

Unlock Value, Drive Efficiencies



Cash Automation in North America:
A Guide to Taking Action



DieboldNixdorf.com

Executive Takeaways



There is a growing use of digital payments, but consumers continue to hold more store-of-value cash compared to pre-pandemic amounts. Branches still play a vital role in consumers' banking journeys.



The self-service channel is becoming even more important due to the increasing consumer demand, the desire for social distancing and the need to optimize operational efficiency.



FIs are under pressure to make their operations as efficient as possible. Cash Automation helps to drive efficiencies. Globally, cash recycling is becoming more widely used, particularly in countries where it hasn't been as prevalent.



By utilizing ATM cash recycling, FIs can provide consumers with a functionality that saves them a visit to the teller and offers an enhanced user experience.



86% of US consumers use self-service systems to conduct transactions. This strong ATM adoption is a basis to move more transactions away from the teller, even when process and safety demands tie 47% of consumers to tellers for deposits.



With cash representing up to 50% of the total cost of ownership (TCO) of a self-service device, deploying cash recyclers together with an established cash cycle optimization solution is a proven method of gaining efficiencies and reducing cash-related operating costs.

“Despite the growing demand for digital, cash supply remains a major and mandatory part of financial institutions' day-to-day operations. And the fact of the matter is, maximum efficiency is even more important when transaction numbers decline. Cash Automation is the biggest lever to streamline and optimize banks' self-service & branch channels.”

— **Chad Buckland** | Senior Vice President Banking North America, Diebold Nixdorf



The Value of Cash Recycling & Cash Management



Efficiency

Reduce costs by limiting CIT visits, while at the same time improving your consumers' self-service experiences and improving conditions for your employees.



Flexibility

Allow your consumers, especially small- and medium-business owners (SMBs), to deposit cash when it is convenient for them, regardless of your branch's operating hours.



Speed

Help consumers avoid long lines at the teller by migrating more transactions—like cash depositing—to the self-service channel.



Personalization

Free your staff from cash handling tasks so they have the time to build strong relationships with your consumers and increase the opportunity for up-selling.



Continuity

Make your services available to consumers, even when your branch is closed, so they're not inconvenienced.



Availability


Avoid out-of-service events and the accompanying frustration caused by the need for sweeps or replenishment of the ATM by keeping up a steady cash flow through a proper cash planning solution.



Sustainability

Drive positive social and environmental impacts through financial inclusion and green operations.





“We see a strong migration to digital, but 55% of consumers still visit the branch tellers at least once per month for standard transactions.”

—NielsenIQ International Retail Banking Consumer and Technology Survey commissioned by Diebold Nixdorf, March 2021 USA n=2,005

North America is not going cashless any time soon: Automating the cash journey wherever possible is the only way to efficiently manage cash handling

Technology is irrevocably impacting the way we bank. While COVID-19 is shaping consumers' interest in contactless transactions, the desire for cash has not diminished significantly. After an initial decrease of cash usage during the pandemic, we see worldwide that the trend is reversing and that the amount of cash being circulated through the ATM is going up in aggregate. That means cash is a mainstay as a form of payment around the globe. The way people bank is changing—but cash will remain an attractive means of payment into the future, particularly in times of crisis. Cash access suits peoples' “anytime, anywhere” needs and ultimately gives people the freedom to choose how they want to pay. On the other hand, consumers across all generations have ever-increasing expectations for on-demand, digital-first services.

The key is conserving cash and developing digital solutions that grow with your consumers and are as efficient as possible. The self-service channel sits at the intersection of physical and digital financial channels; it remains a critical on- and off-ramp for cash in circulation.

And the fact of the matter is, maximum efficiency is even more important when transaction numbers decline. Consumers and self-service devices are evolving in tandem, and FIs are the ones that must keep up.

You've got to be adaptable, ready and agile.



