

New solution concepts for cash management at banks and retail companies



Trends and drivers for optimizing cash cycles and the implementation of innovative technologies.

1. The cash situation – rising circulation volumes, high handling costs

According to the European Central Bank, the number of banknotes in circulation is currently rising at a rate of over eight percent each year. By the end of 2009, the value of cash used as a payment medium in transactions had risen to more than EUR 796 billion – a figure that represents more than three times the amount that was in use when the euro was introduced in 2002. And this is not simply a European phenomenon, as a look at the U.S. dollar shows: 42 percent more dollar notes are in circulation around the world today than in the year 2000. In the same period, circulation volumes for the British pound have risen by 50 percent, for the Chinese renmimbi by 60 percent, and for the Japanese yen by 45 percent.

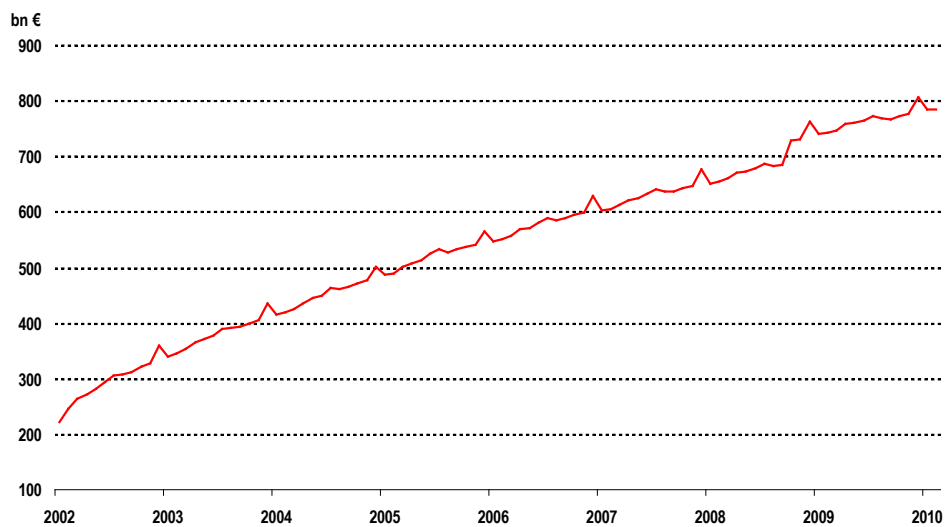


Figure 1: Increase in value of euro banknotes in circulation from 2002 to 2009.

Around the world, people still favor the use of cash, and thus circulation volumes continue to grow despite alternative cashless payment systems.

Fact: Nine out of ten transactions worldwide are carried out with cash; in Europe six of seven people pay with cash.

There are many reasons why cash is so popular. For one thing, we know that cash will always be accepted as a means of payment, whereas credit and debit cards are not welcomed everywhere. Consumers are also accustomed to using cash, and it enables them to make quick, anonymous payments. The average German actually has EUR 118 in his or her wallet, and Americans carry the equivalent of EUR 145 in cash. Today, nine out of ten transactions worldwide are handled in cash. Most of this cash is obtained at ATMs, with more than 80% of bank customers using an ATM at least once a month to withdraw cash. UK's automated teller machines alone handle 87 cash withdrawals per second.

Fact: USD 300 billion are spend for cash handling worldwide.

But there are drawbacks to this trend: the huge volume of cash in circulation pushes up cash handling costs for banks and retail companies. The key sources of expense are personnel costs, investment costs, material and clearing costs, insurance, opportunity costs associated with cash inventories, and logistics costs for transport and handling. In total, they represent a huge financial burden. According to surveys carried out by Wincor Nixdorf, Europe and the U.S. each spend more than EUR 50 billion on cash handling each year; worldwide annual cash handling costs total more than USD 300 billion. In Germany's retail sector alone, cash processes generate costs of approximately EUR 7.4 billion per year, and Germany's retail

banks spend around EUR 3.9 million. These two industries carry all the costs of cash handling in the German economy. The largest cost block occurs in bank branches and retail stores: 96 percent in retail and 86 percent in banking. The largest cost factor in cash handling is personnel costs, which account for an average of 61 percent of the expenses at banks and 72 percent in retail enterprises.

