

The Case for Cash Recycling

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Today's Presenters



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Today's Agenda

- **Why Now?**
- **Analysis and Simulation: The Case for Cash Recycling**
 - *Cash Trends*
 - *Consumer Preferences for Depositing*
 - *Understanding Demand for Recycling*
- **What We Have Learned**

What We Are Seeing...

Cash use is on the decline however it is not going away completely; wide use for smaller value purchases:



8%

Will stop using cash over the next 2 years.³

57%

Will maintain or increase use over the next two years.³

42%

Use as payment while shopping in stores.³

ATM transaction trends are more supportive of recycling; shrinking withdrawals and increasing cash deposits:



40%

Of deposit accepting terminals in the U.S. estimated to have cash in/out ratios to support recycling.¹

80%

Increase in cash in/out ratio since 2010 based on DN benchmark data.



9 out of 10

On average, nine out of 10 notes deposited into the self-service channel are fit for recycling.¹

Significant opportunity for cost saves associated with reductions in CIT visits and employee time spent:



40-50% reduction...

...in CIT visits revealed through simulation analysis. In some cases a bank's CIT company may be visiting an ATM 3–4 times per week just to sweep the machine.¹



Recycling presents opportunities to help enhance customer experience:

91%

of consumers say they're NOT completely satisfied with ATMs that only offer \$20 bills.²



54% wait time

38%

Too much delay from depositing to booking it on acct.

Top two merchant complaints related to branch banking experience.¹



75%

of merchants would use automated self-service technology for deposits and withdrawals.¹

¹ DN proprietary research

² Source: Q4 2018 Forrester Online Omnibus, n=5,001. Forrester fielded a survey of proprietary questions on behalf of Diebold Nixdorf.

³ Source: Nielsen International Grocery Shopping and Technology Survey . USA: 2019 N = 1,001 / 2021 N = 1,004

⁴ Source: NielsenIQ International Retail Banking Consumer and Technology Survey, Mar 2021, USA: n = 2,005

