IT Costs in Banks: Revisit Your Beliefs!

BCG's 2003 European IT Benchmarking in Banking Study
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IT COSTS IN BANKS: REVISE YOUR BELIEFS!

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THE AUTHORS
IT and IT cost structure play an increasingly decisive role in the performance of every bank. During the last few years, banks spent more and more money on IT: today IT consumes some 10% of total bank revenues. This fact clearly shows that efficient and effective IT management constitutes one of the most significant profitability drivers a bank can address. However, for many banks the cost structure and performance of IT lie well hidden within a “black box.” Very few know the exact size and contents of this box, thus many potential levers to increase the level of IT efficiency and effectiveness go unused. This has immediate, damaging consequences to the overall performance of the whole business.

To demystify this mysterious black box, CIOs must first develop a reasonable estimate for a fair IT cost position. With our IT benchmarking report we intend to provide figures to help CIOs determine this position. Eleven leading European banks provided data, which was collected in the second half of 2003. The report covers actual business and IT data for 2001 and 2002 as well as provides 2003 estimates. These numbers surely reflect the difficult business environment banks experienced during the last three years, and the figures should always be viewed within their specific business context. We plan to conduct a study on IT costs in banks every year henceforth, so we will soon be able to see more clearly how business environment affects IT costs in the long run.

The results of the study were surprising. The data proved wrong some common beliefs, including the idea that above-average IT cost ratios mean outstanding value creation: banks with relatively high IT costs compared to their revenues did not outperform their competitors in terms of effectiveness and efficiency.

The insights gained from this benchmarking study, our own research, and experiences from our work with clients lead us to the conclusion that it is a well-defined IT strategy and managerial competence that leads to value creation, not the level of IT investment itself. Strategic management of IT is the key to controlling IT costs. We have identified three critical levers for improving IT efficiency and effectiveness in banking—but, as always, they will only have a positive impact upon implementation when the unique situation of the individual bank is taken into consideration.

Dr. Rainer Minz  
Senior vice president

Mr. Heinz Möllenkamp  
Vice president

Mr. Ralf Dreischmeier  
Vice president

Mr. Frank Felden  
Manager
EXECUTIVE SUMMARY

About the Study—Methodology

- In the second half of 2003 we asked 11 top-tier European banks from four countries to answer a questionnaire on business and IT data.

- Additionally, we asked selected participants to fill out IT management scorecards (primarily qualitative scorecards concerning the IT value chain) and conducted surveys with internal IT customers on user satisfaction.

Nine Findings from the Benchmarking

- Finding 1: IT costs continue to rise. IT costs have reached an all-time high: from 2001 to 2002, share of IT costs increased by a percentage point—from 15% to 16%. Banks anticipate an even more dramatic increase in 2003: share of IT costs is expected to increase to 20%. A typical bank pays some 24 basis points of total assets and spends €40 annually per customer on IT. About 10% of a typical bank’s total revenues—that is, roughly €17,000 per employee—are consumed by IT.

- Finding 2: User satisfaction does not rise with IT spending. Although IT spending in banks is significant, internal customers are still not satisfied with the services provided. The overall quality of IT services is consistently ranked “average.” In particular, customers named three areas in which IT should improve: business and IT strategy alignment, first-level user-helpdesk responsiveness, and mission-critical application availability.

- Finding 3: Large differences in levels of IT spending exist. We found that there is a huge gap between banks with higher IT costs per revenues (high spenders) and those with lower IT costs per revenues (low spenders): for high spenders IT costs per revenues is 60% higher, and IT costs per operative expenses is 54% higher.

- Finding 4: Three different patterns of IT spending identified. Our analysis reveals three different investment patterns in the European banking industry. We’ve used these patterns to categorize banks into three groups: The first group, aggressive investors, heavily increased spending on IT, although

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Within this report, the term share of IT costs is used for IT costs as a percentage of operating expenses.
revenues could not match that increase in the same measure. A second group, moderate investors, showed a fair increase in IT costs combined with stable revenues. Most banks from the sample are in this group. The third group, the active cost savers, is the only one that decreased IT costs relative to revenues.

■ Finding 5: Higher IT spending does not translate into better operational efficiency. High spenders have a higher overall cost-income ratio (61% in contrast to 59% for the whole sample) and fractionally less revenue per employee (€181,000 compared to €182,000 for the whole sample). Obviously, higher IT budgets do not help reduce the overall operating expenses for these banks, nor do they help increase revenues. There is little evidence that high spenders currently create value by increasing efficiency.

■ Finding 6: Higher IT spending does not lead to more effectiveness. High spenders in fact generate lower revenues per assets. They could produce revenues of only 190 basis points of assets compared to 260 basis points for low spenders. There is no evidence that high spenders can transform IT expenses into competitive advantage and outperform their peer group.

■ Finding 7: Adopting standard applications does not (yet) generate cost advantages. High spenders usually use more standard software. This structural difference can be seen in the significantly lower share of IT costs for participants using mostly custom-developed software in contrast to banks with a mixed structure. In discussions with the benchmarking participants we saw that standard software systems were often installed quite recently. In the short term, then, old systems—already written off in the accounting ledgers—are often more cost efficient for the bank. But the multitude of support and auxiliary systems added to monolithic core systems over time has created complex interfaces, a difficult-to-maintain job network, and manual-update processes. The resulting "application jungle" is getting more and more difficult to maintain every year and increases the bank’s operational risk. Therefore, CIOs expect investments in standard software to pay off in the long run.

■ Finding 8: Maintenance costs tend to increase with higher IT spending. High spenders have maintenance costs of about one-third of their total application development budget, compared to only about one-quarter for low spenders. This can be attributed at least in part to the fact that during the transition phase, banks often have to run several operational systems in parallel. The vast majority of projects for high spenders fall into the categories, "production, internal processes" and "infrastructure"—project categories with the highest share of maintenance projects. In contrast, low spenders use 43% of their project budgets in the area of "customer, sales, and marketing." This is 60% more than the 27% for high spenders.

