TeBIT 2014 Executive Report

PAVING THE PATHS TO NEW REVENUE
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PAVING THE PATHS TO NEW REVENUE

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THE BEST STRATEGIES LEVERAGE both good ideas and good timing.

While traditional telecom services are facing challenges (which by now are traditional, too), new offerings, in new areas, are showing promise. Keeping the momentum going (and growing) means investing in IT that can spur and support innovation—and doing it now.

Even if the idea and the timing look right, what are the specifics? Where should telcos focus their investments? Can they buck the usual trend of their IT operating expenses increasing along with their capital expenditures? Can increasingly popular levers—such as outsourcing and commercial off-the-shelf software—be leveraged more efficiently? Will moving to less complex solutions and operating models always bring cost advantages? These are some of the key questions addressed in TeBIT 2014, a telco IT benchmarking study jointly developed in 2010 and conducted annually by The Global IT Association for Telecommunications (ETIS) and The Boston Consulting Group.

The report that follows highlights the insights unveiled by this year’s TeBIT study. The idea is not only to identify the IT challenges telcos face, but how they can address them. Just as importantly, the report examines how IT can best be leveraged to help telcos seize the opportunities today’s market presents. As it did last year, the study analyzes how telcos are steering their top capital-expenditure initiatives, how levers like outsourcing and commercial off-the-shelf software are being implemented, and how, perhaps, those levers could be optimized still. New this year is a close look at the relationship between complexity and costs. While one might think less complexity means lower costs, the link is not always clear cut.

TeBIT 2014 devotes much of its analysis to differentiation, looking at what telco IT departments are doing—and can do—to help set operators apart. Perhaps that is fitting, as the TeBIT study itself is a unique benchmark—created by the telcos for the telcos, and coordinated by an independent nonprofit organization with no financial interest in the outcome. All of this year’s participants have taken part in previous surveys. By participating in this benchmark, operators get an unbiased, in-depth, telecom-specific look at the IT environment of their organization.

There has been a tradition among the TeBIT participants to openly share all data (on a company level) in order to encourage discussion and exchange of knowledge. This is the distinct advantage of TeBIT—that is, knowing the companies you benchmark against. To make the sharing of information even easier, this year’s questionnaire was
significantly shortened from previous versions, so as to get to the core data while greatly reducing the collection effort for participants. While this executive report is publicly available, companies that take part in the benchmarking can access the full results, including a comprehensive publication containing rich participant data as well as further trend analysis and data correlation. Moreover, participants are eligible for a one-on-one discussion of their company-specific results with the core TeBIT benchmarking team.

This year’s findings show IT units continuing their shift in focus from cost reduction to innovation—a strategy that increasingly looks like the right idea at the right time. But the data also suggests that telcos might, in effect, be able to have their cake and eat it, too: reducing operating expenses even as they increase capital expenditures. That would mark a break from past cost cycles, but perhaps that is only fitting, too. For telcos, future growth will mean breaking from older ideas on how, and where, to build business. ETIS and BCG believe that benchmarking and open exchange on past experience can help them do that—successfully, efficiently, and soon.
As their fixed and mobile businesses continue to struggle, telecom companies know that growth must come from new places, such as digital and IT services. Telco IT units can help pave these paths to new revenue by spurring and supporting unique innovative offerings and improved customer experiences. This year’s telco IT benchmarking study (TeBIT)—a survey of IT spending by and performance of European operators that was completed in July 2014—finds telcos on what appears to be the right track.

In both mature and emerging markets, telcos are seeing little upswing—but plenty of downswing—in key financial metrics.

- Revenue was down for almost all TeBIT participants. The decline—on average, 3.3 percent—was driven directly by loss in average revenue per user (down 3.2 percent).

- Operators in mature markets did see their earnings before interest, taxes, depreciation, and amortization (EBITDA) nudge up slightly, with an average increase of 0.4 percent. But participants in emerging markets did not fare as well, seeing a significant 13.3 percent decline in EBITDA.

Established telco services are still struggling. But new directions for growth look more promising.

- Less than 10 percent of participants saw their customer base increase in traditional fixed and mobile businesses.