Cash use is on the decline; however, it's not going away completely. It's still widely used for smaller value purchases:

8% Will stop using cash over the next 2 years.¹

57% Will maintain or increase use over the next two years.¹

42% Use as payment while shopping in stores.²

¹ Source: NielsenIQ International Retail Banking Consumer and Technology Survey, Mar 2021, USA: n = 2,005

² Source: Nielsen International Grocery Shopping and Technology Survey . USA: 2019 N = 1,001 / 2021 N = 1,004

Did you know that...

...even online payment services (like Paypal) are trying to address customers' cash needs in order to promote their digital services? Banks already have the advantage of using the ATM as brand ambassadors to offer more services through their fleet of ATMs.

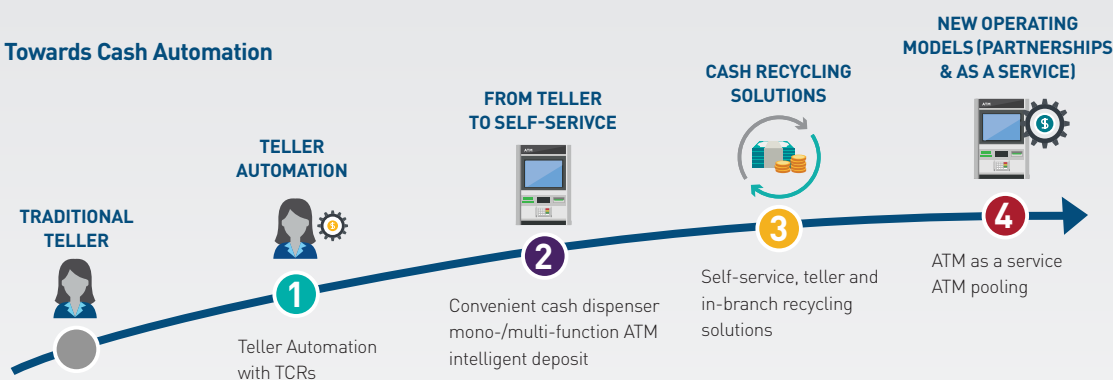
The Cash Automation Journey in North America

Meeting the human need for cash and FI's desire for efficiency calls for powerful insight, informed advice and exceptional technology.

Easy access to cash—anywhere, around the clock and around the world, is essential. Failure to meet this demand can have serious consequences, with loss of goodwill and opportunities for consumer engagement. But cash management holds hidden costs, including transport and handling. Equipment and technology alone cannot minimize these costs effectively. Although self-service is already automated per definition, there are still big optimization potentials that can be exploited by many FIs.

For this reason, FIs and other ATM providers are putting cash management at the center of their retail strategies. The answer lies in end-to-end optimization of cash processes, which can deliver significant benefits—including **at least 20% savings in TCO**, increases in sales and consumer service, greater consumer satisfaction, **and up to 75% reduction in cash replenishment efforts**.

A Journey Towards Cash Automation



There are four primary steps in the cash automation journey:

Step 1: Teller Automation: The teller experience has dramatically evolved. Teller Automation solutions such as TCRs with retail channel integration enable most transactions to be automated but still maintain the human factor.

Step 2: Transaction Migration from Teller to Self-Service: ATMs help enhance consumer access to cash withdrawals and deposits 24/7 without the limitation of business hours, and significantly reduce cost per transaction.

Step 3: ATM Cash Recycling: Cash deposits account for the majority of cash handling efforts in a branch. Automation of these transactions is one of the biggest factors for reducing cash management costs. In a cash recycling scenario, your own consumers are replenishing your ATMs for free: the closed cash cycle in these systems makes deposited cash available again for withdrawal, enabling banks to significantly reduce their workload and expenses.

Step 4: Partnerships & “as a Service”: Some FIs are already going a step further as they look for greater flexibility and speed to market. These organizations are using the benefits of industry partnerships, ATM white labeling and “as a service” models including ATM as a Service and Cash as a Service.