■ Finding 9: Scale is not being translated into cost advantages. There is no correlation between assets and IT costs per assets. None of the larger benchmark participants manages to realize economies of scale.
Three Levers to Improve IT Performance

- Lever 1: Improve business and IT strategy alignment! There appears to be a mismatch between business strategy and IT strategy. Many banks still do not maintain a central IT project portfolio, a requirement for prioritizing IT projects based on their total business value. There is often no group cap on development projects—that is, business units do not have to compete for funding. The business case for an IT project should be based on exactly the same measures as business projects, and IT must be explicit about the benefits to the business. Therefore, a key lever for improving business and IT strategy alignment at the business-unit and corporate levels is to introduce well-defined alignment processes and to set up joint committees with members from corporate and decentralized IT as well as the business side.

- Lever 2: Tighten IT performance and value management! Most banks have only a low degree of IT cost transparency. There are four basic steps to improving IT performance and value management. After business and IT goals have been aligned, an information model must be developed for key decision makers. Performance metrics must then be developed and linked to staff compensation levels. The key is to focus on simple, meaningful, tangible, and measurable metrics that can be easily derived across the whole organization.

- Lever 3: Increase level of standardization! The complexity of banks' IT landscapes has grown significantly over recent years, resulting from heavy investment in application development as well as merger and acquisition activity in the European banking sector. Maximizing standardization is an absolute "must" for banks to undertake if they are to reduce IT costs. IT functions should seek to increase the level of standardization across their organizations. BCG has identified a four-point "standardization map" to assist CIOs in approaching this challenge:
  - Increase the power of the central CIO organization
  - Consider selective offshoring and outsourcing
  - Increase level of IT architecture standardization
  - Implement standard desktop services for all employees
A brief description of our approach

One of the key questions in dealing with IT costs in banks is how to determine a fair cost position. The common scientific approach of calculating what the increase in operating costs would be if a bank had no IT at all does not work: today IT does not primarily constitute a means to running the business more efficiently—that is, decreasing operating costs. On the contrary, for a long time now IT has been an enabler, offering products and processes not possible without IT. Therefore, the common approach of focusing exclusively on operating costs is doomed to fail.

A more useful and pragmatic approach is to compare banks within a consistent peer group and see how other banks succeed in managing their IT costs. Naturally this approach must address several concerns about comparability within the sample. We address these issues later in this section (see the subsection “comparability of figures”).

DATA COLLECTION APPROACH
In the second half of 2003 we asked 11 top-tier European banks from four countries to answer a questionnaire on business and IT data. Additionally, we asked selected participants to fill out IT management scorecards (primarily qualitative scorecards concerning the IT value chain) and conducted surveys with internal IT customers on user satisfaction.

Participants received detailed feedback going well beyond the scope of this report, including both a full data appendix showing the individual cost position of all participants and specific feedback from us (see Exhibit 1). In addition, we provided analyses on the business-segment level to all participants delivering the relevant data.
Discussing the ratios

Obviously, comparing absolute IT costs within a sample of different banks does not make sense, thus our pragmatic approach works with IT cost ratios. Selecting meaningful reference values for these ratios is consequently a decisive issue. There are generally three areas from which to choose these values, each facilitating a different view of the IT cost position:

- **Ratios by volume** reflects the common notion that more customers, more assets, more accounts, etc. will drive IT costs. Since volume does not change quickly (outside of major changes in the business portfolio such as mergers and acquisitions), it is a pretty good base for long-term IT cost figures such as IT costs per customer. Banks use this volume to generate their annual revenue stream.

- Revenue streams are much more volatile, changing mid-term with economic patterns, interest rates, and individual success in the market. Nevertheless, examining ratios by revenue reveals what part of a bank’s revenues is being consumed by IT activities.

- Finally, one can use ratios by cost indicators, such as general administrative costs or number of employees, to determine the importance of IT costs compared to other cost categories.

**Ratios by volume**

When it comes to determining the right level of IT costs, size does matter. The “bigger” the bank, one would obviously think, the higher the absolute IT costs. One would also expect some economies of scale, that is, reduced IT unit costs (we will take up this topic in finding 9).
But how can a study measure the size of a bank? Today the banking business consists of numerous, different business lines. In some European countries it is even possible to combine all these business lines within a single legal entity—for example, the German “Universalbank.” However, no common volume measure for all business lines exists. Therefore, for this study we worked with six business segments covering the entire banking business and used them to map specific banks’ businesses within an independent framework. For each segment, we identified meaningful volume indicators and set the segment-specific IT costs in relation to one of the volume drivers. For example, in retail banking we used IT costs per customer and in private banking IT costs per euro assets under management (see Exhibit 2).

EXHIBIT 2

<table>
<thead>
<tr>
<th>Segment</th>
<th>Definition of segment</th>
<th>Volume drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail banking</td>
<td>Mass retail and affluent customers with up to €250,000 private assets, and enterprises with less than €5 million to €10 million revenues per year</td>
<td>Total assets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customers</td>
</tr>
<tr>
<td>Corporate banking</td>
<td>Enterprises with more than €5 million to €10 million revenues per year, multinationals, institutions, and governments</td>
<td></td>
</tr>
<tr>
<td>Private banking</td>
<td>Private wealth management for wealthy individuals and families with more than €250,000 private assets</td>
<td></td>
</tr>
<tr>
<td>Asset management</td>
<td>Management of mutual funds and institutional mandates (in Germany: special funds)</td>
<td></td>
</tr>
<tr>
<td>Capital markets</td>
<td>Trading and sales, mergers and acquisitions, and new issues or primary markets</td>
<td></td>
</tr>
<tr>
<td>Transaction banking</td>
<td>Payments processing, securities transactions and/or securities deposits as well as custody business for external customers</td>
<td></td>
</tr>
</tbody>
</table>

Source: BCG’s 2003 European IT Benchmarking in Banking Study

VOLUME DRIVERS SHOULD BE DEFINED ON BUSINESS-SEGMENT LEVEL

The variation of these ratios shows how much an average bank spends on IT (for example, per customer) and what is best practice within the sample. If the ratio exceeds the average on a long-term basis, IT managers ought to prove that additional value is being created for the business. Furthermore, these ratios comprise a good indicator for executives looking for a reasonable, long-term target for their IT costs.

Ratios by revenues

This group of indicators shows what portion of revenues IT costs consume. In this study, the term revenues is used identically to net income before operating expenses and equals the sum of net interest income, net fees and commission income, dealing profits before expenses, and other operating income. It is important to use only net income figures since changes to, say, the market interest level, should not influence the IT ratios by revenues.