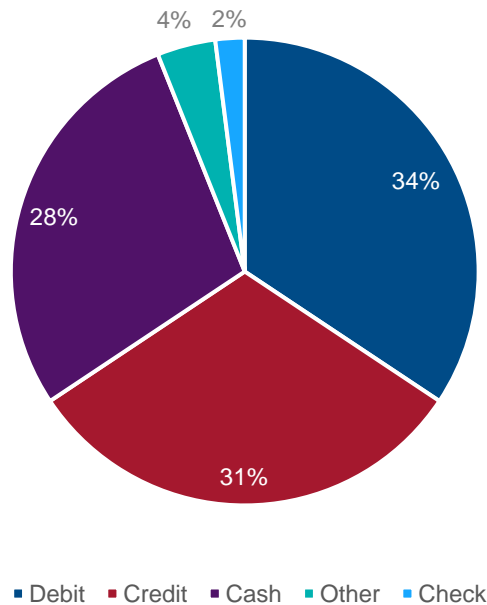
Cash Use Trends



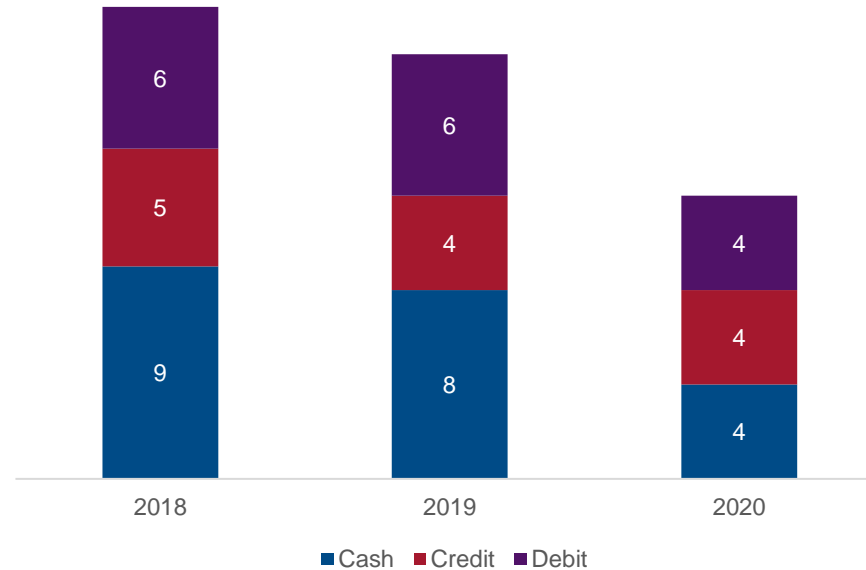
Payment Trends by Size of Payment

Cash use for low value and in-person, non-bill payments remains important

Share of Payment Use for In-Person Non-Bill Payments



Mean Monthly per Person Payments Under \$25

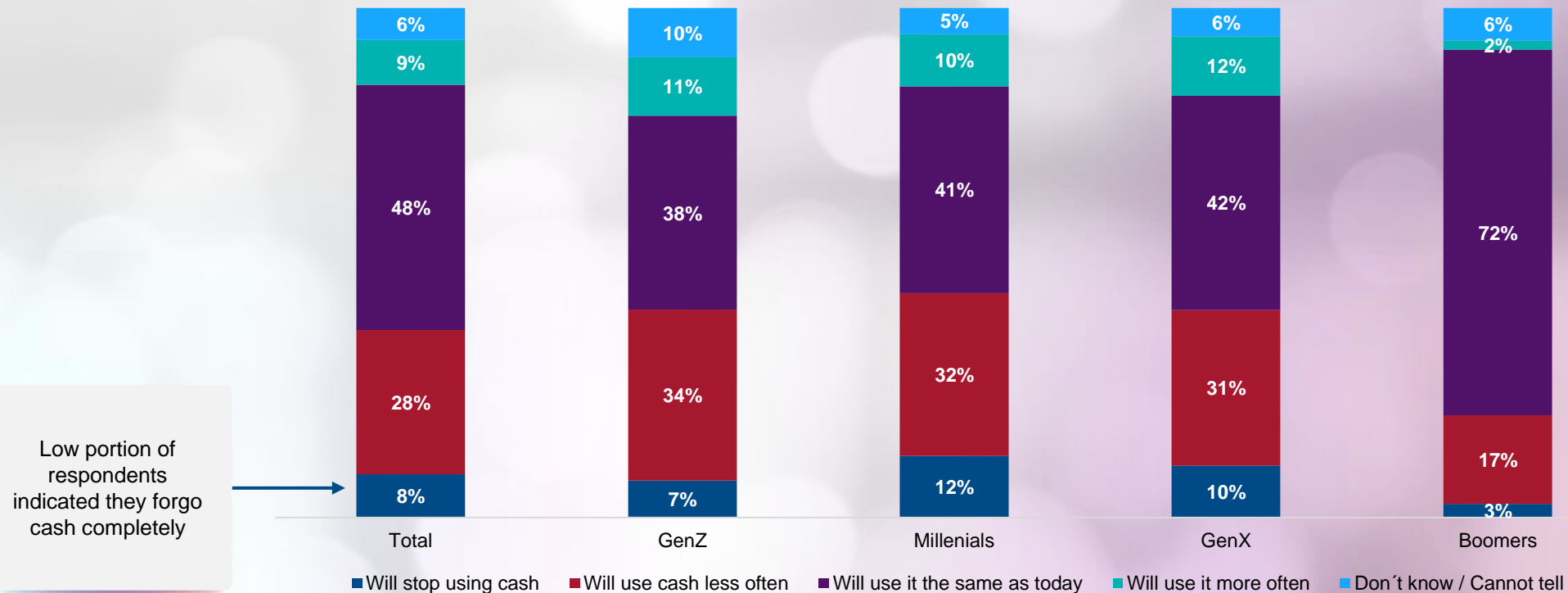


- Drop in-person purchases due to pandemic related lockdowns suppressed the frequency of lower value payments (usually associated with in-person purchases)
- Decline in cash partly due to fewer total small-value payments, defined as payments of under \$25, rather than a substitution of cash payments with cards.
- The average consumer uses cash for about half of purchases under \$10. As the purchase amount increases to between \$10 and \$25, cash and debit cards are used about equally at 33 and 32 percent respectively.