- Almost a sixth of total revenue now comes from offerings outside traditional services.

IT spending is up for the second year in a row, as telco IT units continue their shift from emphasizing cost reduction to innovation.
• The increase in IT spending—an average of 1 percent—was driven by capital expenditures, which, as we saw in our 2013 survey, seemed focused in areas that can help telcos stand out from the pack.

• On average, participants directed 29 percent of their IT capital expenditure (capex) budgets to their top three initiatives—projects heavily skewed toward fulfillment, customer relationship management (CRM), and network-related technologies.

Outsourcing continues to play an important—and increasing—role within telco IT departments, and there are signs that it is being deployed more effectively. Commercial off-the-shelf software (COTS) is also growing in prominence—though not to the same degree in every process area.

• On average, outsourcing now accounts for 26 percent of participants’ total IT spending.

• This year’s analysis—in marked contrast to previous TeBIT studies—did not find a direct linear correlation between a high degree of outsourcing and high IT spending. This suggests that telcos may be gaining a better understanding of how, and where, to best leverage outsourcing.

• COTS is now used for approximately 50 percent of participants’ supplier/partner and enterprise processes (including enterprise resource planning, or ERP) and billing and revenue processes, but to a much lesser extent in areas like fulfillment. In some areas—such as ERP and CRM—two or three vendors dominate.

• Overall, COTS seems to have reached a relatively high level of maturity—and user satisfaction.

While IT complexity does, in general, appear to drive costs, the relationship is far more nuanced when individual levers are considered.

• A clear link between complexity and cost was seen with the use of external professionals and the degree of outsourcing. But the service model—the share of IT services versus IT outsourcing—appeared to have little impact on spending levels.

• COTS usage—generally embraced to lower IT complexity—actually seemed to drive spending levels. While this might seem counterintuitive, customization, maintenance fees, and vendors that dominate the market (and can price accordingly) all add to the price tag.

Once again, significant differences in IT cost levels were seen among participants. This time, however, the TeBIT “normalization” analysis—designed to account for differences in size, business mix, and complexity—did not significantly narrow the gap.

• IT cost levels ranged from 3.9 percent to 8.0 percent of revenues for participating telcos. One explanation for the variation—even
after “normalization”—could be telcos transitioning from cost-cutting mode to investment mode at slightly different times.

- The data also showed that the traditional cost disadvantages of integrated providers continue to lessen—a sign that they are finally making progress consolidating their systems into a single, more cost-effective, platform.

In contrast to our 2013 survey results, participating telcos managed their IT operating expenses in line with their revenue losses—a reassuring finding. But this year’s study also suggests a possible (and potentially significant) shift in the traditional telco spending pattern—one that telcos should build on.

- IT operating expenses decreased by an average of 4.4 percent. That participants were able to achieve these reductions while increasing IT capex seems to mark a break with the usual spending “compromise,” in which greater innovation comes at the price of greater operating costs.

- The idea that telcos can have the best of both worlds—innovating, yet at the same time lowering their IT operating costs—is a powerful notion. But one thing is clear: to do so, they will need to develop a good mix of “growth” investments and “efficiency” investments.
FOR EUROPEAN TELECOM COMPANIES, it has become strikingly clear: their future is going to look a lot different from their past. Traditional fixed and mobile services are not the drivers of growth they once were. Most operators have seen their revenues fall, the competition continue to heat up, and new customers get harder and harder to find. Growth now means looking in other directions, such as digital and IT services. It means innovation, fast deployment of new products, and a no-compromises customer experience. It also means an IT infrastructure that makes all of the above possible.

This is a message telcos get—and are acting upon. TeBIT 2014 finds operators continuing the single most important trend identified in our 2013 survey: increasing their IT spending while focusing investments in areas that can drive differentiation and competitive advantage. This is good news, as the strategy is both savvy and necessary.