For the entire bank, the term IT cost per total revenues is, in this text, referred to as IT cost-income ratio, or ITCIR. This concept shows what share of its revenues a bank has spent overall during the last year on IT. In contrast to ratios by volume, ITCIR always reflects the mid-term business success of a bank. In order to
compare a bank's IT costs within its peer group, we need to consider the actual performance of a bank in its given market environment. Or stated differently, ratios by volume indicate what IT budget a bank ought to spend, whereas ratios by revenues dictate how much a bank is able to spend. ITCIR can be broken down by the same business segments as discussed above, thereby demonstrating the very important difference IT has per euro of revenues for, say, retail banking and capital markets.

Ratios by cost base

This third group of indicators can be used to understand the importance of IT costs compared to other cost categories. One important measure is to relate IT costs to operating expenses. Note that this cost category already includes IT costs, therefore it is called, in this text, share of IT costs. However, one should keep in mind that operating expenses do not equal total costs since operating expenses do not contain cost categories directly deducted from net income, for example, interest expenses. (See the glossary for more details on IT costs and operating expenses.)

Since the cost base is usually more stable than revenues, ratios by cost base is a better choice for long-term comparison than ratios by revenues. On the other hand, ratios by cost base always contain some efficiency aspect: a high share of IT costs could mean that inefficient IT is adding significantly to operating expenses. But it could also mean that an especially powerful IT is enabling the business to run very efficiently, thereby significantly reducing the non-IT part of operating expenses and increasing the share of IT cost. Because of this, ratios by cost base must always be analyzed in combination with absolute figures or other IT ratios.

Some other ratios relate IT costs to parts of the cost base. One key indicator is IT costs per personnel costs, which assumes higher IT costs should be reflected in higher back-office productivity and thus lower personnel costs. It usually uses the number of employees as a substitute for personnel costs. Another key measure compares the cost of IT operations to ongoing operating expenses, trying to blank out investment patterns.

Comparability of figures

Attempts to analyze and describe a fair IT cost position often meet with skepticism when comparing IT costs by ratios at all. The key point is that only a homogenous participant sample allows a valid comparison. Therefore, the banks within our benchmarking sample had to qualify for participation by matching at least one of the following three criteria:

- European player not just focused on the home market
- Bank with leading position in its home market
- Bank with total assets over €250 billion
Although this study offers a valid comparison of IT costs across banks, readers should bear in mind that the small sample size (leading European banks only) does not provide statistically accurate data in a scientific sense. Nevertheless, we believe one can still see major trends and draw very interesting conclusions in a pragmatic way. All banks meeting the above-mentioned criteria have the same complex business requirements for products, processes, market approach, processing volume, covered business segments, and the like. Since business requirements drive IT requirements, we expect that all the banks in our study have similar challenges in dealing with IT complexity.

To avoid gathering the "wrong" data through participants having different notions about key terms such as IT costs, application development, and so forth, we provided them with an extensive, consistent set of definitions. We also supported them interactively during the data collection phase to ensure a common understanding of the figures. The most important terms used in the benchmarking are defined in the glossary.

Even in a sample of leading European banks there are still differences within the group of participants that have to be taken into account. One is size. We had expected to see some economies of scale within the sample. We discuss our conclusions regarding influence of bank size in finding 9. We discuss two other influencing factors in the remainder of this section.

Influence of regional differences

Regional differences have a strong impact on ratios by revenues. In the 2003 sample, average ITCIR of the most expensive country was twice as high as average ITCIR of the least expensive. The main reasons for those differences are local variations in the following:

- Purchase power and salaries
- Value-chain depth—in particular, use of outsourcing
- Regulatory requirements—in particular, reporting requirements
- Tax laws—in particular, V.A.T. and options for deduction
- Market structure and level of competition—in particular, degree of concentration and the difficulty a bank has retaining its business

Consideration of these country-specific differences allows us to calculate correction factors that can be used to adjust for differences by country. In next year's feedback sessions, benchmarking participants will receive an estimate of what their cost position would be if country differences were taken out of the equation.
Influence of business mix

Some banks within the sample differ significantly in terms of business mix and strategic focus. It is well known, for example, that the capital market segment in banks has much more complex requirements than retail banking. Exhibit 3 illustrates this statement for the benchmarking sample: the higher the share of retail and private banking, the lower the ITCIR.

**EXHIBIT 3**

![Graph showing the impact of business mix on ITCIR](source: BCG's 2003 European IT Benchmarking in Banking Study)

**IMPACT OF BUSINESS MIX ON ITCIR**

The difference is pretty significant: 17 basis points ITCIR per additional percentage point retail/private banking business. This proves that it is important to compare banks on a business-segment level. However, please note that the correlation is not very strong ($R^2$ is only 44%). Obviously, other factors come firmly into play, such as quality of IT management.
In this section we present the main findings of our study. We then use the next section to build on these findings to show how banks can use them to improve their IT functions.

Finding 1: IT costs continue to rise

Since the early 1970s IT has played an important role for all banks. Today no bank could perform a single customer transaction without massive support from all kinds of IT systems: sales systems to enter transactions; product engines designed by product development departments to work through business processes; transaction engines to execute thousands of highly standardized transactions within seconds; booking engines to post activities to myriad ledgers; controlling systems to monitor banks' businesses; and reporting systems to meet regulatory requirements. This list is far from complete. From a technical point of view, a bank could be seen as a huge database system with millions of transactions performed with the data.

It is no wonder that banks spend more and more money on IT. From 2001 to 2002, share of IT costs increased by a full percentage point (see Exhibit 4). Banks anticipate an even stronger increase in 2003: share of IT costs is expected to rise to 20%—that is, every fifth euro would be spent on IT. Next year's report will reveal whether the economic environment will have really allowed banks to expand IT expenses to this extent. Please note that we used a ratio by cost base for showing banks' prognoses for future IT cost structures. This is because cost forecasts are typically more reliable than revenue or business-volume forecasts, as banks spend a lot of time and effort on their budgeting processes and tend to stick to the results.