2. Challenges for retailers and banks

Fact: Cash processes in the store are time-consuming and inefficient. POS settlement alone takes between 10 and 15 minutes.

Fact: There are numerous security risks - from the risk of attacks to inventory discrepancies.

In retail environments, the checkout payment process takes between 10 and 25 seconds, depending on the retail segment involved. In addition, retailers have to prepare and reconcile conventional POS cash drawers in the cash office, often according to the double-checking principle: each cash drawer reconciliation process or change of cashier can take 10 to 15 minutes. Moreover, the cash office may still have to consolidate the cash takings manually and deposit them in a safe. Additional work is involved when cash has to be prepared for pickup by a cash-in-transit company, counted at a cash center and forwarded to the central bank. None of these activities creates business value, yet they all require high personnel resources. And they also harbor risks – namely of internal and external manipulation as well as robbery at the point of sale or during the CiT pickup process.

Germany's retail sector reported EUR 13.4 million loss in 4776 robberies during 2008. That year, cash-in-transit companies were ambushed 1307 times in Europe alone, according to the European Security Transport Association. 57 percent of these attacks occurred as CiT staff made their way from their vehicle to a cash point, 36 percent during replenishment of the ATM itself. And 15.4 million USD were stolen in 1645 bank raids in the U.S. in the last quarter of 2008 alone, only 1.7 million of which was ever recovered.

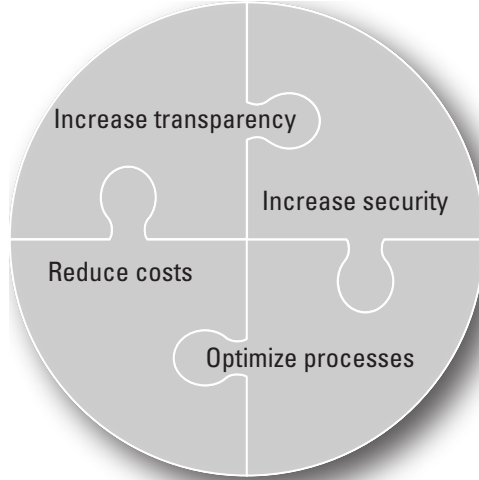
For retail banks, too, cash handling is a costly process. Although banks have succeeded in raising the level of automation in cash dispensing on self-service systems to 75 percent of withdrawal transactions worldwide since ATMs were first introduced, the remaining manual transactions that are handled at the bank counter generate even higher costs, with a counter withdrawal taking between 90 and 120 seconds per transaction.

The picture is similar for deposit transactions, particularly since the degree of automation here is much lower. A mere ten percent of cash deposits around the world are handled at self-service systems. This is so despite the fact that, according to surveys conducted by Wincor Nixdorf, secure, automated and fast electronic transactions on self-service deposit systems would reduce costs seven-fold compared with traditional counter deposits that involve manual banknote counting and validation, labor-intensive post-processing, and secure cash storage.

Alongside the high workload, associated costs, and potential security risks of cash handling, the issue of transparency in the cash cycle now plays an important role. Where is my cash at the moment? How much will I need, and when and where will I need it? These are questions that often cannot be answered – or are only answered inadequately – in today's process chain. The large number of interfaces and gateways in the traditional cash cycle all serve to increase the lack of transparency and represent potential sources of error.

Separate cash cycles in retail enterprises and retail banks

Even though retail banks and retail companies operate with virtually identical cash scenarios



that offer major synergy potential, up to now the cash cycles of the two industries have functioned largely independently of each other. In actual fact, when it comes to cash, retail banks and retailers are very closely linked. Approximately 90% of retail companies deposit their takings with a local bank and also obtain change there. The big retailing chains normally commission cash-in-transit companies to handle their cash replenishment and pickup processes. They represent only ten percent of retail enterprises, but their share of cash pickup operations lies at over 50 percent.

