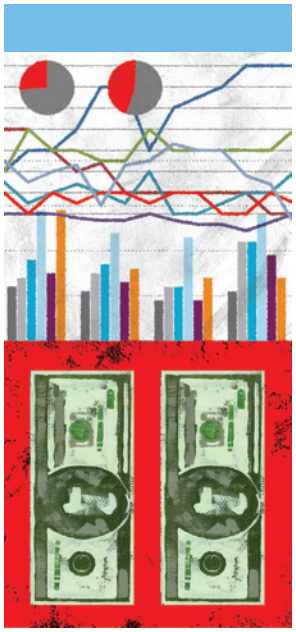

Attacking the cost of cash

Cards and mobile payments are gradually pushing the use of cash downward across the globe, with cash as a share of total payments declining from 92 percent in 2006 to 84 percent in 2016. But cash is not going away. People in diverse regions still rely on cash for a broad range of payments needs and will continue to do so for the foreseeable future. What is more, cash costs, accounting for five to ten percent of bank operating costs, are rising in absolute terms in most markets, even as usage is on the decline. There are three main levers banks can use to manage cash costs: making operations lean, right-sizing networks, and national pooling of resources. These actions can result in big payoffs both in markets where the use of cash is in steep decline as well as in those where consumers and businesses continue to rely heavily on cash.

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The long war on cash

The greater part of humanity lives in countries where at least 90 percent of transactions are made in cash. Even in these cash-intensive markets, however, cash is gradually losing ground to other payments instruments.

Generally, consumers in wealthier economies tend to favor noncash alternatives. Cash usage in Sweden, Finland, the UK, the Netherlands, Canada, France, and the United States has fallen well below 50 percent of total transaction volume. Germany, Japan, and Austria stand apart as wealthy countries where consumers maintain a strong preference for cash at the point of sale, despite universal availability of electronic payments instruments and the broad adoption of electronic transfers for recurring payments.

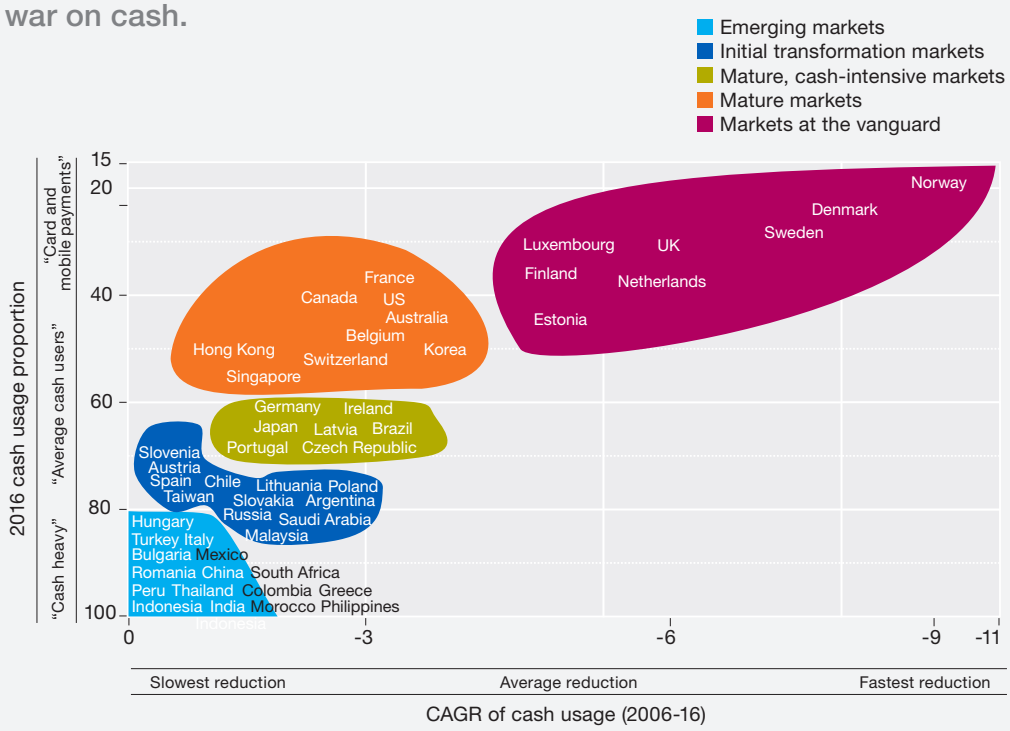
The vanguard in the war on cash is Northern Europe, where as few as one in every five payments is made in cash and using cash may even be difficult in stores and restaurants.