Are You Taking Full Advantage of Cost Optimization Capabilities Within Your Self-Service Fleet?

Are you still pondering whether cash recycling would be useful for your consumers and your institution? Or have you already been using the functionality for some time and would like to know how to exploit all the possibilities? Here are real-world examples, calculated with local figures, that explore how you can reduce CIT stops and lower your TCO, get even more out of the configuration of your devices and optimize the business case for cash recycling with your current infrastructure.

Determining recycling demand and impact within your network

PHASE #1



DEVELOP SIMULATION

- Utilize per machine in/out activity to build a baseline
- Overlay CIT schedule
- Compare current to simulated recycling environment.

PHASE #2



PRIORITIZE DEPLOYMENT

- Develop a deployment plan by prioritizing terminals based on expected impact of more optimal cash cycle and increased uptime.

PHASE #3



FINANCIALLY RATIONALIZE

- Estimate financial impact recycling will have at both a conservative and more aggressive approach to CIT reduction, fill levels and triggers.



OTHER CONSIDERATIONS

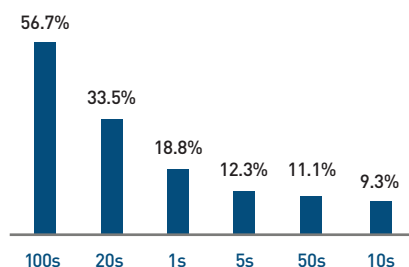
- How do things like transaction migration efforts, denomination selection capabilities or merchant campaigns impact cash in/out volumes.

Some observations and results from DN recycling simulations

41% of deposit accepting ATMs were good candidates for recycling (ratio of Cash In/Cash Out > 35%)

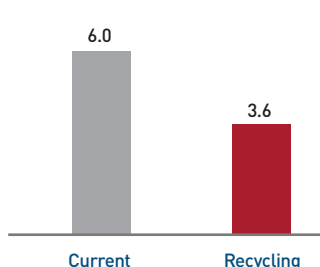
VOLUME	% DEPOSITS	CASH I/O	Attractive cash in/out ratio exists at moderate and lower volume machines
High	24%	36%	
Moderate	22%	36%	
Low	25%	50%	

Cash In/Out Ratio by Denomination



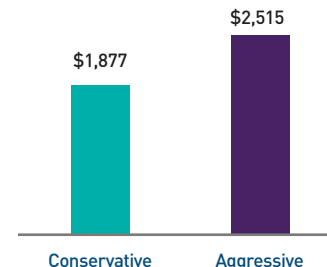
Cash In/Out ratios vary greatly by denomination, even when normalizing for withdrawal option

Average CIT Stops per Month



Reductions in CIT of 40-50% are not uncommon, in some instances 60% savings can be achieved

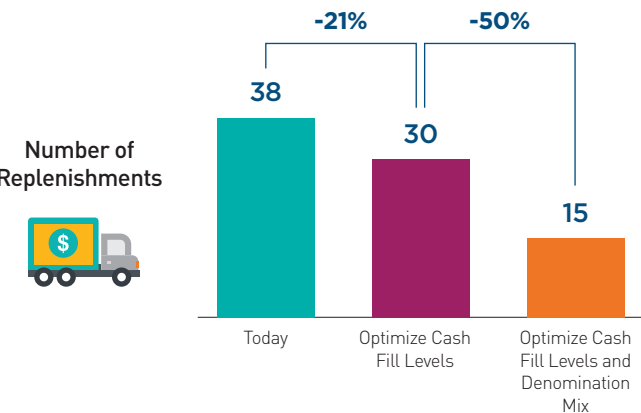
Average Annual Savings per ATM



Savings per machine will vary based on how aggressive an FI wants to get on load amount and fill level thresholds