Increasing IT costs, per se, is not a problem—indeed this is expected as banks automate a growing share of their processes, transforming personnel costs into IT costs. The problem with escalating IT costs arises when the higher cost is not reflected in a higher return. As we will discuss later, our study shows this is frequently the case: higher revenues and lower non-IT costs often do not cover higher IT costs (see finding 5).
A main reason for this could be that IT is still a big "black box": IT is responsible for the most expensive projects in the bank. These projects are almost never completed on time and within budget; and sometimes they do not even deliver what they promised at the outset. Even those rare projects that work out as planned usually significantly increase the ongoing cost of running IT. Trying to understand the reasons behind this phenomenon often results in detailed discussions of technical issues that senior managers tend to ignore.

**KEY FIGURES FROM 2003 BENCHMARKING SAMPLE**
In our benchmarking study we gathered participants' current cost positions, ratios by volume, revenues, and cost base (see Exhibit 5). Note that all ratios are shown at the total bank level only. This is to help banks get a first impression of their individual, overall cost position. In order to identify areas for improvement, a more detailed understanding of cost positions within specific business segments is required. Banks feeling this would help improve their cost positions should consider participating in next year's benchmarking study to receive the more detailed individual feedback from the study.
Finding 2: User satisfaction does not rise with IT spending

Although banks spend a lot on IT, internal customers still are not really satisfied with the services they provide. As part of our research we surveyed internal customer (that is, business) satisfaction with respect to six different dimensions (see Exhibit 6). None of the banks’ customers is “highly satisfied” with its IT services.

As shown in Exhibit 6, the overall quality of IT services is consistently ranked “average.” In particular, customers named three areas in which IT should improve:

- Business and IT strategy alignment
- Responsiveness of first-level user helpdesk
- Availability of mission-critical applications
Finding 3: Large differences in levels of IT spending exist

To conduct further analysis, we split the banks into two groups: high spenders have higher-than-average ITCIR and low spenders have lower-than-average ITCIR. Highly complex banks should not show large differences in IT costs per revenue or share of IT costs. What we actually found is that there is a huge gap: high spenders’ IT costs per revenues are 60% higher than low spenders’, and high spenders’ IT costs per operative expenses are 54% higher.
Finding 4: Three different patterns of IT spending identified

Now we examine different patterns of IT investments in relation to business growth. If revenues rise at least in equal dimension to IT costs, the additional business should generate enough profit to “pay” for the additional IT expenses. This, however, is not the case for most participants.

From a bird’s-eye view, banks need to manage their investment cycle effectively. This means a bank needs to operate with stable IT costs for at least three to five years after two to three years of focused IT investments.

Our analysis shows that there are actually three main investment patterns in the European banking industry (see Exhibit 8).

EXHIBIT 8

THREE IT INVESTMENT PATTERNS

All banks within the sample fall into one of the following categories:

- The first group, aggressive investors, heavily increased spending in IT although revenues could not match that increase in the same measure. Such an increase in absolute IT costs by more than 5% usually means an investment in new, major IT systems or a fundamental reengineering of the IT architecture. Surprisingly, these projects are being tackled during difficult economic times. The banks in this group will have to make sure to keep the remaining investment cycle time short and economical with the target of achieving stable IT costs in the mid-term.

- A second group, moderate investors, shows a fair increase in IT costs combined with stable revenues. This is the biggest group in the sample. This probably reflects the higher inflation rate in the IT indus-
try combined with increasing regulatory requirements such as Basel II and IFRS. Moderate investors do not show a clear investment pattern. They are either in transition between phases in the investment cycle, or incremental IT cost increases are a long-term pattern. Therefore, these banks must watch the risk of slightly increasing their IT costs every year, slowly building a competitive disadvantage.

- The third group, active cost savers, managed to decrease IT costs relative to revenues over the last three years. At least two banks in this group publicly announced IT cost-cutting initiatives recently. Active cost savers should try to expand the time before their next investment cycles begin without neglecting the need to quickly adapt to changing business environments.

**Finding 5: Higher IT spending does not translate into better operational efficiency**

Generally, there are two ways IT can create value for business:

- **Increase a bank’s efficiency.** This means a bank will have below-average operational expenses without cutting back on product or process quality.

- **Increase a bank’s effectiveness.** This means IT functionality will enable unique products or processes thus providing a competitive advantage in the market.

In finding 3, we divided the benchmarked banks into two categories: high spenders and low spenders (banks with above-average and banks with below-average ITCIR). For this finding as well as the following findings we again use this distinction to consider effectiveness and efficiency.

**METHODOLOGY**

One of the most difficult topics in IT management is measuring IT’s value creation. Many banks justify their above-average IT costs with leading-edge functionality, which supposedly provides inimitable competitive advantage for the bank; therefore, clear, comprehensible identification of the actual created value is crucial.

In order to measure and compare effectiveness and efficiency, we require a view on business performance. As was the case for IT costs, we used ratios derived from absolute figures to compare banks. Ratios combining volume and revenue figures can work as a first indicator for effectiveness:

- **Total assets per customer,** an average of €25,000 in the sample, shows a bank’s potential to attract customer assets with its product portfolio.

- **Revenues per total assets,** an average of 220 basis points in the sample, proves a bank’s potential to generate revenues from the assets it has.

- **Revenues per customer,** an average of €580 in the sample, measures a bank’s ability to leverage its customer base.
As Exhibit 9 shows, high spenders have a higher overall cost-income ratio (61% in contrast to 59% for the whole sample) and fractionally less revenue per employee (€181,000 compared to €182,000 for the whole sample). Obviously, the increased IT budget does not help decrease the overall operating expenses for these banks nor does it help to increase revenues.

This result is surprising. One is inclined to expect some back-office productivity improvement through higher automation and better IT support. This would enable the bank to run with fewer personnel and, therefore, with lower non-IT operating expenses. The results from the study indicate that this is not the case. Please note that the general cost-income ratio already includes the IT cost-income ratio because IT costs are part of overall operating expenses. This strengthens our conclusion that higher IT spending has no significant impact on non-IT costs.
Looking more closely at back-office employees (see Exhibit 10), one might expect that higher IT investments lead to fewer back-office personnel (due to higher back-office productivity) and—if back-office personnel costs are proportional to back-office FTEs—save on back-office personnel costs. But there is no clear pattern visible: only two of the six banks providing the necessary data actually managed to lower costs (total of back office and IT), while two are in the quadrant where the total actually increases. At least from a short-term perspective, we see no proof for improved back-office productivity. To validate this assertion we will have to conduct this analysis for at least three years, as some delay in effects may come into play. All in all, there is little evidence that high spenders currently create value for the bank by increasing efficiency.