Markets can be sorted into five clusters, based on level of cash usage and the rate of decline in cash usage (Exhibit 1, page 18):

1. **Emerging markets** where cash accounts for at least 80 percent of transactions and the annual rate of decline of cash (as a share of all transactions) is less than one percent. Growth in cash transaction volume and value coincides with growth in branch and ATM networks (e.g., India, Indonesia, Morocco).
2. **Initial transformation markets**, where the annual rate of decline is less than three percent but recent trends in digital payments alternatives suggest these countries may join mature markets in a few years' time (e.g., Poland, Saudi Arabia).
3. **Mature, cash-intensive markets** with highly developed branch and ATM networks. Cash transaction volumes are resilient, despite growth in electronic payments. Extensive ATM networks testify to the commercial importance that cash still has for local banks (e.g., Germany, Japan).

Exhibit 1

Payments markets fall into five clusters based on their progress in the war on cash.



Source: BIS; central banks; ECB; Euromonitor: RBR; McKinsey Global Payments Map

4. **Mature markets** where cash has fallen to between 40 and 60 percent of total transaction volumes. The value of cash in circulation may still be growing, and the over-abundance of ATMs lowers efficiency (e.g., Canada, France, US).

5. **Markets at the vanguard**, where the availability of strong electronic instruments and concerted industry action have driven cash usage below 40 percent. In these markets, cash is a mere commodity and banks face a constant challenge to reduce the fixed costs of branch and ATM networks. Shared networks become a key lever for reducing costs (e.g., Norway, Denmark, Sweden).

No matter the country, cash will be around for a long time. Despite the general decline in usage and customers' weakening appreciation for cash, consumers in many countries will insist on using cash for some time. Some prefer cash for reasons of privacy and security. Others live in areas where poor cellphone coverage and frequent electricity outages make cash the most reliable way to pay. Consequently, banks need to maintain their cash services. If the costs of cash networks do not decline with usage, the burden per transaction will continue upward, making the service less accessible for users in the long run.

It is urgent, therefore, for banks to plan for an aggressive reduction in their cash distribution costs.

Cash is declining, but cash costs are rising. Why?

While cash everywhere accounts for a shrinking share of the payments pie, the costs of cash handling are rising practically everywhere. There are three main reasons for this:

- As world GDP increases, the value of cash in circulation is expanding to meet demand. Notable exceptions include the Nordics, the Netherlands, the UK, Estonia, and Australia, where the rate of reduction (over four percent per year) exceeds the growth in GDP. In fast-growing markets, banks incur additional costs as they extend their networks to underserved regions.
- In mature markets where the decline in cash relative to other instruments is slower than in vanguard markets but faster than in most of the world, fixed costs (which account for a high proportion of total cash operations costs) are difficult to eliminate.
- Cash remains an area of bank operations with high manual labor, especially in distribution, maintenance, and processing. In regions with rising labor costs and in the context of the rapid digitization of bank operations, the share of cash costs becomes increasingly relevant.

In both emerging and mature markets, banks must make careful choices as they right-size their networks. Specifically, they must decide where to eliminate branches and ATMs while continuing to address the cash needs of consumers and retailers.

Three levers for cash efficiency

The three key levers available to financial institutions for managing the costs of cash include:

1. Making cash operations lean (cash distribution centers and branches)
2. Optimizing bank-owned distribution networks (ATMs and branches)
3. Pooling resources with other banks to form a shared cash-handling network (nationwide utility)

Implemented together, these levers form a virtuous circle of cost savings, enabling the progressive augmentation of benefits (Exhibit 2, page 20).