Other Considerations

Cassette Optimization to Tap Into the Full Potential



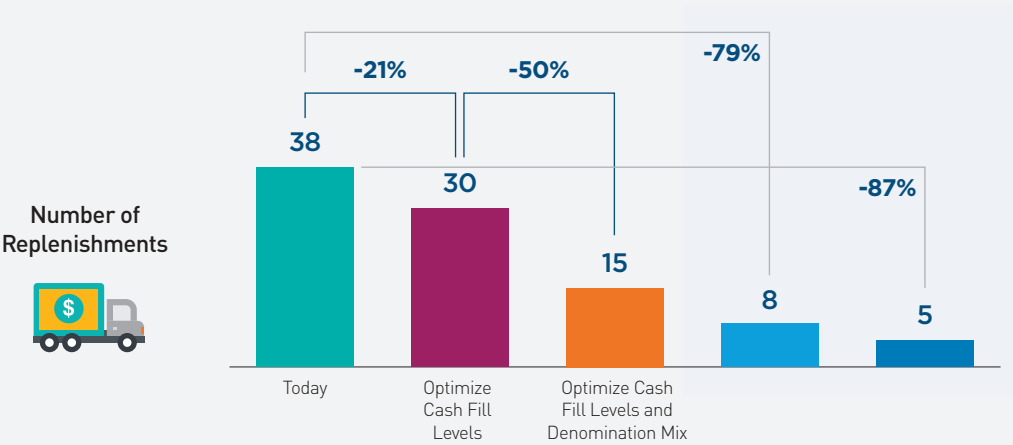
# replenishments per week	8:9	7	3:5
% ratio cash-in vs. cash-out	8:92		

A closer look at your cassette configuration can help you tap into the full potential of your CRS system. Depending on the location and usage of the system, an optimized configuration can reduce the number of needed replenishments tremendously.

For example, due to high cash-out transaction volumes (8:92%) at this system, most cassettes can be filled up during a single CIT visit, which would immediately decrease the number of replenishments by 21%.

In this regional customer example, the number of low denomination banknotes was also extremely low, yet a whole cassette was reserved for those bills. If the mixture of denominations offered during dispense transactions was optimized, it would be possible to use the full capacity of the cassettes. That change could result in half as many replenishments per week.

Use SMB Deposits to Leverage Self-Service Cash Recycling



# replenishments per week	8.9	7	3.5	1.9	1.2
% ratio cash-in vs. cash-out	8:92			30:70	50:50

Increasing the amount of deposits at this location and device to a cash-in rate of 30% or even 50% **would correlate to an 87% decrease in CIT stops.**

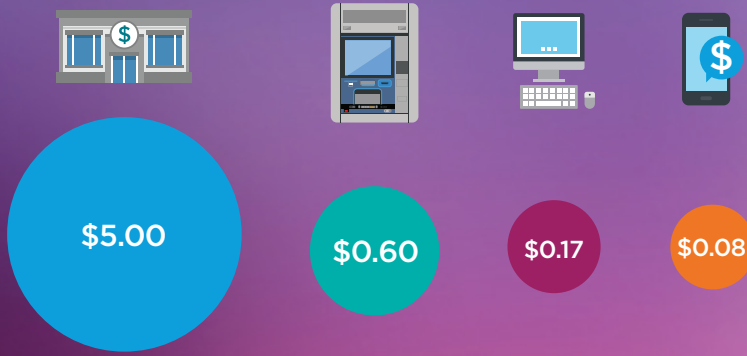
Other Benefits of New Technology

- The average number of interventions per system is reduced by more than 40%
- The average “out of service” time per intervention is additionally reduced by half
- Our fourth-generation cash recycling engine offers higher availability through a simplified note path; and, it’s prepared for future cash automation needs with new, high-capacity cassettes and flexible multipurpose bins, as well as dual cassettes.
- In several customer projects we experienced an improvement of Moved Media per Out of Service Event of more than 100%.

The SMB Opportunity

Simplify and automate cash operations to deepen relationships with small and medium businesses.