But this year’s study—in which a mix of integrated, fixed, and mobile operators, from both emerging and mature markets took part—adds a new twist. Even as telcos invested in differentiation, most also reduced their IT operating expenses in line with revenue loss. This is a reassuring finding, to be sure. But it also marks a break with the long-standing pattern in which IT operating expenditure (opex) rises as investments increase—the consequence of running and maintaining new IT. Is this break a temporary anomaly—a brief waypoint as telcos continue their shift from cost-cutting mode to investment mode? Or is it the start of a sustainable trend, in which operators will get the best of both worlds, simultaneously, by leveraging a mix of cost-cutting and revenue-creating investments?

Another intriguing development concerns outsourcing. Previous TeBIT surveys always found that high degrees of outsourcing—embraced largely to save costs—tended, in fact, to correlate to high IT spending. But now, for the first time, the correlation has weakened. This year’s study also finds that the relationship between complexity and IT spending is not as straightforward as one might think. While commercial off-the-shelf (COTS) software can mean less complexity, its use actually drives costs.

Telcos will have to make some key decisions about their IT. They will have to think strategically and understand the impact and interaction of all the levers at their disposal. This report helps them do that—and not just move forward, but ahead.
Appearances, as the saying goes, can be deceiving. No doubt, the business environment remains an all-too-familiar one for telcos, with revenue and average revenue per user (ARPU) continuing to decline for many operators. (See the sidebar “The Business Environment.”) But at the same time, this year’s study reveals a bigger—and brighter—story. Growth may be lagging in traditional mobile and fixed businesses, but it is growing in new ones, from IT services to video on demand and other over-the-top digital content. These are areas that IT departments will need to support—and the TeBIT data suggests that they are laying the foundation for doing just that.

The Business Environment

In today’s European telecom market, taking the “no news is good news” view is no easy thing. While business conditions have not changed much since 2013, neither have their consequences. Competition, falling prices, and the scarcity of new subscribers for established services continue to challenge telcos—and key financial metrics continue to fall. Overall, revenue was down an average of 3.3 percent for TeBIT participants and neither mature markets (with an average decline of 3.8 percent) nor emerging markets (with a decline of 2.6 percent) offered safe harbor. (See the exhibit “For Telcos, the Business Environment Remains Challenging.”)

The revenue decline was directly driven by loss in ARPU. On average, participants saw their ARPU drop 3.2 percent, breaking down into a 3.8 percent reduction in mature markets and a 2.6 percent reduction in emerging markets. In terms of EBITDA, operators in mature markets did hold an edge, with an average increase of 0.4 percent compared with a 13.3 percent drop for emerging market telcos. The story was similar for profitability, with EBITDA margin slightly positive in mature markets (with a 0.9 percent average gain) but negative in emerging markets (with a 5.6 percent average decline).

Gaps between the market types were also seen in opex changes. Mature market participants managed to reduce their opex by 4.5 percent, which helps to explain their stable EBITDA. Emerging market players, on the other hand, saw their opex increase by 7.2 percent. Capital expenditure changes varied even more significantly—rising by an average of 20.3 percent in
THE BUSINESS ENVIRONMENT (continued)

mature markets but by a less eye-opening 8.8 percent in emerging markets.

One area devoid entirely of eye-opening change was subscriber growth in established telco businesses. On average, the fixed-user base declined 1.2 percent for TeBIT partici-
pants, while the mobile base grew an anemic 0.4 percent. The action (and the potential) lay in the “other” category—a comparatively small area of nontraditional offerings, but one that saw a 9.2 percent increase in users. There, at least, it seems that the “new news” is the good news.

For Telcos, the Business Environment Remains Challenging

IT spending is up for the second year in a row. While the increase (an average of 1 percent for participating telcos) might seem modest, it was driven by larger increases in investment spending: IT capital expenditure (capex) rose 3.4 percent (4.7 percent for participants in mature markets; 1.8 for telcos in emerging markets). Notably, those investments were focused in areas that can help telcos stand out from the pack. On average, participants directed nearly a third of their investment budgets (29 percent) to their top three initiatives. (See Exhibit 1.) These high-priority projects were heavily skewed toward fulfillment, customer relationship management (CRM), and network-related

Sources: Oanda; Telecommunications Industry Association; Wilkofsky Gruen Associates; TeBIT 2014.
Note: The data for the total industry revenues graph is derived from market reports; the data for the TeBIT participants’ revenues, ARPU, and users graphs are derived from TeBIT surveys.
1ARPU is determined by dividing total revenues by the total number of customers. A person is counted multiple times if he or she has ordered several services in different business areas.
technologies—areas that help improve the customer experience or support new products and services. (See the sidebar “Continually Calibrating the IT Strategy: An Interview with Ahmet Zerey.”) And IT investments are expected to increase. (See Exhibit 2.)