EXHIBIT 9

NO EFFICIENCY IMPROVEMENT BY IT VISIBLE

Growing IT costs leads to shrinking back-office personnel

Total of IT and back-office personnel costs increases

Growing IT costs leads to shrinking back-office personnel

Shrinking IT costs paid for with growing back-office personnel

Total of IT and back-office personnel costs per unit decreases

(1) Growth of back-office personnel costs seen as proportional to growth in number of back-office FTEs
(2) Growth 2001–2002
Source: BCG’s 2003 European IT Benchmarking in Banking Study

EXHIBIT 10

GROWTH OF IT COSTS AND BACK-OFFICE PERSONNEL
**Finding 6: Higher IT spending does not lead to more effectiveness**

Keeping this surprising result in mind, we now consider the other side of the coin: do higher IT costs increase business effectiveness? First of all, the exact meaning of effectiveness has to be clarified. It is much more difficult to measure effectiveness—that is, a bank’s market success through superior products or processes—than efficiency. Strong competitive advantages should help banks generate higher revenues than a similar bank of equal size. Furthermore, those banks should also be able to attract more assets from their customers than their peer group. Therefore, the three business ratios defined in the methodology insert in finding 5 (total assets per customer, revenues per total assets, and revenues per customer) could work as a first indicator for comparing banks’ effectiveness.

It is important to note that IT support is not the only factor related to effectiveness. The benchmarking sample for this study is not big enough to ensure that all business-driven factors are leveled out. A much better correlation can be achieved when analyzing effectiveness on the business segment level—retail banking, for example—than using total assets as the volume driver for the overall business.

Taking these issues into account, the following conclusions are still well-grounded enough to allow for some interesting insights: Exhibit 11 shows that high spenders generate in fact lower revenues per assets. They could actually produce revenues of only 190 basis points of assets compared to 260 basis points in the other group. This is certainly not a result likely to legitimize the request for more “intensive” IT support. Quite the contrary, there is no evidence here that high spenders can transform those expenses into competitive advantage that would allow them to outperform their peer group.

**EXHIBIT 11**

![No evidence of higher effectiveness](source: BCG's 2003 European IT Benchmarking in Banking Study)
One can also see that high spenders keep their operating costs per asset lower than low spenders. But due to lower revenues, the resulting profit is still only 80 basis points of assets in contrast to 110 basis points in the peer group. This harkens back to the result already discussed in the previous section: high spenders also have higher cost-income ratios. Please note that our grouping does not reflect business mix or regional patterns.

**Finding 7: Adopting standard applications does not (yet) generate cost advantages**

To get a better understanding of why some banks’ IT functions are much more expensive without providing additional business value, one needs to dig deeper into the details of IT delivery. IT can generally be divided into two areas:

- Production: setting up and maintaining the technical environment to run an IT platform
- Application development: developing, customizing, and maintaining an IT platform to support banking processes

Touching on the distinction between high spenders and low spenders used before, Exhibit 12 breaks down IT costs into two categories: application development costs per revenues and IT production costs per revenues. If we look at high spenders, we discover that application development increases to 5% of revenues (up 25%) and production to 8% (up 43%) of revenues. What could lie behind this phenomenon?

**Exhibit 12**

![Graph](image)

Source: BCG’s 2003 European IT Benchmarking in Banking Study

**IT COST BROKEN DOWN TO APPLICATION DEVELOPMENT AND PRODUCTION**
Looking at IT architecture, one might expect banks using legacy systems to have higher costs. But, in fact, as the benchmarking data indicates, in the near term it is mostly cheaper to use old monolithic software because there are no migration costs and the systems are completely written off in the accounting ledgers. We will later discuss in finding 8 what other considerations should be taken into account here.

**EXHIBIT 13**

**Banks with lower IT cost ratios tend to use less standard software**

If we compare the two groups of banks as introduced in finding 3, we see that high spenders usually use more standard software (see Exhibit 13).

**EXHIBIT 14**

**Custom-developed software tends to be less expensive**
Exhibit 14 shows that this structural difference can be seen in the significantly lower share of IT costs for participants using mostly custom-developed software in contrast to banks with a mixed structure. Please note that in all banks most systems are still custom developed.

However, just taking an accounting view of current cost levels is not enough. In discussion with the benchmarking participants, we saw that standard software systems were often installed quite recently. But the multitude of support and auxiliary systems added to monolithic core systems over time had created complex interfaces, a difficult-to-maintain job network, and manual-update processes. The resulting "application jungle" becomes more and more difficult to maintain every year and increases the bank's operational risk. A typical bank's architecture—significantly simplified to ensure confidentiality—is shown in Exhibit 15.

**EXHIBIT 15**

The need for standardization, the countless interfaces, an increasing deficiency in relevant programming skills and technical know-how, as well as a lack of (comprehensive) documentation all hamper quick reaction to new business requirements or regulations.

Banking CIOs believe that the change to new, modular—often packaged—software is expensive but still offers sizable advantages in the long run. It helps lower maintenance costs significantly, provide higher flexibility, and—once in a stable state—lower risks for making changes with respect to feasibility, time, and cost, as well as data security and vulnerability.
Finding 8: Maintenance costs tend to increase with higher IT spending

If we assume that high spenders run relatively new systems, we would expect this group of banks to have a lower share of maintenance costs. In reality, maintenance for high spenders uses up about one-third of the total application development budget compared to only about one-quarter for low spenders (see Exhibit 16). We also know that the total application development costs of high spenders are higher on average. This could mean that banks that have updated their systems have not subsequently managed to lower their maintenance costs. This can partly be attributed to the fact that, during the transition phase, banks often have to run several operational systems in parallel. We should see significant improvements here in the future.