Source: 2021 Diary of Consumer Payment Choice; CPO Federal Reserve System

Almost Half of All Consumers Expect Cash Use to Remain the Same in the Near Term

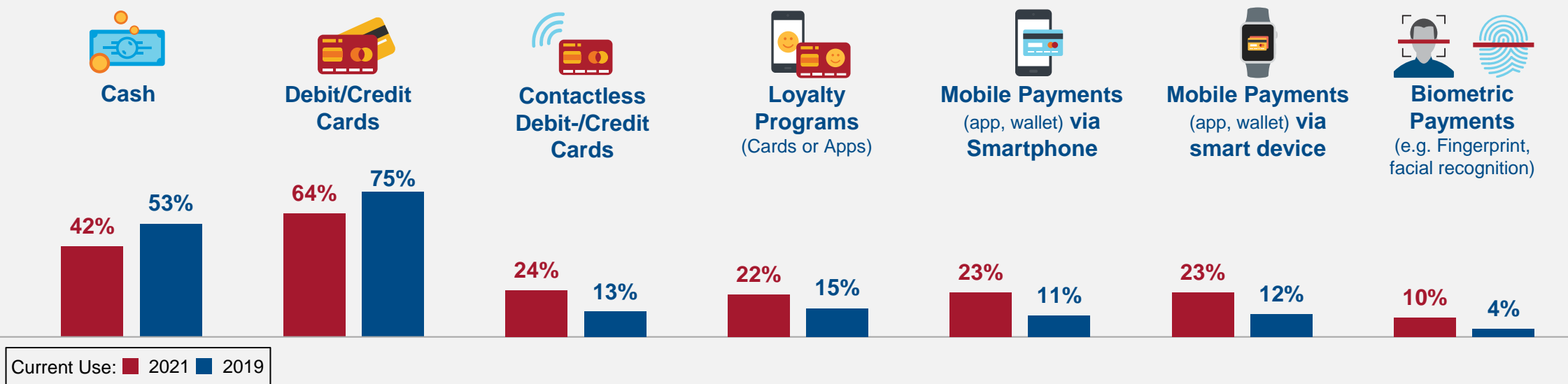
HOW DO YOU EXPECT YOUR USE OF CASH TO EVOLVE OVER THE NEXT TWO YEARS?



Older age segments have a much greater affinity for cash and are more reluctant to change behavior

Cash May Not Be King, but It's Still a Prince

WHEN SHOPPING IN STORES, WHICH PAYMENT METHODS DO YOU CURRENTLY USE?



Source: Nielsen International Grocery Shopping and Technology Survey commissioned by Diebold Nixdorf, Online Survey carried out December 2019 & March 2021. USA: 2019 N = 1,001 / 2021 N = 1,004. We asked: When shopping in stores, which payment methods do you currently use? Base: All respondents. Not shown: Others (0.9%/1.0%). How do you expect your payments preferences to evolve over the next two years? Base: Respondents who indicated to use respective method / *Base: Respondents who indicated not to be using resp. method at this time