This “spend money to make money” approach was something we first saw in our 2013 survey. It was notable because it was in stark contrast to previous years, when the focus of IT departments was on aggressive cost reduction. And it seemed the smart thing to do. With their established businesses stagnating (and worse), telcos needed to bet on the future, which required investments focused on innovation and differentiation. If there was any doubt about that, this year’s TeBIT
“Mobility, digitization, big data, and analytical marketing have become important areas for investment.”

New technologies and new business models—everything from big data to IT services and digital content—are becoming increasingly important for telcos. But for their IT departments, so too are new approaches to how their job gets done. As Ahmet Zerey, CSI manager at Turkcell, tells BCG, the key is a close collaboration with the business units—and frequent tweaks to the game plan.

Turkcell has been broadening its business through its latest acquisitions, moving from a pure mobile play into new services like IT and Internet. How does this impact—and potentially present challenges to—the company’s IT strategy?

As an IT organization, it is crucial to align your own strategies with the company’s business strategy. In Turkcell’s case, our fixed-line operator—Turkcell Superonline—is becoming an increasingly important part of the business and accounting for more and more revenue. In such an environment—in which it is no longer about supporting a single type of business, such as pure mobile—the challenge is to ensure that IT processes are lean, mature, and flexible. One way we have been doing this is through a project to modernize our CRM and network management systems.

Turkcell has made significant investments in IT. What are your key areas of focus?

We have been very focused on boosting the flexibility of our core systems and processes. The evolving nature of Turkcell’s business—and IT’s need to support it—requires this. In 2013, for example, we made a very large investment in our Single Rating Engine project, in order to create and implement more flexible business logic. This is an area in which we anticipate further investment, as well. We have also been focusing on the modernization of our CRM and network management systems, as mentioned earlier. Finally, as one might expect these days, mobility, digitization, big data, and analytical marketing have become important areas for investment.

The TeBIT data suggests that external head count, degree of outsourcing, and (to a lesser degree) the service model all drive IT spending. What has been your experience regarding complexity drivers for your IT operating model?

We believe that the common approach to outsourcing—working with many different firms within a single business or technical area—drives complexity and cost, without necessarily driving performance. So in 2014, our strategy has been to consolidate outsourcing firms—getting down to a smaller, more optimal number of partners for a given area. We are already seeing that this approach brings financial benefits. We are also seeing that relying on fewer but larger outsourcing firms—instead of many smaller ones—also improves the work environment. Processes have been smoother and more successfully executed.

What do you see as the most important technology or investment trends for telcos in the coming years? Which IT trends do you embrace?

Big data is certainly a key trend—and an opportunity. In the past year, it has become a core strategy for us, and we are approaching it, and hoping to leverage it, on several levels. For one thing,
we want to use our network data for analyzing, and improving, the customer experience. The idea is to gain insight that can help us increase our first contact resolution ratio. When call center agents speak with customers, they will be able to draw on a more complete, readily available view of that customer. They will know, immediately, the services and features the customer has, as well as any preferences and past issues. We also expect big data to enable richer analysis of user behavior. The result will not just be faster service, but better service.

How do you align with the business to ensure that IT provides high business value to the organization?

A close, collaborative relationship between IT and the business units is essential. There has to be continual interaction and a process that fosters this. For example, at Turkcell, the IT organization will sit down with the business units at the end of each year and decide on the IT strategies and roadmap to support each unit’s portfolio for the forthcoming year. But we do not end things there. Throughout that next year, there is constant interaction, with IT not simply following the roadmap but realigning it, if necessary, to adjust for any change in business strategy. Because sometimes strategies do change, and you have to stay on top of that and account for it. To ensure that this really happens, we have created roles, responsibilities, and processes across the organization. There is a structure to our interaction, and there is accountability, because when you have that, you have a much better chance of success.