Figure 2: Challenges for banks and retailers in managing their cash cycles.

3. The solution concept – optimizing and integrating the cycles

The solution concept presented here is based on innovative information technology that was developed and built on the foundation of Wincor Nixdorf’s broad expertise in the banking and retail sectors. It addresses cross-industry cash processes, with the aim of optimizing and integrating bank and retail cash cycles.

The solution envisages an extension to the recycling concept, which is already established in automated teller machines and safes and involves the integration of deposited banknotes into a cycle inside the system and therefore can be withdrawn again from the system. Thanks to the use of innovative technologies, it is possible to create cash cycles within bank branches or retail stores, cycles between individual bank branches and retail stores (inter-business cycle) or cycles that include all cash points and the cash center (cash center cycle).

The vision: rationalize cash handling, link cross-industry processes intelligently and offer end-to-end solutions.

An analysis of cash cycles between banks and retail companies reveals that optimized management of cash streams — end-to-end cash cycle management — makes it possible to reduce costs in the long term and, at the same time, to improve transparency and security. This will result in future cash cycles being organized completely differently than they are today. Wincor Nixdorf’s vision involves rationalizing cash handling for bank branches and retail stores, intelligently linking cross-industry cash processes, and thus becoming the leading end-to-end supplier of cash handling solutions in this arena.

Development of this solution concept was based on the idea that the cash cycle is a special form of supply chain: by using a minimum of resources, a product (in this case, cash) should either be made available at the right time in the right quantity or be returned to the cash cycle. Rationalization measures should therefore start where the majority of expenditures for cash handling occur – in the retail stores and bank branches themselves. Manual cash processes are responsible for personnel costs, which represent the major percentage of overall costs

incurred. In a second step, cash streams can also be optimized across industries. Against this background, the following solution scenarios have been developed, each allowing the implementation of a closed cash cycle.

Cash cycles in retail stores: The focus in the retail cycle lies on automating cash processes in the store, with particular emphasis on closed cash cycles. This involves automating cash processes in the checkout zone and the cash office as well as linking the two.

In the same way in **bank branches**, intelligent, compatible cash cassettes can be interchanged between individual cash points — automated teller machines, cash recycling systems and automated teller safes. Essentially, two approaches are conceivable: first, cassettes can be consolidated from automated teller safes at the bank counter to automated teller safes in the back office. This scenario could be applied, for example, to branches of U.S. banks that have many counters. Second, the recycling concept is ideal when a branch has several cash points.

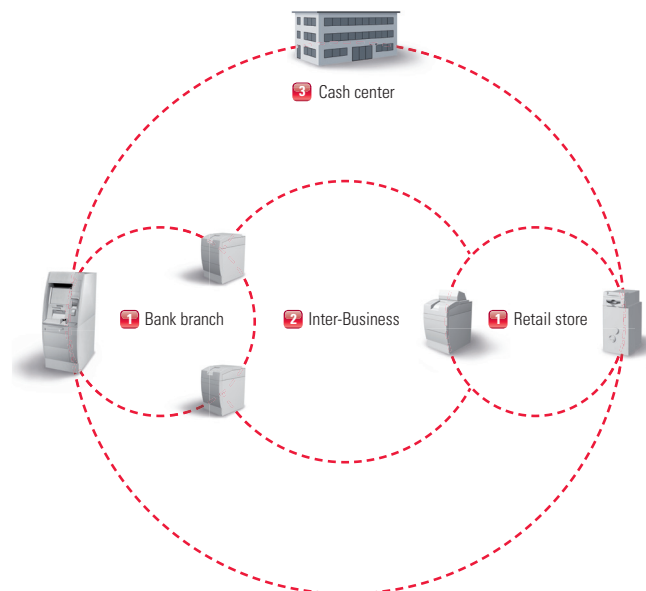


Figure 3: New solution concepts address branches and stores in the first step, yet also envisage optimization across the banking and retail sectors.