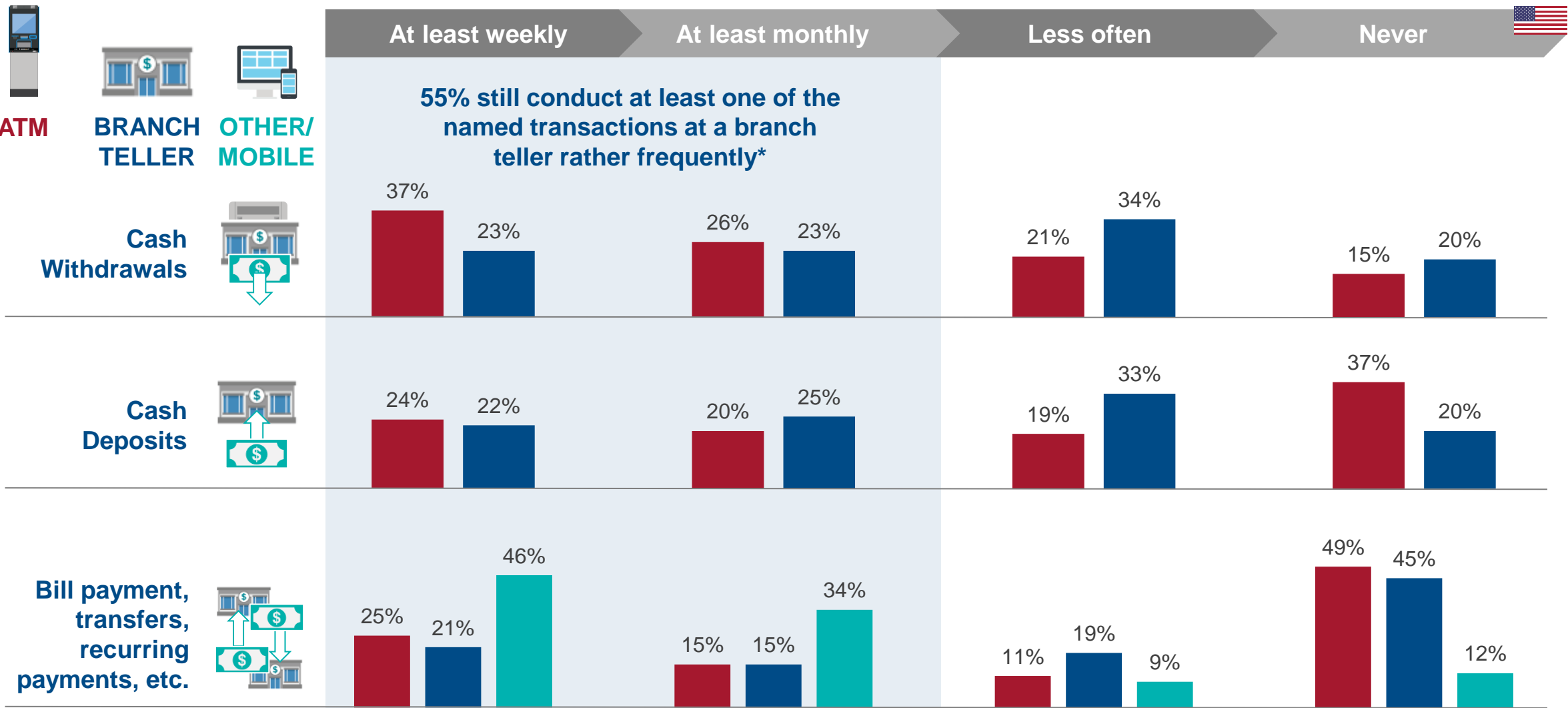


Consumer Transaction Trends



Transaction Patterns and Touchpoints

Strong migration to digital, but 55% still visit branch tellers at least once per month*



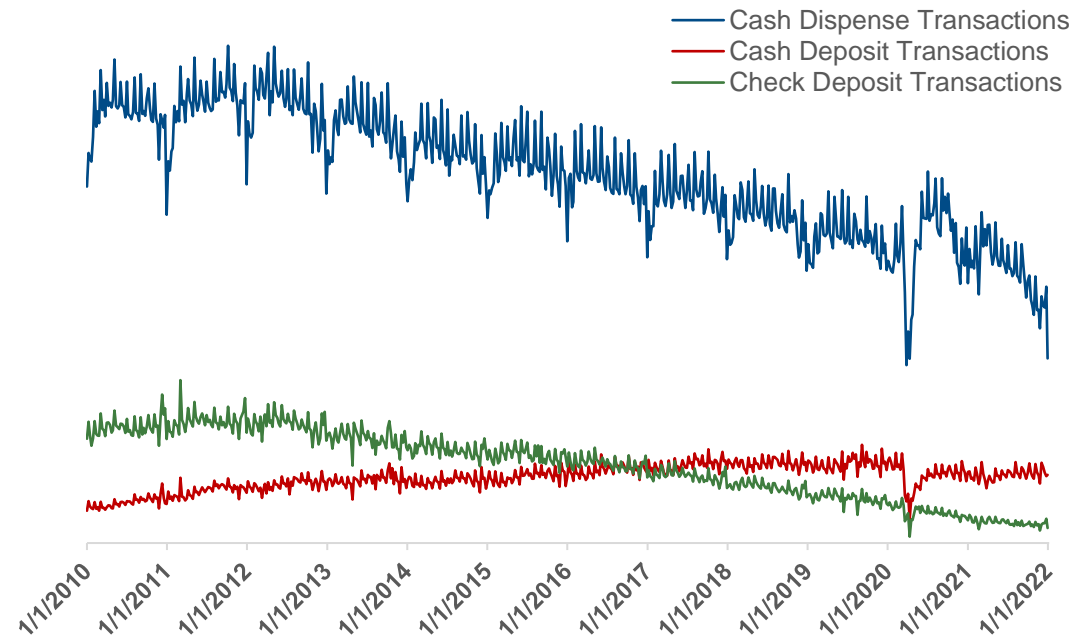
NielsenIQ International Retail Banking Consumer and Technology Survey commissioned by Diebold Nixdorf, n = 12,095. USA: n = 2,005 Online Survey carried out across 11 countries between March 5 – 28, 2021. We asked: *How often did you visit the following channel to conduct the respective transaction?* Base: All respondents. *Data on this slide excludes check transactions. Including checks, this share increases to 59%