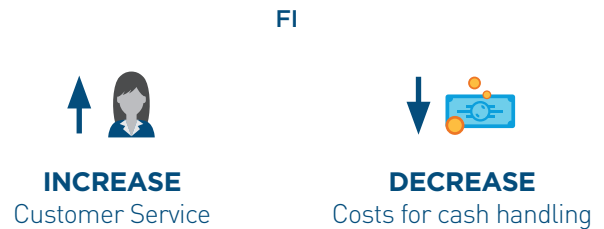
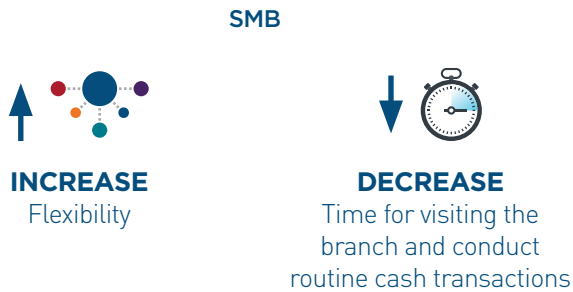
Average Cost per Transaction



Source: Diebold Nixdorf Proprietary Data



The Ideal SMB Journey is a WIN-WIN



In a SMB survey we conducted last year, 41% of US participants said that they use the branch for cash-in transactions at least once a week or even daily. And 55% of the consumer we asked still conduct at least one of the named transactions—cash withdrawals, cash deposit, bill payment, transfers, recurring payments—at the branch teller rather frequently.

In most cases SMBs account for about 70% of all cash-in transactions within the branch. And the reality of cash payments is that they require physical activity, for both the SMB and the FI. **Automating the cash journey wherever possible becomes absolutely critical. And migrating cash transactions from SMBs to self-service is the biggest lever to establish the business case for cash recycling.** SMB clients and others with large cash deposits can be directed to use self-service with new and flexible functionality, thus ensuring the steady flow of cash in and out of the system in addition to the highest standard of security. The more the SMB segment is migrated to self-service, the more it helps reduce cash-related costs. Cash replenishment and

pick-up processes can be tremendously optimized to help reduce the TCO of the self-service channel. It has the added benefit of prolonging CIT intervals drastically, so in terms of sustainability remarkable CO₂ emissions can be saved.

Combined with innovative software and end-to-end cash management services, these systems guarantee audit compliance and maximum transparency of all cash inventories, while transforming the journey of business customers, branch staff and end users.



Learn more about the Merchant Automation Journey to support your SMB customers and drive efficiencies.

[Get the Guide](#)

How Should You Introduce Cash Recycling To Your Customers? Lessons Learned:

57%

of US consumers stated that they **deposit cash at least once per month**, typically with the branch teller. Just 10% say they only use ATMs to make cash deposits.

We asked consumers:

“What changes could we make that would encourage you to use the ATM for your cash deposits?”

Process and safety demands are the most frequent reasons consumers make their deposits at the teller.

Here are the top five requirements for consumers to consider ATMs for cash deposits:

- Prove to me that it is as secure or even more secure than the teller
- Ensure that the amount is directly credited to my account
- Give me an incentive to use the ATM (e.g. lower fees, bonus points...)
- Prove to me that it is faster than the teller
- Give me an option to call immediate assistance if something goes wrong

EDUCATION, EDUCATION, EDUCATION.

- Introducing self-service recycling requires a fundamental mind-shift for consumers and bank staff.
- Consumers have to trust the tech, rather than their teller, and FI need to implement the technology strategically.
- Training staff is an essential component of a successful rollout.

CONSUMERS AND SMBS NEED GUIDANCE.

- How to properly deposit large bundles of notes.
- Understand the benefits of recycling, from enhanced security to automatic crediting.

RECYCLING IS AN ONGOING PROCESS OF IMPROVEMENT.

- Start small with a pilot—which can be done without any changes to the switch.*
- Use the pilot program to educate staff and consumers.
- Make sure the technology decisions taken now support you in the future.