EXHIBIT 16

APPLICATION DEVELOPMENT COSTS BY PROJECT TYPE

Furthermore, the vast majority of high spenders' projects fall into the categories, "production, internal processes" and "infrastructure" (see Exhibit 17). These project categories have the highest share of maintenance projects. In contrast, low spenders use 43% of their project budget in the area of "customer, sales, and marketing." This is 60% more than the 27% used by high spenders. This is a real competitive advantage if one considers that projects in this category have a fair chance of having a direct impact on the business by improving efficiency and effectiveness.
Finding 9: Scale is not being translated into cost advantages

The biggest bank in the benchmarking sample has about three times the assets of the smallest bank. But do bigger banks benefit from their size? As Exhibit 18 shows, this is not the case. Actually, there is no correlation at all between assets and IT costs per assets ($R^2 = 1\%$). Apparently the bigger players in the sample did not realize any benefit from their size in terms of lower IT costs. This is quite surprising since our experience shows that there should be scale benefits at least in IT operations and desktop services. We also see indications for this in the group of participating banks, although the sample is too small to derive a generalized scale factor. It seems then that larger banks have a relative cost advantage in some cost categories but spend more in others, especially in application development.

Exhibit 18

No economies of scale visible
Taking all nine findings into account, it becomes clear that most of the alleged drivers for high IT costs seem to be rooted in structural difficulties that cannot be changed on short notice: IT architecture, sourcing models, project portfolios, and staffing mix. Only a solution to these structural challenges allows a better IT cost base and thus provides competitive advantage to the bank. Since these issues can only be addressed on a long-term basis, the advantage is sustainable and apparently difficult to imitate.

Strategic internal management of IT is the key issue for controlling IT costs, not day-to-day management required to run the IT department. Strategic IT management needs to focus on redesigning IT so that the structural environment best supports an efficient IT service delivery. IT has an opportunity to provide real competitive advantage to the bank, and BCG has identified three critical levers for improving the efficiency and effectiveness of IT in banking (see Exhibit 19). These levers provide the opportunity for positive, short-term impact on the IT cost base as well as sustainable, mid-term increases in value creation through IT.

**EXHIBIT 19**

**THREE LEVERS FOR IT IMPROVEMENT**

Source: BCG's 2003 European IT Benchmarking in Banking Study
Lever 1: Improve business and IT strategy alignment!

As discussed before, high spenders are not necessarily more efficient (finding 5) nor are they more effective (finding 6): there appears to be a mismatch between business strategy and IT strategy. Indeed, in the course of our research and discussions with participants, we frequently encountered the perception that IT and business speak different languages—IT often claims that business does not respond to its needs in a precise, practical way; conversely, business is not satisfied with the service delivered by its IT function.

A key lever for improving business and IT strategy alignment at the business-unit and corporate levels is the introduction of well-defined alignment processes and joint committees with members from corporate and decentralized IT as well as the business side.

IT project-portfolio management is a key factor in aligning business and IT strategy. Many banks have business-unit-specific IT project portfolios that are more or less aligned with the business portfolio of that particular business line. But even those portfolios are often not managed using value-based metrics; the business case for an IT project should be based on exactly the same measures as business projects. IT must be explicit about the benefits for the business lines; for example, reduced recharges achieved through a consolidation project.

Banks should enforce business and IT strategy alignment by maintaining a central, fully integrated project portfolio that monitors progress and budget as well as business objectives, functionalities, and prioritization. The portfolio should be updated regularly and all projects reviewed after each phase. IT projects should always be linked to a specific business objective and based on business cases that apply the same metrics as business projects. This ensures that IT projects focus on economic profit rather than on implementing technology for its own sake.

In addition, individual business units should have to compete for their share of the IT project budget on a corporate level, thus ensuring that overall corporate objectives and strategies are met and helping enforce standards across the organization.

In our experience, significant improvements to business and IT strategy alignment can be realized within one year. The impact on IT efficiency and effectiveness can be significant.

Lever 2: Tighten IT performance and value management!

During the course of the study and in many client projects, we have found that IT costs are far from transparent. Banks in general have struggled to decipher a clear view of their own IT cost baseline, particularly in relation to value creation (see findings 5 and 6).
Business cases for IT projects contain cost-benefit analyses, but our research has shown that the delivery of benefits and the value they create are not tracked (for example, cost savings are often not built into the budget once the project has been delivered). But without transparency, IT functions cannot measure their performance. They cannot sensibly prioritize or suspend projects, negotiate with vendors, or apply meaningful recharges to their business partners.

Value and performance management, however, is more than just cost transparency and benefit tracking. Banks should develop an IT dashboard that not only measures how efficiently IT provides its services, but also how well IT helps fulfill strategic business objectives and support organizational effectiveness.

In our view, there are four basic steps to improving IT performance and value management (see Exhibit 20). After business and IT goals have been aligned (levers 1), an information model must be developed for key decision makers. Performance metrics must then be developed and linked to staff compensation levels.

**EXHIBIT 20**

To implement a meaningful system of metrics, a detailed business strategy roadmap for IT needs to be defined.

On the highest level, IT performance should be measured against achievement of business-defined goals.

Different management levels act on different decision levels—from top strategic decisions to daily operational ones.

A specific information model is needed for each particular decision-making tier.

Implementing a "change culture" within the IT organization is essential to improve performance.

This is best achieved by linking individual compensation to the metrics used for the respective tiers.

Business strategy and IT goals need to be translated into a comprehensive view of operational and strategic measures.

Measures: strategic needs of enterprise, needs of individual customer, internal IT business performance, ongoing IT innovation and learning.

**FOUR STEPS TO IT VALUE AND PERFORMANCE MANAGEMENT**

Rigorous but pragmatic performance and value management are vital to ensuring that the IT function is run efficiently and the bank is in control of its IT investment cycle (see finding 4). Best-in-class banks use a well-defined set of simple metrics that allow them to measure the performance of each individual IT service provided. These metrics do not just focus on ratios discussed in this report (for example, IT costs per revenues) but also address unit costs (for example, IT costs per current account or per transaction). Other metrics are based on an IT-balanced scorecard approach that measures more qualitative aspects such as customer satisfaction (see finding 2) and the ability of the IT organization to "learn" and improve.
The move towards shared IT services models means that business units do not directly control their IT budgets; costs are instead recharged from the center. In general, banks currently do this via a combination of allocation percentages and defined unit costs. Most banks told us that they are planning to move to a "utility" or "on-demand" type of charging mechanism (for example, per transaction costs) for the long term. We believe this would vastly increase business transparency of IT costs and provide a better understanding of the real IT cost drivers. These measures are, however, far from being implemented very soon.

Lever 3: Increase level of standardization!