1. Make cash distribution centers and branches lean

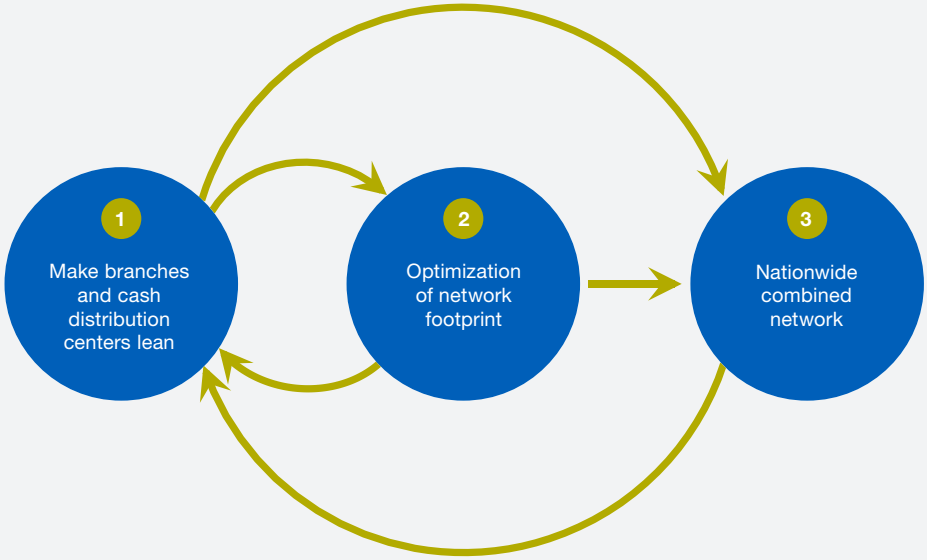
Many banks have already taken steps to increase the efficiency of their cash operations, but these operations still account for between five and ten percent of total bank operating costs (Exhibit 3, page 21). Most banks can reduce their cash costs by as much as 30 percent by applying lean principles to eliminate waste and maximize productivity in distribution centers, inventory management, and transportation.

Lean processes

The lean approach aims to maximize output and reduce waste. The biggest improvement in efficiency comes from the elimination of repeated steps in the replenishment process, primarily in cash distribution centers, where 40 percent of steps are checks and controls (for example, counting and recounting notes). In addition to streamlining workflows, some organizations have increased capacity by up to 20 percent by redesigning work areas to facilitate physical movement

Exhibit 2

There is a virtuous circle of cash optimization.



Source: McKinsey analysis

and smooth transitions from one station to the next, reprioritizing flows to reduce peaks, and aligning standard operating procedures across all collection points.

Improvements to workflow in cash processing centers cascade across a bank's network, bringing new levels of efficiency to transportation, branch cash operations, and ATM network management.

Cash forecasting and inventory management

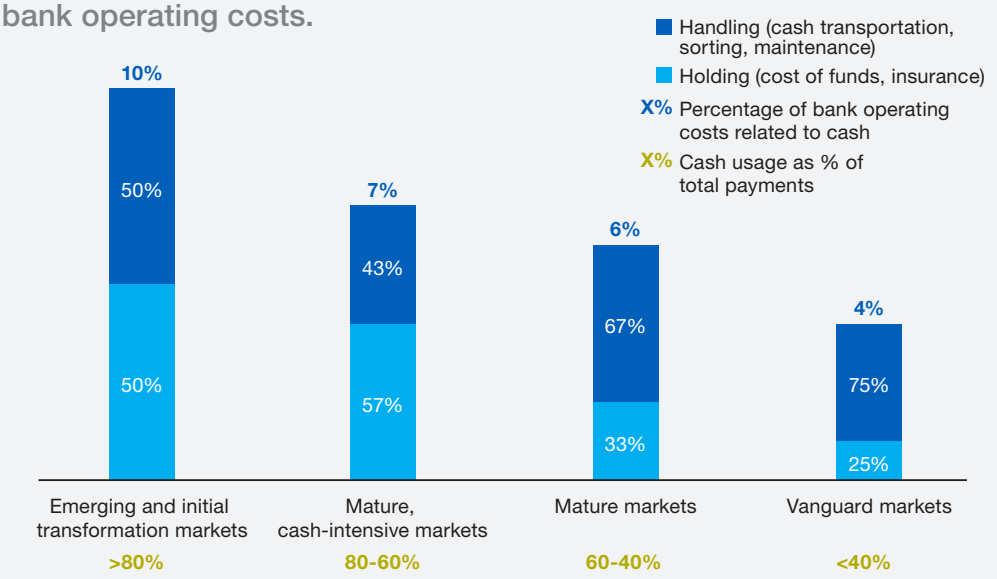
Our research shows that nearly half of banks rely on manual calculations (e.g., spreadsheets) to forecast cash needs for branches and ATMs. While some banks have implemented software applications to forecast cash needs, these tools are typically built for a particular set of hardware (e.g., ATMs) and do not offer an integrated view of cash needs across the network's diverse applications. Using advanced analytical tools with the broadest possible set of data, it is now possible to increase the accuracy of forecasts and recognize diverse indicators that can serve as advance warning of unanticipated changes in demand. With improved cash needs forecasting, banks could potentially reduce cash inventory by up to 30 percent (see sidebar, page 24).

Route optimization

Optimizing routes for armored vehicles is the hardest lever, especially in developing markets. As they extend their networks into underserved areas, banks face additional challenges due to outdated maps and the lack of historical data needed to forecast traffic patterns. Other key data that established commercial solutions tend to use (with the help of intensive heuristics) are largely

Exhibit 3

Cash operations still account for between five and ten percent of total bank operating costs.