*See page 13 Terminal Driving

Case Study: One Nevada



One Nevada is one of the largest locally based, state-chartered credit unions in the state, headquartered in Las Vegas, Nevada. Over the last 20 years, One Nevada has strategically transformed its self-service network to be the face of the credit union and to serve as its members' single-point-of-contact for cash transactions. With a majority of their 49 ATMs located within Las Vegas, the amount of cash deposited into their terminals is quite staggering. Even though cash recycling hasn't taken hold in the U.S. to date, One Nevada is planning to move down this path, as the benefits are far too great to ignore.

"In all instances, our ATMs are the workhorses, taking in cash deposits of over a million dollars per week. Due to our location in Vegas, we see heavy cash deposits at our ATMs, requiring twice weekly balancing at each terminal. We could see substantial savings to our CIT replenishment costs if we could recycle this cash. There's a strong enough business case in our mind to find alternative ways to recycle and reduce our dependency on the networks and their possible timelines to support."

—Kristen Williams, AVP Administrative Services, One Nevada Credit Union

Case Study: Ledyard National Bank



Ledyard National Bank, headquartered in Hanover, NH, was founded in 1991 to establish a new community bank that truly provided personal, responsive and efficient financial services to businesses and individuals in the Upper Valley, Lake Sunapee, and Concord Regions. Over the years they have continuously improved their consumer service and started a branch transformation program two years ago and continue to install Teller Cash Recyclers from Diebold Nixdorf to elevate the consumer experience and to ease the cash handling activities for the branch employees.

“We would love to leverage the power of our self-service channel to increase engagement and strengthen the relationship with our clients. We believe that cash recycling at the ATM can streamline the cash processes especially of our business clients and give them flexibility for their branch visits. Self-Service Cash recycling would elevate the consumer experience by increasing availability and delivering a personalized user journey.”

— Sue Fernald, SVP, Senior Banking Operations Officer, Ledyard National Bank

Case Study: Virginia Credit Union (VACU)



Virginia Credit Union (VACU) is headquartered in Richmond, Virginia, USA, and has 20 branches throughout Virginia, 22 self-services devices in their fleet and more than 500 employees. "Members first" has always been the focus at Virginia Credit Union, which designs financial products and services to guide members in their financial lives. As a member-owned cooperative, VACU takes a consultative approach that differentiates it from other players in its market. Since its inception, VACU has moved at a faster pace than other larger banks in the area as far as deposit automation, and is interested in taking the next step on the automation journey.

"We believe cash recycling will be essential for maximizing operational efficiency and giving members the convenience, they desire. Once cash recycling technology receives network certification, we can enable cash recycling easily and quickly, thanks to the flexibility of DN Series™ ATMs."