Inter-Business Cycle: In the inter-business cycle, cash cycle management solutions for cash handling reduce the cash streams passing between retail stores and bank branches, and thus also reduce the need for downstream processes. Cash no longer has to be delivered to the cash center and conveyed to the central bank; instead, banks can replenish their cash points directly with full banknote cassettes from retail stores.

Cash Center Cycle: In this future scenario, CiT companies and their cash centers, bank branches and retailers can all be integrated in the cash center cycle. This approach is based on the assumption that automatic filling and emptying of cash cassettes in the cash center's sorting systems represents cross-industrial cash cycle management.

4. The end-to-end portfolio

With its Cash Cycle Management™ Solutions portfolio, Wincor Nixdorf offers a new end-to-end solution concept for cash handling. It is the first supplier to exploit the common ground of cash handling processes in bank branches and retail stores. The components in the company's solution portfolio consist of cutting-edge hardware and software in conjunction with aligned end-to-end services. The portfolio has a modular structure and offers customers the greatest possible benefit when through the combination of modules that meet their individual needs.

New hardware generation with intelligent cassettes based on a universal standard.

One of the core elements in the portfolio is the new hardware system generation known as CINEO (Cash Intelligence – NEO/new). Its components can be deployed by banks as well as retail companies. The new product family consists of ATMs, cash recycling systems, automated teller safes and terminals as well as systems that automate cash handling at the retail checkout. The new system family sets new standards in ease of use, design, security and quality. The same applies to serviceability, with systems automatically providing a broad array of operating information. This enables proactive system management and maximum system availability, establishing a basis for protecting investments over the long term.

All the systems for banking and retailing scenarios use the same banknote processing technology. They also feature new storage media, which are based on a universal standard. These media are the enablers of the end-to-end concept, since they are used wherever cash is paid in or out across the entire system family and throughout the entire cash cycle. Intelligent chips in the cassettes provide information on the levels of cash inside, and where and when individual cassettes have been used or opened. In this way, the intelligent cassette plays a vital role in the seamless tracing of cash throughout the cash handling process.

Software spectrum with the following components: e.g. system monitoring, cash inventory forecasts and optimization, cash order management, tracking & tracing.

The current software portfolio is continually expanded and refined. Its solutions manage and optimize cash processes in bank branches and retail stores as well as across the entire cash supply chain – from the branch or store all the way to the central bank. Through the underlying Cash Cycle Management™ Solutions Base, Wincor Nixdorf offers innovative software modules built on a state-of-the-art software architecture. Its components offer solutions for system monitoring, cash inventory forecasts and optimization, cash order management, tracking & tracing, and management reporting. The Cash Cycle Management Solutions™ Base allows banks and retail companies to assume responsibility for managing their cash processes themselves. In this way, they benefit from the advantages that arise from our bundled software expertise for the banking and retail sectors, and can integrate their processes across the two sectors.

IT Services manage all cash processes in banks and retail enterprises.

All the functionalities of the Cash Cycle Management™ Solutions Base are also elements of the Wincor Nixdorf eServices Platform®. This is the basis for IT operation and cash cycle management by Wincor Nixdorf: banks and retail companies can thus hand over complete control of their cash processes to the Wincor Nixdorf service organization. Their customers benefit from specialized know-how, economies of scale, and from the international service organization, which guarantees uniform IT services management standards worldwide through the Wincor Nixdorf eServices Platform®. Enlisting Wincor Nixdorf's Services enables retailers and retail banks to focus on their core business, and frees up financial resources for investments in innovations. The benefits of this step are complete transparency of cash and IT processes at optimal cost and with maximum system availability.