Source: McKinsey analysis

unavailable. However, new mapping tools enable dispatchers to forecast traffic patterns using methods similar to those used to forecast inventory. Automated tools can also alert couriers and dispatchers to traffic problems as they emerge, allowing time to choose an alternate route. Several banks have used advanced analytics to cut their cash transportation (CIT) spending by between five and ten percent.

2. Right-sizing bank-owned distribution networks

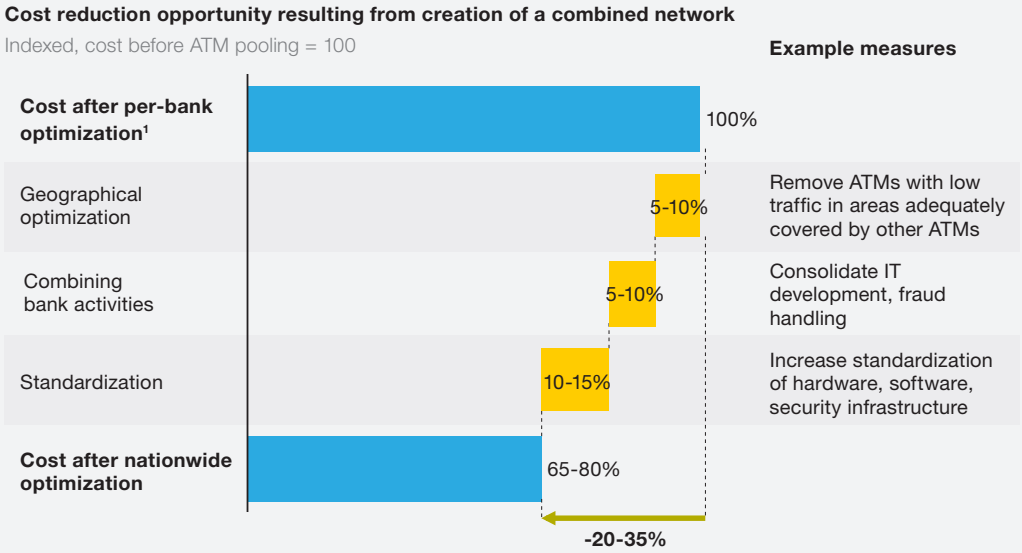
Network right-sizing entails investment in modern technology, including evening out the use levels of branches and ATMs across the bank's footprint.

ATMs incur expenses, consisting mainly of cash transport, IT hardware, and maintenance. In some markets, they also generate revenue from transaction fees. Estimating the effect of adding or removing an ATM to the network requires careful consideration, as such changes have a direct impact on both the cost and revenue of nearby ATMs. When determining how to improve the efficiency of a network, banks should identify drivers for each identified cost element. Line items and associated drivers can typically be categorized in four groups:

- Transaction-based costs (e.g., card and interchange fees)
- ATM location-based costs (e.g., electricity)
- ATM maintenance and replenishment (e.g., restocking cost)
- Other (e.g., back-end IT systems)

Exhibit 4

By consolidating resources, banks can save up to 35 percent in ATM costs.



[1] Not including the cost savings from pooling cash-counting facilities (e.g., the "sala conta" in Italy).
Source: McKinsey analysis

3. Optimizing cash distribution costs through a shared utility

The third lever, creating a national ATM utility, is the logical extension of the second and becomes increasingly relevant as cash usage falls and fixed costs rise relative to total costs. Pooling resources in a consolidated or joint network can ease the economic burden of maintaining the last ATM in an isolated locale where traffic is suboptimal. Shutting down a branch or ATM in a small town might not be significant as long as alternatives remain, but shutting down the last ATM in town could prompt severe public reaction.

In countries with a very low share of cash transactions, there is a requirement—legal, commercial, or both—to keep cash accessible to consumers. As revenue falls with the number of transactions and providing access to cash becomes a commodity with little opportunity for competitive distinction, banks may find that the costs of maintaining a network that fully covers a country become prohibitively high. But even within these constraints, banks in some vanguard markets have continued to eliminate significant costs by creating noncompetitive nationwide utilities. Banks in emerging markets can use the opportunity as a type of technological leapfrogging if they recognize that this is one of the key opportunities for cooperating, rather than competing, with each other. In both mature and emerging markets, the primary benefits to combining networks include (Exhibit 4):

- Optimized geographic distribution of ATMs by removing less frequently used machines from areas with adequate coverage
- Improved security by sharing knowledge about attempted fraud and by retaining ATMs in safe locations
- Increased standardization of machines and interfaces, which improves fraud prevention, reduces the complexity of software upgrades, and speeds up maintenance.