— Jason Rooke, Manager of ATM Operations, Virginia Credit Union



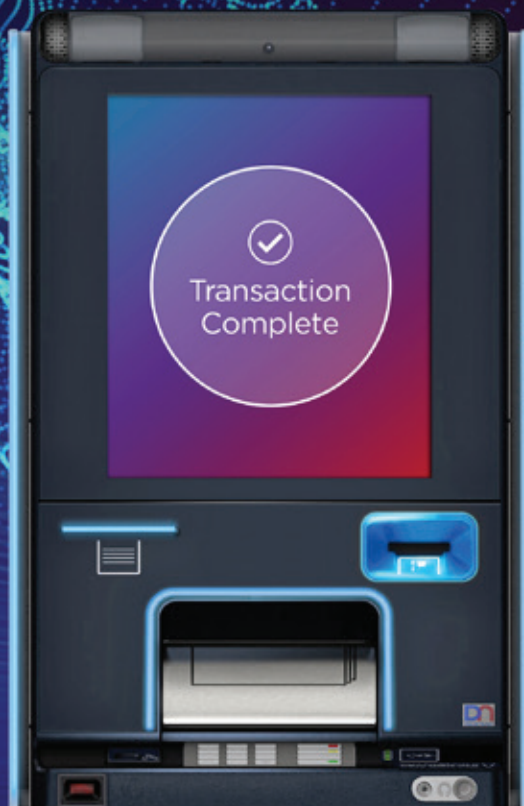
Terminal Driving: A Game Changer

The desire for ATM cash recycling in the North American banking market is here. Although many US banks have known the advantages of implementing cash recycling within their self-service fleet for years, they have long been held back due to the limitations of their legacy systems and missing support from their switch provider and/or processor solutions. Diebold Nixdorf can help overcome these obstacles. Today, modern technology and new services enable the opportunity for recycling solutions to be managed outside of traditional switch and processors in ways not previously possible.

Diebold Nixdorf's Terminal Driving solutions can bypass the barriers of legacy banking infrastructure to enable access to state-of-the-art technologies that fast-track innovation and reduce the overall cost of ownership—all without compromising on compliance, security, reliability or resilience. Whether you have already deployed ATM cash recyclers or are aiming to deploy some soon, we can help you speed up the activation of the recycling functionality across your network. Capabilities include counter-management features and offer full flexibility to handle different cassette denominations and bin/cassette types, as well as support for both booking and counter periods. DN's Terminal Driving solutions let FIs enable device-level

functionality such as business rules, cash management, recycling, etc. while letting the switch handle the transaction routing. You simply have more control over your ATM channel. Our Terminal Driving solutions offer the best option whether you are currently managing ATM transaction processing in-house or using a third-party provider.

If you want to manage Terminal Driving in-house, we can support you through Vynamic® Payments Terminal Driving. Alternatively, if you feel it's a big task that's far from your core expertise, we've designed DN AllConnect Terminal Driving ServicesSM to be a cost-effective, compliant, end-to-end outsourced solution. Our Terminal Driving Services seamlessly integrate into your self-service channel ecosystem, so you can disengage from the financial and operational burden of managing terminal driving in-house, or free yourself from the limitations of your existing service providers. Become more consumer-centric and deliver a wider range of transactions and functionality on your self-service channel. Introduce cash recycling across your network faster. Gain more control over the ATM channel and seize the opportunity to offer your consumers more. Differentiate from competitors and increase the profit generated from the ATM channel.





What We Can Help You Achieve:



Accelerate the introduction of recycling across your network.

Recycling technology is proven to significantly reduce cash handling operations, which not only relieves your branch staff from cash-related tasks, but also reduces the need for CIT visits and the overall cost of cash for your self-service network. Our Terminal Driving Solutions are a game changer: whether you have already deployed ATM Cash Recyclers or plan to deploy them soon, we can help you speed up the activation of the recycling functionality across your network. Capabilities include counter-management features and full flexibility to handle different cassette denominations and bin/cassette types, as well as support for both booking and counter periods.



Introduce new banking services at your ATMs seamlessly and swiftly.

Through a direct connection to your core banking system, we can holistically manage terminal driving, switching/routing and ATM application software. You're empowered to introduce new banking products and services such as bill payment, charity donations, loan repayment, mobile top-up, checkbook requests, mobile number updating and much more.



Delight consumers with new ways of transacting.

Additionally, our Terminal Driving Services support the implementation of modern interactions at the ATM, such as EMV-compliant contactless cards. It also frees your organization from the limitation of only being able to handle card-based transactions by enabling the integration of mobile wallets, and pre-staging of cash via mobile device.



Simplify and fast-track all new rollouts.

Powered by Vynamic Payments, our cloud-native next-generation software solution, changes to your ATM network can be implemented across all devices concurrently, in real-time and in a cost-effective manner.

Driving Operational Efficiency: Optimizing the Cash Cycle

Implementing self-service options and migrating transaction from teller to self-service are important steps in automating processes. But to truly maximize your ROI, the real answer lies in end-to-end optimization of cash processes, something Diebold Nixdorf has helped FIs with for many years. Automation is a dependable way to drive down costs. Effective tools and services are available to help FIs plan cash needs. Yet, it is not a given that those tools are widely used. This is particularly surprising, not only because the availability of ATMs has a direct impact on customer experience, but because of the fact, that the cost of cash is typically the largest contributor to an ATM fleet's total cost of ownership (TCO).

