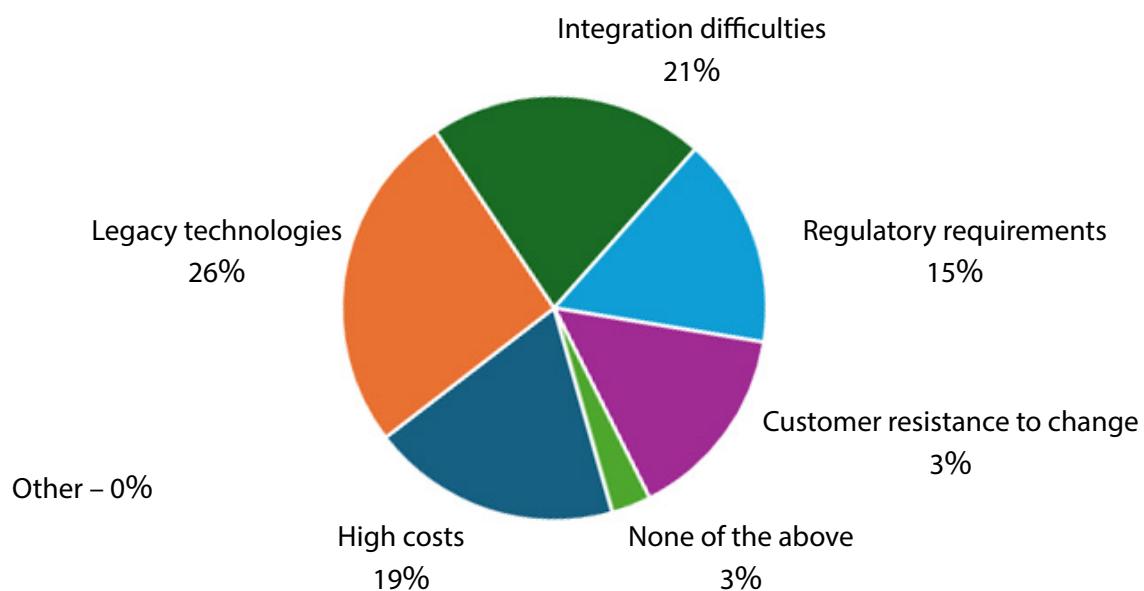
Acknowledgments

We would like to thank the many global ATM professionals who have shaped this report from KAL and ATM Marketplace. The insights we have received from industry survey respondents and interview participants have helped us capture an authentic representation of evolving ATM trends - bringing immeasurable value to this project.