5. The optimized cash cycle in a retail store

Wincor Nixdorf's Cash Cycle Management™ Solutions offer retail companies a vital starting point for simplifying the cash handling process in the cash office. The new solution's components make it possible to validate cash takings promptly and deposit them in safe-based systems, thanks to fast and efficient cash consolidation – without the need for time-consuming processes such as counting according to the four-eyes principle. In addition, cash that is paid into the systems can be used to provide change within the store, with the result that cashiers can be supplied with change directly from the store's own takings.

Approach 1: Takings are consolidated efficiently in the cash office and optimally prepared for pickup by a CiT operator.

Approach 2: In the checkout zone, cash processes at the POS are automated completely.

The new technology also makes it far simpler to pick up cash takings at the end of the day. The cassettes holding the auditable cash are collected by a cash-in-transit operator and integrated in the external cash cycle.

In the retail checkout zone, integrating this technology in traditional and self-service checkouts as well as in self-service payment terminals can further optimize cash processes. Taking cash and paying out change are part of a fully automated process in which cash that is deposited by customers is made available again for payout as change. In addition to this recycling approach, the key advantages of the concept include cash authentication, inventory analysis, transparency, and speed – and, as a consequence, efficiency.

Greater savings potential is generated by networking the processes in the checkout zone and the cash office. This is based on a closed cash cycle between the cash points in the checkout zone and the downstream systems in the cash office. The systems for the checkout zone feature an option whereby cash destined for pick-up can be transferred to a mobile, auditable drum storage module. This module is then carried to the cash office, "docked" into a docking station on the system in the cash office, and emptied by the machine. As a result, employees no longer come into contact with cash. The automation of this process spells maximum transparency with regard to cash holdings and significant cost savings along the entire process chain. CINEO technology enables a closed cash cycle inside a retail store.

6. The optimized cash cycle in a retail bank branch

Wincor Nixdorf has been offering cash recycling systems to optimize cash handling in the self-service zone and the front office of retail banks for a long time. The closed cash cycle in these systems makes deposited cash available again for withdrawal transactions following a banknote validation and fitness testing process, enabling banks to significantly reduce their workload and expenses.

The banknote storage concept in the new system family is truly innovative, since its intelligent end-to-end cassettes are the first to allow cash to be exchanged between individual cash points, thus building an internal cash cycle in a retail bank branch. Cash that is deposited in

The intelligent banknote storage concept allows the exchange of cash between the individual cash points in the self-service zone as well as between the front office and back office systems of a bank.

automated teller safes at the counter could, for example, be used for direct replenishment of an ATM in the self-service zone. Coupled with appropriate software applications, the intelligent banknote storage concept therefore allows one and the same cassette to be moved between the different cash points. This optimizes cash replenishment and collection processes on systems in the self-service zone, the front office and the back office, by establishing a closed cash cycle that is far more efficient than the previous scenario. It considerably reduces the work and costs involved as well as the risk of robbery and error, and makes cash handling in bank branches faster, more secure and more efficient.

From an overall standpoint, the innovative cassette paves the way for a transparent cash cycle, guarantees maximum audit compliance, and even enables cash to be exchanged across bank branches. Precise information on the value of the notes a cassette contains, its order data and a history of cassette deployment is available whenever needed. This results in maximum process transparency and security standards with a minimum of manual cash handling.

7. Cross-industrial optimization for retail and banking

In many countries, retail companies traditionally use CiT companies to transport their cash to the cash center. In contrast, retailers such as service station operators and small-business franchisees tend to deliver their cash takings directly to a local bank. Banks, in turn, also rely on CiT operators to deliver and pick up cash. This is a complex logistics process and often lacks transparency with regard to the amounts of cash being transported.

The new solution concept closes the cycle between banks and retail companies by ensuring that cash from deposit-heavy systems, such as those in retail environments, can be made available again for dispensing from ATMs or cash recycling systems.

However, things are quite different in the inter-business cycle. Here, the worlds of retail and banking converge, creating a cycle that includes retail stores, where cash is deposited, and automated teller machines and safes in banks, where cash is mainly dispensed. This cycle is based on the new banknote storage concept, which is compatible across the two industries. Cassettes that are filled with a retailer's takings are used to replenish ATMs at a nearby bank. The advantages of the cross-industrial approach include a far shorter cash cycle and massive reductions in handling and logistics costs.