How do you ensure innovation and the adoption of IT trends within your organization?

Turkcell Technology is one of the largest research and development companies in Turkey and customer-driven innovation is the most important strategy—and goal—we have. To achieve it, we strive to create an environment that encourages the generation and development of new ideas. When you have this kind of environment, your engineers not only understand the needs and expectations of your customers, but are empowered to meet—and exceed—them. You want to make sure your organization and your processes are designed to nurture and support innovation. Because innovation is everything. It helps you solve customers’ problems, it lets you enrich their lives, and it brings you a competitive advantage.

How would you summarize the challenges for telcos today?

In the majority of markets, telco revenues are declining, which makes the number-one challenge finding a way to compensate for these losses. We think the solution requires a two-pronged approach: moving to a lean operating model (in order to decrease costs) while investing in areas that can help grow revenues. This is certainly the route we are taking. Neither of those tasks is simple, of course, but telcos need to embrace them—carefully, wisely, and now.

That is a figure telcos can—and must—grow. It will require continued investment in the IT systems that support the new routes to value, but the timing is fortuitous for many telcos. Our analysis of expenditure patterns suggests that 65 to 75 percent of participants will be increasing their IT capex in the coming years. They need to make the most of that opportunity.
OUTSOURCING CONTINUES TO EXPAND its role within telco IT departments: on average, it accounted for 26 percent of total IT spending, up from 23 percent in our 2013 survey. While outsourcing can be a lever for many different things—accessing new skills, reducing speed to market, and decreasing head count were all cited as reasons for its use—cost reduction, once again, topped the list. More than a third of participants (36 percent) said that savings was their prime impetus for outsourcing.

Past TeBIT surveys had thrown some water on the idea that outsourcing means lower costs. In fact, analysis of the data suggested just the opposite. For several years running, we found a direct linear correlation between a high degree of outsourcing and high IT spending (measured as a percentage of revenue). This year, however, the correlation was noticeably weaker. (See Exhibit 3.)

Does that mean the trend is, at long last, reversing? It is too early to be sure, but there

### EXHIBIT 3 | The Correlation Between Outsourcing and IT Spending Is Weaker

2013 IT spending as a percentage of revenue

<table>
<thead>
<tr>
<th>Cost of outsourcing as a percentage of IT spending</th>
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<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td>Ø = 26%</td>
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<tr>
<td>Ø = 5.3%</td>
</tr>
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Source: TeBIT 2014.
Note: Data points have been added or removed in order to ensure the confidentiality of participants.
are signs that telcos are, perhaps, gaining a better understanding of how to leverage outsourcing.

For example, most telcos currently follow a “partial outsourcing” model—keeping some tasks related to a function in-house while delegating others to providers. This mixed approach, it turns out, is not the most cost-effective model. But telcos do seem, at least, to be stressing outsourcing in the right areas. For example, the highest degree of outsourcing was found in application maintenance; on average, participants outsourced 52 percent of this function. (See Exhibit 4.) This is an area in which vendors can both provide skills and capabilities that a telco may not have in sufficient supply and ramp resources up and down as necessary. Meanwhile, the lowest degree of outsourcing (at just 34 percent, on average) was for IT infrastructure. This makes sense, too: Many telcos offer these same services to their own customers and can readily handle the tasks themselves. Moreover, they may be running older infrastructure and software, in which case it may be more cost effective to operate it themselves than to bring in someone who has to learn and master the environment from scratch. (See the sidebar “Building Blocks for the Future: An interview with Helene Graham.”)

It is likely, too, that as telcos rack up experience with outsourcing, they are simply getting a better handle on which processes work best when handed over to a provider, and which work better when kept in-house. (See the sidebar “In the Thick of the Transformation: An interview with Paolo Valvassori.”)