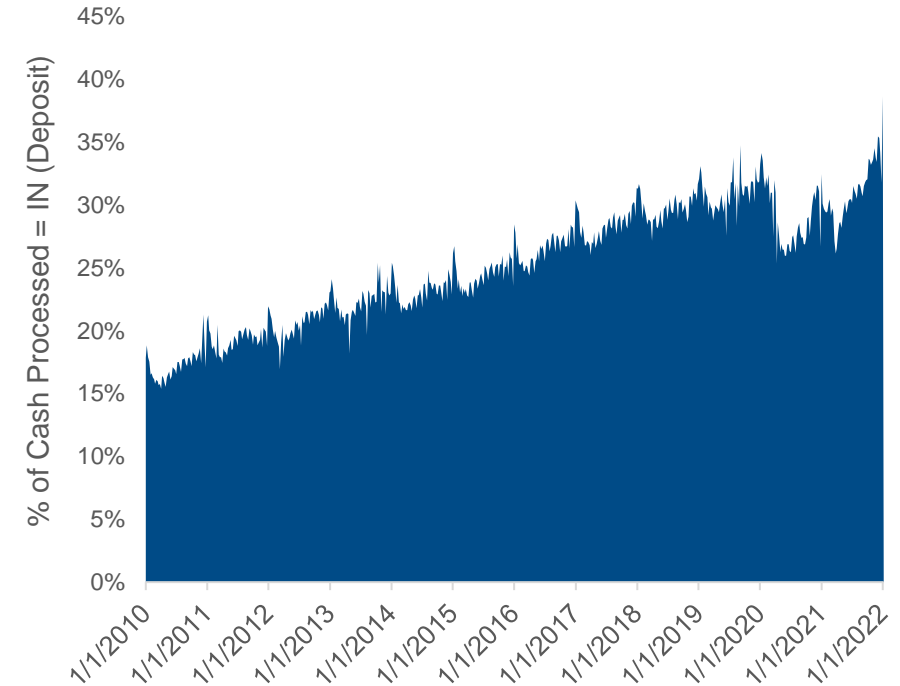
ATM Transaction Trends Are More Supportive of Recycling

Shrinking withdrawals and increasing deposits are driving increases in cash in/out ratios

Weekly ATM Media Transaction Trends
Jan. 2010 - Dec. 2021



Cash Ratio: In|Out Jan. 2010 – Dec. 2021



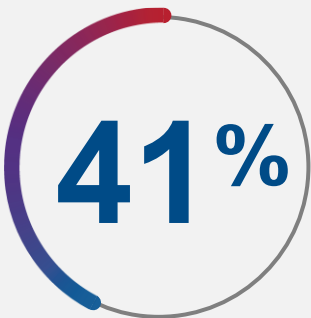
DN benchmarks show a 35% increase in cash deposits at the ATM while check deposits fell by 68%