ATMs drive more digital engagement and customer satisfaction per interaction than any other physical channel. With the cost of cash representing up to 50% of the total annual cost of ATM network ownership, you need to find the right balance between maintaining cash availability while optimizing logistics and idle cash costs, meeting security requirements and controlling risks. Cash planning is most effective when you consider it end-to-end.

True cash optimization often fails simply due to the limitations of the service provider. This does not have to be the case; there

are tools available and partners to provide the conceptual and technical prerequisites to have the right amount of cash at the right place at the right time. True cash management is highly automated and simple, and surprisingly easy to integrate into existing environments to deliver precise predictions, from simple denomination levels all the way up to full recycling support, enabling flexible, best-in-class cash optimization. Effective cash management requires a specially developed, comprehensive, end-to-end solution (software or managed services) that not only delivers a reliable forecast, but also solves conflicting optimization goals in order to determine the most suitable load amount and the correct service cadence within the given set of business constraints. With the right solution, cash management becomes easy and efficient. DN Cash Management Services features a team of specialists who optimize cash management for FIs around the world. The data-driven service is powered by a unique and patented machine learning algorithm. The outcome is a process optimization that reduces overall cost of cash, meets security and compliance requirements and delivers a compelling customer experience.

[Learn more about Cash Management at Diebold Nixdorf](#)

"The management of cash and our CIT provider simply took too much time from our branch and back operations teams. Managing cash efficiently, combined with the need to meet compliance and security requirements, made the process complicated. Transferring the end-to-end cash management to Diebold Nixdorf is a game changer. We now deliver a better member experience and are able redirect our employees where they add more value while reducing our cash-related costs."



— Joe McCain, Chief Procurement Officer, Founders Federal Credit Union

Future Gazing: The Outlook for North America

Even with the shift towards cashless payments observed during the pandemic, there is a sustained demand for automated cash and check deposit facilities.

Banks around the world are continuing to invest in automated deposit terminals, in particular those who recycle the deposited cash. While the total number of ATMs installed worldwide continues to decline, the number of automated deposit terminals is forecast to grow. North America is forecasted to grow the number of automated deposit ATMs, while recycling ATM installations are expected to grow at an annual average rate of 25% between 2022 and 2026.

Customer expectations, the continued use of cash and checks, and the desire on the part of banks to automate basic transactions and reduce CIT costs will drive growth.

In North America, the trend during the pandemic was the tendency for people to withdraw or deposit more funds, but on fewer occasions. This behavior results not in a lower overall number of deposit transactions, but an increase, given the increasing number of people depositing for the first time.

Source: RBR 2022, Deposit Automation and Recycling

How can DN help with the Cash Automation Journey?

With 20 years of experience in designing cash recycling technology, the DN Series RM4V recycling module is designed to meet today's needs and tomorrow's vision.

Whether Lobby, Through-the-Wall or Drive-up ATM Solutions, Diebold Nixdorf offers the widest range of Cash Recycling Solutions in the world. Depending on what priorities you set, we have the right system for you. And, DN Series provides the ability to grow with your strategy. Our future-ready platform enables your organization to start using the ATM as a cash dispenser and later update to cash recycling with a simple software update.

Enhance the self-service experience with DN Series' modern design and enable faster and easier certification with common hardware components and platform software. A fourth-generation cash recycling engine, the RM4V offers more availability, due to the simplified note path, and ensures you're prepared for future cash automation needs with new high-capacity, all-in cassettes and flexible multipurpose bins.



Whether you need future-proof self-service systems, a supportive services partner or end-to-end management of your ecosystem, **let's discuss how we can consult and support your strategic priorities.**