Meanwhile, COTS software is also seeing its traction vary from one IT process to another. For supplier/partner and enterprise

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**EXHIBIT 4 | Application Maintenance Saw the Highest Degree of Outsourcing**

![Graph showing the level of outsourcing for different IT processes and markets.](image)

- **Application Development**
  - Market average: 40
  - Mature markets: 44
  - Emerging markets: 36

- **Support and Training**
  - Market average: 44
  - Mature markets: 43
  - Emerging markets: 46

- **Application Maintenance**
  - Market average: 52
  - Mature markets: 65
  - Emerging markets: 35

- **IT Infrastructure**
  - Market average: 34
  - Mature markets: 29
  - Emerging markets: 40

*Source: TeBIT 2014.*

*Note: We assessed the level of outsourcing as a percentage of the effort or process, not as a percentage of spending.*
“Telcos are seeing a shift from saving to assessing whether investment isn’t actually a better way to go.”

As telco IT units continue their transition from cost reduction to investment, making the right bets, in the right areas, will be essential. For insight on how telcos are focusing their capex budgets and what sort of payoffs they hope to see (or already are seeing), BCG spoke to Helene Graham, chief technology officer at eircom, where the investments are well under way.

From the survey data, we could see that eircom has been making significant investments in IT. What are your key areas of focus?

We have had a large number of projects around our order management and billing systems. We also finalized our online self-service portal and refreshed both our business-intelligence capability and our data warehouse. These investments have very much improved the customer experience. We have also been able to consolidate systems and, for the first time, get a truly 360-degree view of the users and the various services they have from us. So far, these investments have largely been in the consumer and small business space—and, to a lesser extent, in the enterprise and wholesale business.

At eircom, we saw a low degree of outsourcing in IT infrastructure, yet above average outsourcing in other areas. What is the rationale for this?

Traditionally, our infrastructure has included a lot of older mainframes and nonvirtualized applications, and the business case for outsourcing that is rarely positive. It is more cost effective to manage it ourselves than to ask somebody to take it on in its raw state, so to speak. But we are currently in the midst of a virtualization process, and when that is completed, we will review again. In other areas, there is more outsourcing in order to tap into the specific expertise of a third party. For example, we will do the low-level design and then could outsource the development.

Commercial off-the-shelf software is something eircom uses quite intensively in some parts of the value chain. What has been the company’s experience with COTS?

I think every telco is looking for COTS to be the Holy Grail, but our experience has been somewhat mixed. Like most telcos, we try to live by the 80/20 rule: 80 percent out of the box; 20 percent customization. But that’s a ratio that often proves very hard to achieve, especially on customer-facing systems. We have a lot of processes and services that have been in place a very long time and it is hard to change those. So I think the jury is still out on COTS. The big question is how to identify the parts of the value chain where COTS has the best chance of succeeding.

Overall, the TeBIT data showed that IT opex was managed in line with ARPU and revenue declines, while IT capex increased. Have you experienced a shift in focus from savings to investment?

Over the past two to three years, we have been investing a lot more than we have in a long time. We have done so because we have launched new offerings—including a new fiber broadband product, LTE, a new TV product, and various bundles—and you have to invest in IT to support
that. I think, in general, telcos are seeing a shift from saving for the sake of saving, to very carefully assessing whether investment isn’t actually a better way to go. But for many telcos, it is not an easy shift to make. Traditionally, there has been a bigger appetite for putting capex into networks than into IT. So it can still be a challenge for the CIO to make the case that investing money in IT should not be seen as a cost but rather as an investment in the building blocks for the future.

We observed that IT capex spending was slightly less focused than we saw last year. Do you see a shift to broader investments?

On balance, I think eircom is still reasonably focused, especially in areas like improving the user experience and understanding our customers better. Of course, there are things that have a more general scope, and we try to invest there, too. But to a certain extent you can accept that the enterprise resource planning system might not be the way you ideally want it, or there might be some back office work that still needs to be done, because you cannot get to everything and you end up balancing investment with opportunity for revenue.

What do you see as the most important technology and investment trends for telcos in the coming years?