Business models other than the scenarios described here are also conceivable and some have already been put into practice. They include the option of allowing customers to withdraw cash from their bank accounts in the form of payouts at the retail point of sale. This smart idea ensures that consumers are supplied with cash right where they need it.

8. Value proposition

With its Cash Cycle Management™ Solutions portfolio, Wincor Nixdorf offers customers a clear value proposition.

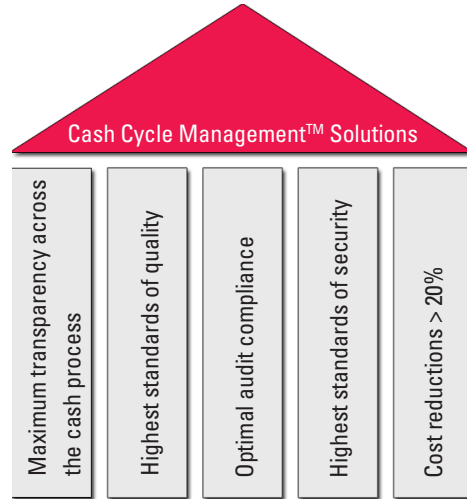


Figure 4: The value proposition of the new solution concept.

Retail banks and retail companies can use these solutions to reduce cash handling costs by more than 20%, since they eliminate manual cash processes and reduce the volume of cash in circulation. Additionally, there is a decline in administrative costs for managing and monitoring the cash supply chain as cash passes from the branch or store to the CiT operator and ultimately the central bank. Less cash in transit reduces the risk of losses and, with it, the need for provisions.

But there’s more: storing cash in intelligent closed systems reduces the risk of robbery, precludes manipulation by employees, and avoids inventory discrepancies in bank and retail systems as well as during transport. Altogether these facts reduce the risk of financial loss and greatly improves security throughout the entire cash process.

Continuous real-time views of current statuses and cassette monitoring at all points of delivery guarantee that every company involved is kept informed about cash inventories and cash movements in the supply chain. Thanks to integrated RFID tags, cash cassettes can be seamlessly monitored, which results in high transparency and improved risk management.

Bank branch and retail store employees are relieved of unproductive routine tasks and can use their time and energy for more productive activities such as sales and consulting. Another factor that greatly simplifies the process is the reduced number of contact points, applications and interfaces involved in cash handling.

Wincor Nixdorf’s goal for the future is to optimize the cash cycle across business industries and to incorporate cash centers and central banks in the new processes. Its vision involves implementing closed cash cycles between banks, retail companies, cash centers and central banks. These measures are designed to help retail banks and retailers to achieve maximum transparency along the entire process chain, maximum security during cash handling, and improved productivity.

The Cash Cycle Management™ Solutions portfolio comprising hardware, software and services is subject to ongoing development and expansion. With this approach, Wincor Nixdorf ensures that, in the future, customers will be able to procure all their cash handling services from a single source and just one end-to-end provider.

Wincor Nixdorf – Long-term cash handling expertise

Traditionally, Wincor Nixdorf sees cash process optimization as its domain. The company has already played a pioneering role in rolling out self-service technologies and cash recycling, and in designing and further developing cash handling processes. Over the course of more than three decades, Wincor Nixdorf has advanced to become one of the world's leading suppliers of cash solutions.

Wincor Nixdorf is an internationally recognized specialist in the field of innovative IT solutions for retail banks and retail companies. The company is deeply rooted in these two segments and has a profound understanding of the processes typical to the branch banking and retailing sectors. All over the globe, it has rolled out solutions that deliver optimal processes at lower cost and, at the same time, improve services for customers. This success is based on a comprehensive portfolio of individual hardware, software and services modules that can be combined to meet the specific needs and demands of banks and retailing enterprises.

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