A common theme among our discussions with banks is the fact that increasing complexity drives IT costs. The complexity of banks’ IT landscapes has grown significantly over recent years, the result of heavy investment in application development as well as merger and acquisition activity in the European banking sector.

Maximizing standardization is an absolute "must" for banks to reduce IT costs. As a result of increased cost pressures, many banks have already identified opportunities to create value by standardizing their IT architecture on business-unit and corporate levels. However, our research reveals that fewer than half of these opportunities have been implemented successfully. Despite the fact that many standardization and consolidation projects began two or more years ago, very few banks have thus far managed to reduce their IT costs.

EXHIBIT 21

A FOUR-POINT STANDARDIZATION MAP TO REDUCE COMPLEXITY

Source: BCG’s 2003 European IT Benchmarking in Banking Study
We believe that banks have not exploited the opportunities afforded them from economies of scale (as finding 9 supports) or from standardization. New applications and functional developments have overshadowed efficiency gained from reduction in complexity. Thus we conclude that there are still significant opportunities for creating value by standardizing IT infrastructure, desktop applications, product processing, and support systems.

IT functions should therefore seek to increase the level of standardization across their organizations. BCG has identified a four-point “standardization map” to assist CIOs in approaching this challenge:

**Increase power of central CIO organization!**

In most industries, there is already a strong push toward centralization and standardization of the IT function. This trend is weaker in the banking industry. Moreover, even though some banks have started moving in this direction, the role and empowerment of the CIO tends to vary widely.

A key learning from BCG’s Global IT Management Benchmarking, a wide study of IT functions across many industries, was that in order to drive standardization, companies must first increase the power and mandate of the CIO. In practice, this means the CIO governance model should be top-down rather than “democratic.” Business-unit IT functions must agree to accept standards as defined on a corporate level. It is also crucial that controlling processes are in place. "Degree of standardization" is a key metric for IT performance and value management (see lever 2).

**Consider selective offshoring and outsourcing!**

Our research shows no clear correlation between the overall sourcing strategy (in-house vs. outsourcing) and IT efficiency:

- Many banks in the sample just finalized outsourcing deals or are assessing the option to outsource.
- Some banks have set up pilots in noncritical areas. The same is true for offshoring: shifting capacity to low-cost countries, either by founding subsidiaries or working with a third-party provider.
- Other banks rely solely on in-house services yet run their IT function very efficiently.

Most of the banks that recently introduced outsourcing seem to have slightly increased their IT costs. However, the data is not extensive enough to draw definitive conclusions on this issue. In 2004 BCG will dedicate a special section of the benchmarking study to outsourcing and offshoring so as to clearly highlight their economic value as well as typical problems, and pitfalls.

Drawing on our experience from client projects in various industries, we believe there is already ample opportunity to reduce costs by outsourcing specific functions. If banks are running subscale IT operations,
outsourcing or joint ventures may be the only possibility for reaching a competitive cost position. Outsourcing, however, is not a silver bullet: banks must understand their current cost base in detail as it compares to the market in order to maximize the value created by the deal.

Whether IT operations are in-house or outsourced, offshoring will remain a major area of focus for IT. Most UK banks and some European banks are already planning to extend their offshoring activities. While it may provide a chance to reduce IT costs (typically in the order of 30% to 50%), offshoring also presents sizeable risks. Cultural differences and resulting inefficiencies may outweigh potential cost savings if the transition is not managed properly.

Banks therefore should have a clear vision of their business and IT strategies before introducing outsourcing or offshoring. A well-developed and tested sourcing strategy is key to generating value.

This also holds true for determining to what extent external staff should be hired for application development. External employees are clearly more expensive on an hourly basis. On the other hand, they are highly focused on a specific project and are not pulled away by nonproductive tasks. Use of external employees provides additional flexibility in that the bank only needs to pay for special knowledge when required, and it can ramp down the resources after a project is complete.

Surprisingly, the benchmarking data indicates that low spenders use almost twice as much external resource capacity—67% of full-time equivalents (FTEs) in contrast to 38% for their peer group (see Exhibit 22). It appears that using external resources pays off, although they come with a higher price per hour. This is contrary to our consulting experience in most projects. One explanation may be that there is a problem managing internal resources efficiently. To validate this hypothesis, it will be necessary to compare banks with a high level of external resources to banks with a high degree of internal resources and application-development efficiency.

**EXHIBIT 22**

<table>
<thead>
<tr>
<th>Percentage of all staff</th>
<th>62%</th>
<th>33%</th>
<th>38%</th>
<th>67%</th>
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<tr>
<td>Internal</td>
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<tr>
<td>External</td>
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</tbody>
</table>

Source: BCG’s 2003 European IT Benchmarking in Banking Study

**Banks with higher IT cost ratios tend to use more internal staff**
Increase level of IT architecture standardization!

As discussed in finding 7 (advantages of standard software not yet exploited), IT architecture complexity is vital to improving IT efficiency. Compared to other industries, banks still have very complex application landscapes and platforms. Most banks have invested heavily in business and support applications over recent years. IT functions are now faced with an increasingly difficult task in managing IT architecture.

It appears that complexity drives application maintenance costs. Banks that manage to reduce complexity will have lower IT cost ratios. Consolidation and standardization should therefore be a key strategic objective for banks in the coming years.

Implement standard desktop services for all employees!

Over the last two years, several banks have outsourced all of their IT desktop services, including first-level user support. However, we observed significant variations in IT desktop costs per employee among participants.

The key drivers for IT desktop costs include the number of platforms and supported applications. Best-in-class organizations have standardized their desktops group wide and have reduced the number of supported applications. Banks with a high cost base often have many different standards across their business units, independent of whether they have outsourced desktop services or not. The key issue when considering outsourcing is to understand the current cost base compared to the market benchmarks; negotiating a deal based on the current cost base may result in reduced overall cost, but compared to competition, it may still be way above market average.
GLOSSARY

ASSET MANAGEMENT
Management of third-party assets, including management of mutual funds and institutional mandates (in Germany: special funds).

ASSETS UNDER MANAGEMENT
Assets administered by a financial institution that are beneficially owned by clients and are therefore not reported on the balance sheet of the financial institution. Services provided are at least of an administrative nature, such as safekeeping securities, collecting investment income, and settling purchase and sale transactions, but they may also comprise portfolio management on behalf of the client.