I think that the convergence of fixed and mobile networks, and making coverage ubiquitous, will be huge—and challenging—for telcos. What people buy from us are services. They want to do something—watch video, talk to a friend—without worrying about what technology is used. They are going to care more about whether the service is of high quality and easily consumed, and less about whether it is delivered via Wi-Fi or 3G or 4G. The digital side of IT will also be important, but I am no longer sure if, by themselves, social networks or chats will lead to quicker or cheaper resolution of a customer’s problem. I certainly have not yet seen any hard facts that they drive down the cost of serving customers. I think that is going to be the next big question for us, especially as telcos move calls from call centers to chats and social media.

Is digital a new driver for convergence—or is it the other way around?

There is a whole generation today that will probably only ever communicate in digital—reading newspapers online, making calls via Voice over IP, and so on. One could argue that on the mobile side, technologies like LTE and IMS are making this possible; they let us deliver our products in a way that is more in tune with how people like to consume services and content. But which is driving which, I do not know. For an operator like eircom, what is crucial is to develop the right partnerships—opening up our network so that it becomes easier for other companies to offer services that are interesting in a digital format. The things that are close to what we do well we can develop ourselves, but for the broader digital pieces, partnerships will be key.

How do you align with the business to ensure that IT provides high business value?

We have a quite rigorous process whereby the business side tells us their requirements and we essentially test them to see how much it will cost and make assessments on what should be done and not done. It is a very formalized engagement model. Each of our business areas has an engagement partner who serves as a bridge between the business and technology sides. You need a strong partnership to do this stuff right.
How do you ensure innovation and the adoption of promising IT trends?

We spend a lot of time observing what competitors do and interacting with other telcos—such as in industry forums. We learn from them and constantly rethink how we are doing things. This is particularly important for a smaller telco like eircom, which only operates in Ireland, as we do not have the resources for research in all areas.

How would you summarize the challenges for telcos today?

I think the biggest challenge is to get past the mind-set that a product has to be perfect for everyone and every use. A lot of the newer companies we are competing with do not design products that way. For instance, if you move far enough away from a Wi-Fi hotspot, you will drop the connection. Someone with a traditional telco background will say that is unacceptable. But there is a whole generation of users today that does accept it when they use different apps. Thinking about what actually matters to the customer has become much more difficult for telcos. At companies like Google, where the workforce tends to be younger and more digitally savvy, there is often a much stronger link with what people want. Telcos need to narrow the gap. We are getting there, but it is still a challenge for us.

(including enterprise resource planning, or ERP) as well as billing and revenue management, COTS usage accounts, on average, for approximately 50 percent of the work. For fulfillment, on the other hand, the figure is closer to 20 percent. The data also confirmed that in some areas—like ERP, CRM, and product management—two or three COTS vendors dominate. For instance, more than 60 percent of participants use SAP or Oracle for ERP. Other areas, such as billing and revenue management, assurance, and operations support and readiness, were far more fragmented. (See Exhibit 5.)
“In four years, we have completely changed our operating model in IT.”

Like many telecom operators, Milan-based Fastweb has significantly changed its operating model (and infrastructure) in recent years—outsourcing more processes, consolidating providers, and investing in technologies and improvements that can better serve, and attract, customers. Paolo Valvassori, Fastweb’s manager of financial planning and analysis, talked to BCG about the company’s transformation—and lessons learned along the way.

Fastweb mainly offers fixed-line services, but also serves some mobile clients. From the IT perspective, what challenges does this present?

We started our mobile business about six years ago. From the start, the goal was to have an integrated approach to IT, trying not to differentiate between fixed and mobile. For example, at the beginning we needed to develop a new order management system for the mobile business, but we chose a system that we could move the entire fixed-customer base to, as well. One thing I should add: even if our revenues from mobile are low compared with our fixed business—and we sell mobile only to our fixed customers—the introduction of mobile was quite disruptive with respect to IT. That’s because no matter what your mobile customer numbers are, you now have to face all of the problems of an integrated operator.

Looking at the survey data, we saw significant customer growth for Fastweb. What impact has that had on the IT organization?