Building momentum toward a national utility requires significant groundwork. It is especially important to broach the idea with retail and small business banking executives, as well as with transaction banking executives responsible for large retailers, in order to seek their input (e.g., addressing concerns about branding and assessing the impact on customer satisfaction).

Cooperation across banks may be subject to competition laws and public perception and requires careful consideration and alignment with the relevant regulators. In many cases the regulator is supportive of such efficiency. Business cases based on operational efficiency gains and better use of network coverage have proven attractive to the participants, dropping distribution costs by between 20 and 35 percent overall. These benefits come on top of benefits from pooling cash-counting centers. Various countries have implemented ATM pooling or have announced plans to do so, including Sweden and the Netherlands.

At present there are two alternatives for sharing the costs of ATM networks: full implementation and partial implementation.

1. **Full implementation:** In Sweden and Finland, a nationwide utility provider (jointly owned by banks) has replaced entirely bank-branded ATMs. The Netherlands has recently announced plans to implement a similar model.
2. **Partial implementation:** Denmark and Norway have moved partially toward the creation of a nationwide utility for cash handling. In Italy the "sala-conta" model employs shared cash-counting centers in regional hubs. Although this unlocks significant savings for participating banks, it forgoes significant opportunity for further cost reduction from ATM homogenizing.

These models can be deployed in diverse markets, with positive impact on customer experience. The development of a nationwide ATM utility can also address rising per-transaction costs of handling cash in a shrinking market, as ATM network infrastructure costs are managed at the industry level, instead of a single bank maintaining a network for an ever-smaller segment of cash-dependent customers.

Recommendations

Financial institutions of all sizes can reap significant benefits by applying the three levers discussed above. To maximize impact, banks should designate a cash service line executive responsible for articulating a comprehensive strategy for cash processing, branches, and ATMs focused on efficiency and customer satisfaction. Banks should execute the battle against cash costs in five stages:

1. Examine cash-sorting and handling processes to identify waste, streamline processes, and reduce labor expense.
2. Build a comprehensive view of cash inventory, aggregating data from the diverse software systems used in cash centers, branches, and ATMs. Apply advanced

Analytical Cash Efficiency (ACE)—a McKinsey Solution

Banks hold in their branches, ATMs, and vaults hundreds of millions of dollars more than they require to fund customers' daily cash needs. Neither invested nor used in payments transactions, this idle cash is the single biggest inefficiency in banks' cash operations. And banks typically do not even book the "unearned interest" as an expense, as the surplus stock is stashed away in thousands of branches and tens of thousands of ATMs, making it practically invisible.

The failure to track and report excess cash means there is no incentive to reduce the burden of unearned interest. Branch managers, focused on customer satisfaction, often "hoard" cash to cover sudden spikes in customer demand. ATM managers overstock machines in order to increase uptime, decrease trips, and keep restocking costs low.

Through combined analysis of external indicators as well as internal data on cash demand, McKinsey's Analytical Cash Efficiency (ACE)—a cloud-based analytical tool—enables cash managers not only to optimize cash stock but also to plan for noncyclical surges. By scheduling deliveries in anticipation of increased demand, managers maintain an even flow of cash through processing centers and cash in transit.

Typically lowering cash levels by 20 to 30 percent, and costs for cash in transit by 10 to 20 percent, ACE has boosted net interest income and lowered insurance costs for banks in diverse global markets.

analytical tools, incorporating both external and internal data, to forecast both cyclical and noncyclical fluctuations.

3. Analyze cash in transit with the aim of reducing the number of trips, ensuring that trucks carry a full load, and analyzing traffic patterns to identify the fastest route at different times of day.
4. Review volume trends at cash points. Eliminate machines that operate well below capacity and maintain an even distribution of ATMs and branches.
5. Once banks have optimized their own networks they should explore the idea of creating a national utility to manage ATMs, undertaking discussions within their own institutions as well as with other institutions, industry associations, and regulatory authorities.

* * *

Attacking cash costs is a crucial battle in the war on cash. Banks in all markets should take decisive steps to cut the costs of their cash operations: streamlining processes, eliminating excess cash stock, and optimizing distribution networks. In the long term, banks, industry associations, and regulators should focus on pursuing a national utility for cash handling. Northern Europe is leading the charge. While the need to lower fixed costs is more urgent in vanguard countries with higher share of electronic payments, emerging and mature economies have a unique opportunity to leapfrog and reap big gains in efficiency and customer satisfaction.

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