DN benchmarks shows an 80% increase in the Cash In/Out ratio since 2010

Source: Diebold Nixdorf client benchmarks 2010-2021

Machine Level Analysis — Fit for Recycling

Deposit rate and denomination availability drives fit for recycling

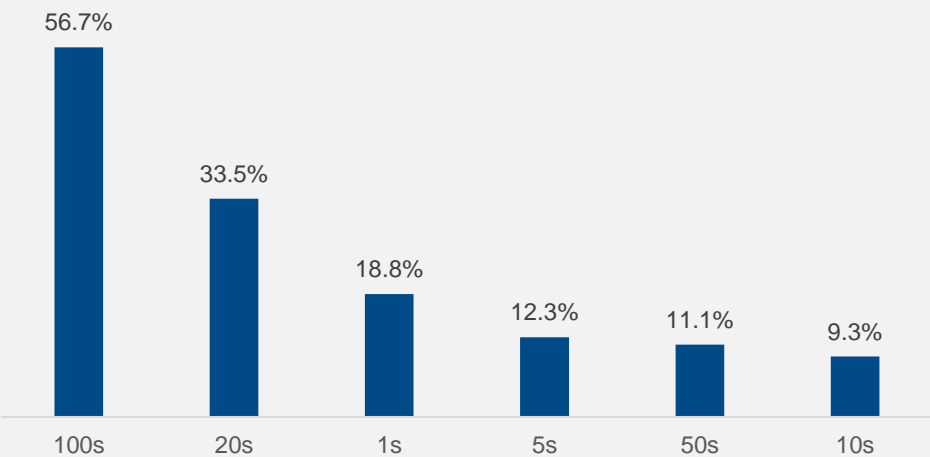


Of the sample were good candidates for recycling (ratio of Cash In/Cash Out > 35%)

Deposit / Withdrawal Volume Category	Avg Transactions (Deps & Wths)	% Deposits	Cash I/O
High	3,277	24%	36%
Moderate	1,432	22%	36%
Low	213	25%	50%
Total	1,331	23%	37%

Some of the most attractive cash in/out ratio exist at moderate and lower volume machines as portion of transactions that are deposits remains rather consistent across volume categories

Cash In/Out Ratio by Denomination



*Normalized for machines that offer each denomination as a withdrawal option

Cash In/Out ratios vary greatly by denomination, even when normalizing for withdrawal option; 100s and 20s exhibited the highest In/Out ratios

Source: Diebold Nixdorf client benchmarks 2021



Understanding the Demand Recycling



Determine Where Recycling Works on an Individual Location Basis

PHASE #1



SIMULATE SELF-SERVICE RECYCLING

Utilize per machine in/out activity to build a baseline

Overlay CIT schedule

Compare current environment to simulated recycling environment.

PHASE #2



PRIORITIZE DEPLOYMENT

Compare impact from a note level and replenishment/sweep perspective.

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

PHASE #3



FINANCIALLY RATIONALIZE

Estimate financial impact recycling will have on an annual basis looking at both a conservative and more aggressive approach to CIT reduction.






OTHER CONSIDERATIONS

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

Annual Savings with ATM Cash Recycling Implemented

Conservative calculation

CURRENT: CIT 3X A WEEK						
SUN	MON	TUES	WED	THURS	FRI	SAT
						

3 CIT Visits at \$45 per Visit x 52 Weeks = **\$7,020**

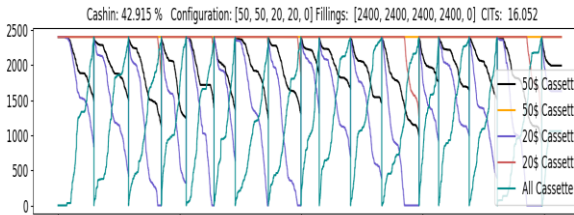
PROPOSED: CIT RECYCLING ENVIRONMENT 2X A WEEK						
SUN	MON	TUES	WED	THURS	FRI	SAT
						

2 CIT Visits at \$45 per Visit x 52 Weeks = **\$4,680**

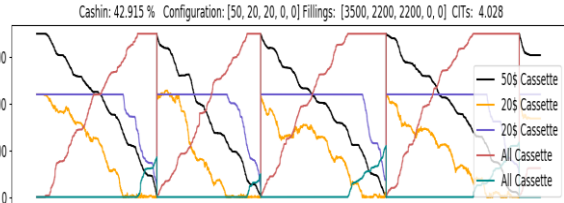
Cash Deposit vs. Recycling: Simulation Example

Cash Flow/ Simulation

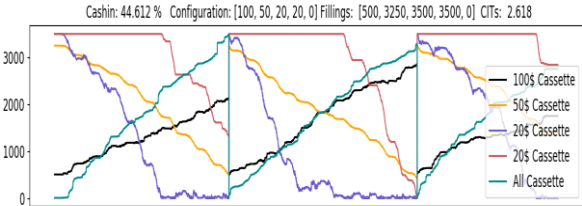
Current State (Intelligent Bundle Cash Deposit)