APPLICATION DEVELOPMENT
All costs for software development (generation of preliminary studies and specialized concepts, as well as realization and application testing), advancement, maintenance, and development tools.

BUSINESS VOLUME
Measure of the size of a bank’s business. Volume measures are segment specific and reflect key business drivers (for example, customers in retail banking).

CAPITAL MARKETS
Business segment responsible for trading and sales, mergers and acquisitions, and new issues/primary markets.

COST-INCOME RATIO (CIR)
Operating expenses per total revenues (see "key financial terms" below).

CORPORATE BANKING
Business segment responsible for enterprises with more than €5 million to €10 million revenue per year, multinationals, institutions, and governments. Note: the range is used to allow as many participants as possible to use their individual definitions.

CUSTOM DEVELOPMENT
Proprietary application; bank is responsible for maintenance.

DESKTOP SERVICES
Short for desktop services/local support: includes PC hardware/software, LAN, desktop management, first-level user support, self-service terminal operations, support functions comprising specific overhead and support functions such as management, controlling, purchasing, security services, and ATM.

GLOBAL IT MANAGEMENT BENCHMARKING (GITMAB)
BCG benchmark study for globally operating companies with multiple business units and a mix of central and decentralized IT organizations. The goal of this study was to generate transparency on current and future directions in IT management.

HIGH SPENDERS
Group of participating banks with above-average ITCIR.

INTERNAL CUSTOMER
Business lines and business-line employees within the bank using the services of the IT function.
**IT ARCHITECTURE**
An enterprise-wide blueprint for IT (time horizon up to five years). It reflects the business model and is driven by business requirements. The IT architecture serves as a framework for making technology decisions and typically consists of four components: business architecture (or functional architecture), application architecture, information architecture, and technical architecture.

**IT COSTS**
Direct and indirect IT cost accruing in central IT, business segments, and support functions, including personnel costs and costs for external support; material costs comprising hardware, software, network, and other costs (voice communication and postage are not included); other expenses include allocations and markup.

**IT COST-INCOME RATIO (ITCIR)**
IT cost per total revenues (see "key financial terms" below).

**IT EFFECTIVENESS**
Ability of the IT function to enable the bank to provide unique products or processes resulting in a competitive advantage in the market.

**IT EFFICIENCY**
Ability of the IT function to enable the bank to have below-average operational expenses without cutting back on product or process quality.

**IT INFRASTRUCTURE**
Technical platforms and components of IT (for example, WAN, servers, mail systems, operating systems).

**IT STRATEGY**
A prospective, business-driven view of information needs and systems/technology requirements, together with a coordinated, integrated, company-wide strategy and plan for meeting them in a way that maximizes value.

**KEY FINANCIAL TERMS**
Within this study, we do not differentiate between costs and expenses or between income and revenues. Please refer to Exhibit 23 for a detailed definition of all financial terms used.

**EXHIBIT 23**

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<th>Interest receivable</th>
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<td>Interest payable</td>
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<td>Net interest income</td>
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<td>Fees and commission receivable</td>
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<td>Net fees and commission income</td>
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<td>Dealing profits before expenses</td>
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<td>Other operating income</td>
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<td>Total revenues</td>
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<td>Administrative expenses</td>
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<td>Provisions for loan losses</td>
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<td>Operating expenses</td>
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<td><strong>Profit</strong></td>
<td>25</td>
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Source: BCG's 2003 European IT Benchmarking in Banking Study

**LOW SPENDERS**
Group of participating banks with below-average ITCIR.

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**KEY FINANCIAL TERMS USED IN THIS STUDY (EXAMPLE)**
MAINTENANCE
All efforts ensuring ongoing operations.

"MUST" PROJECTS
Projects prescribed by law or regulations or necessary for ensuring continuous business operations.

OFFSHORING
IT services provided by personnel abroad, typically in a low-cost country.

OPERATING EXPENSES
Administrative and other expenses (see "key financial terms" above).

OUTSOURCING
IT services provided by an external company; can refer to projects or services (for example, maintenance of a given application, operation of first-level user support in one country) or complete outsourcing of fully functional areas (for example, whole IT production and/or operations).

PRIVATE BANKING
Business segment responsible for private wealth management for wealthy individuals and families with more than €250,000 in private assets.

PRODUCTION/OPERATIONS
IT production costs including cost of data center operations and WAN, excluding voice communication and postage.

RETAIL BANKING
Business segment responsible for mass retail and mass-affluent customers with up to €250,000 of private assets, and small-to-medium enterprises (SME) with less than €5 million to €10 million annual revenue.

REVENUES
Net income before operating expenses; equals sum of net interest income, net fees, commission income, dealing profits before expenses, and other operating income (see "key financial terms" above).

SHARE OF IT COSTS
IT cost as a percentage of operating expenses.

"SHOULD/COULD" PROJECTS
Projects essential for strategy, efficiency, and controlling or for other related factors.

STANDARD SOFTWARE
Also: off-the-shelf software; application program developed by software provider for sale to third parties, although the application may be customized to a user’s requirements, the lion's share of maintenance is still done by the software provider.

TOTAL ASSETS
Sum of all current and long-term assets (for example, tangible and intangible assets, receivables, debt securities and other fixed-interest securities, shares and other variable-yield securities, investments, and shares in affiliated companies).

TRANSACTION BANKING
Business segment responsible for payments, custody business, securities transactions, and securities-deposit processing. Only considered a separate business segment if the bank offers those services to third parties.

USER HELPDESK (UHD)
Support unit for internal customers of IT, typically structured in first-level helpdesk (common user problems, solution requiring no specialist knowledge) and second-level helpdesk (problems and questions which require deeper knowledge). UHDS are often organized into call centers (see also: desktop services/local support).
Dr. Rainer Minz is a senior vice president in BCG’s Cologne office and leader of the worldwide IT practice area.

Mr. Heinz Möllenkamp is a vice president in BCG’s Cologne office.

Mr. Ralf Dreischmeier is a vice president in BCG’s London office.

Mr. Frank Felden is a manager in BCG’s Cologne office.

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Contacts

For further information on this study, please contact:

Dr. Rainer Minz: minz.rainer@bcg.com
Heinz Möhlenkamp: moellenkamp.heinz@bcg.com
Ralf Dreischmeier: dreischmeier.ralf@bcg.com
Frank Felden: felden.frank@bcg.com
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