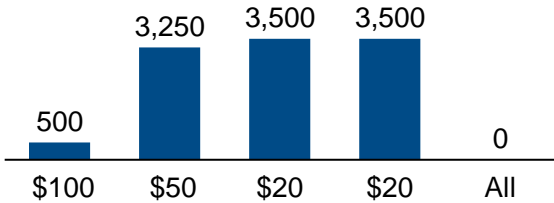
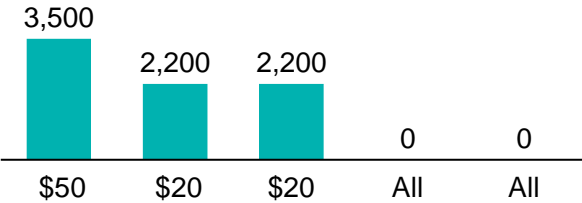
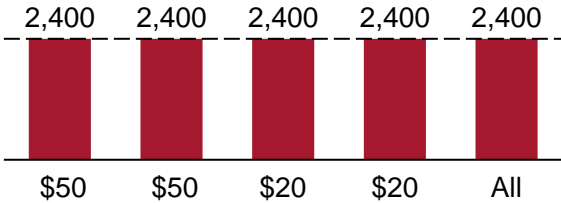
Recycling (same denomination)



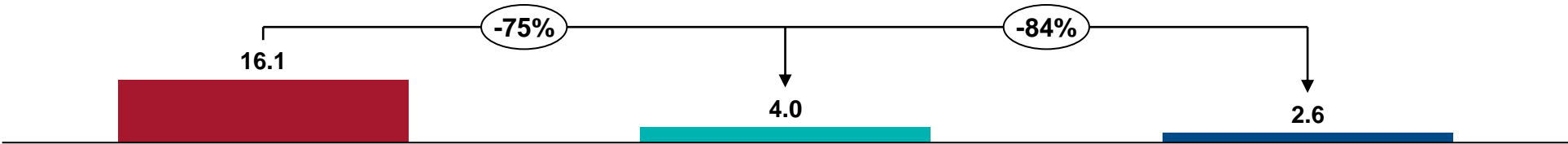
Recycling (optimized denomination)



Cassette Configuration



CIT Stops (4 weeks)



Annual costs

\$ 9,419

\$ 2,340

\$ 1,521

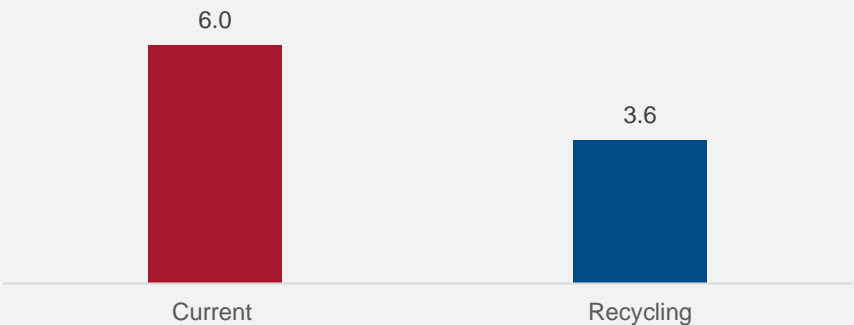
¹ \$45 per CIT visit



Simulation Summary

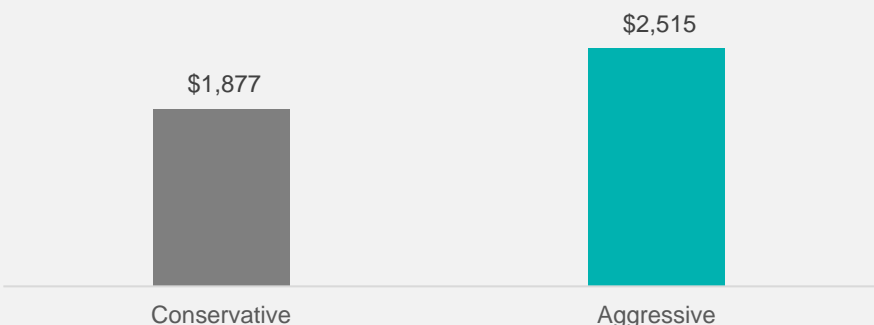
Simulations on over 30K NA based ATMs revealed...

Average CIT Stops per Month



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

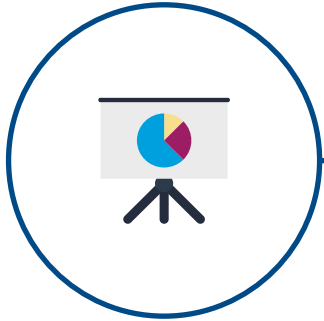
Average Annual Savings per ATM



Average Annual Savings per Machine will vary based on how aggressive an FI wants to get on load amount and low- level thresholds

Other Considerations

There are several considerations you need to be aware of that will ensure you get the desired results



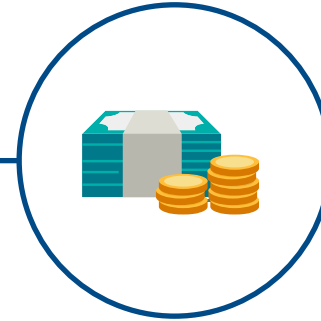
TRANSACTION MIGRATION

- What is the current deposit migration rate for each location and how does this compare to industry standards or quantitatively derived goals?
- How does an increase in cash deposits change the in/out flow of notes?
- How has the Bank promoted deposits at the ATM in the past?



BRANCH CASH MANAGEMENT

- Is CIT or cash management handle both ATM and branch vault cash in the same visit?
- What is the Bank doing to understand teller cash levels?
- Is a broader cash management solution required to maximize the savings associated with cash handling holistically?



DENOMINATION SELECTION

- Is offering note denomination selection on the ATM functionality road maps?
- What denominations should the Bank offer per location?
- Which should be recycled and which denominations should be captured?



RETURN ON INVESTMENT

- How is success measured and how does the Bank decide where it makes financial sense to deploy recycling functionality?
- What are the components of the return on investment?
- Are there additional 'soft' benefits that need to be included in the rationalization?

What We Have Learned



Things We Have Learned About Recycling (so far!)



1. Current CIT cycles are rarely optimal where superfluous cash runs are not uncommon (e.g. cassette swaps with 70% notes remaining)



2. Largest FIs in North America have expressed interest in pursuing JIT (just in time) cash servicing.... assuming CIT can accommodate.



3. Cash managers have concerns about how CIT costs could increase if their Bank doesn't implement recycling at the same scale as the largest competitors



4. Outside of the biggest FIs driving their own fleets waiting for the networks to certify and implement recycling is going to be an issue



5. Recycling ATMs with higher capacity cassettes allows for longer sweep cycles for terminals taking in large volume of notes not offered for dispense



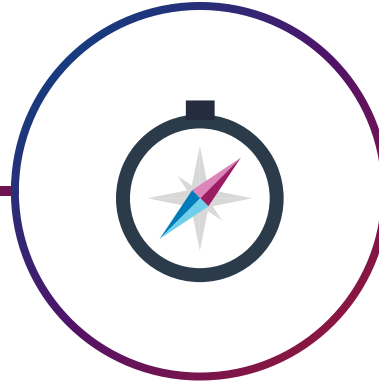
6. Higher capacity cassettes are going to require higher ATM cash limits (how much cash FIs are willing to risk and absorb associated with cost of funds)

The U.S. Can Benefit from Global Lessons Learned



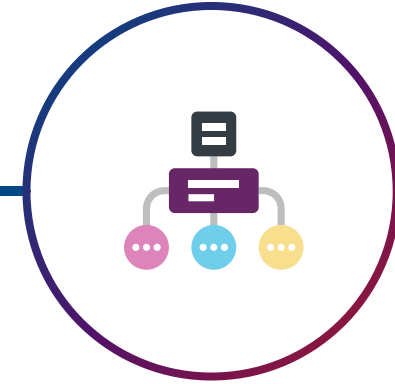
EDUCATION, EDUCATION, EDUCATION.

- Introducing self-service recycling requires a fundamental mind-shift for consumers, SMBs and bank staff.
- Consumers & SMBs 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 NOT A QUICK WIN. IT'S 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.

Questions



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Thank you for joining us!

For questions or support, contact your Diebold Nixdorf sales representative for a **complimentary Cash Recycling Assessment** or email us at americasmarketing@dieboldnixdorf.com to get started.

Continue the conversation at one of our global Customer Experience Centers. Contact us at [DieboldNixdorf.com/CEC](https://www.DieboldNixdorf.com/CEC) to schedule your visit.