All things considered, the growth of customers does not actually impact the IT organization very much. We have increased some of the IT infrastructure (such as servers and storage, as well as application support) because there are more customers to manage. But this is a minor challenge compared to what really brings complexity: technological evolution in both the telco business and IT. What drove expenses for the IT department in the past year was not the increase in customers, but decisions to launch a next-generation access network and to begin our IT transformation.

Traditionally, the TeBIT data has suggested that high degrees of outsourcing correlate with high IT spending—though the link was weaker this year. Fastweb follows a strong outsourcing model in selected areas. What has your experience been?

Our experience has been quite good, though it can be very tough work. One thing we learned is that outsourcing works best when the processes are already well defined and understood inside the company. When we outsourced processes that had not yet been well defined, we had to manage unexpected costs and issues on service quality. The key, then, is to know a process and optimize it before you outsource it. If you try to do the outsourcing and the optimizing together, it is much more difficult.

Fastweb is owned by Swisscom. To what extent does this influence IT activities?

Swisscom’s decision was to leave Fastweb very independent. The two companies serve two very different markets, and while Swisscom is an incumbent, Fastweb is an alternative operator. So
there are a lot of differences in the way we need to work. That gives us a lot of autonomy. Still, there is very strong collaboration. Swisscom is much larger than we are, and we can draw on, and share, technological knowledge. For example, we have gained a lot from Swisscom’s experience in data centers as we build our own.

Our 2014 survey finds that, on average, IT opex was managed in line with ARPU and revenue loss, and IT capex increased. Have you experienced a shift from savings to investment?

Four years ago, we launched a cost-reduction project, and today we can see the good effect it had on opex and efficiency. Last year, we began an IT transformation project—a main goal being further efficiency, but we also needed to reshape the IT infrastructure and application environment to be more future-proof and better support the business units. So we are spending much more capex now on a set of projects. We anticipate continued spending on this transformation over the next few years.

Our analysis of the TeBIT data concludes that new investments in IT will likely continue and seem to be necessary for future differentiation and growth. What is your point of view on this issue?

We will probably see capex going up in next year’s TeBIT benchmark—and going up for a couple of years more. In our case, we have a transformation project that started with the core IT applications and business intelligence; it has moved on to CRM and will involve portals and so on. The goal is to put the customer more and more at the center of the company, and this, of course, has a deep impact on IT structure, organization, and cost.

The TeBIT data suggests that external head count, degree of outsourcing, and (to a lesser extent) the service model drive IT spending. What has been your experience regarding complexity drivers for your IT operating model?

In four years, we have completely changed our operating model in IT. Where we used to have a very fragmented set of suppliers, now we look to establish long-term contracts with a smaller set of providers. Where we used to directly manage all parts of the processes, today we manage contracts and projects. We have always had a lot of external resources, but now we have an end-to-end process that makes them easier to manage. We have been quite satisfied with the choice we made.

What do you see as the most important technology and investment trends for telcos in the coming years? Which IT trends do you adopt?

Compared with other alternative operators, Fastweb is unusual in that it has its own fiber infrastructure and a significant share of enterprise customers. We are embracing trends that let us build on this—for example, by investing in a next-generation access network. Between last year and next year, we will have invested about €400 million in ultra-broadband access development. We are also transforming Fastweb into a customer-centric company. In every mature market, the number of broadband users has been flat. It is now a substitution market. You have to keep your users and keep ARPU as high as possible, and there are two ways to do that: give users the best technical solution (such as next-generation access) and provide the best customer experience via improved CRM and new services. To that end, we are investing in the cloud and in advanced services such as security, enterprise support, and so on.
Overall, COTS seems to have reached a relatively high level of maturity. When participating telcos were asked about their satisfaction with COTS in each process area, only 10 to 15 percent of responses indicated room for improvement. But the analysis of COTS did reveal a potential bump in the road: its use drives costs. That might seem counterintuitive; after all, COTS should be less complex than something built from scratch. Yet the data—and the link it revealed—was quite clear: a high degree of COTS use correlated to higher IT spending.

What is going on? Several things. For one, these packages often require customization to meet an operator’s specific needs, and those costs, telcos are finding, can be hard to keep down. Moreover, there are annual maintenance fees to pay—fees that do not exist for proprietary software developed in-house. Finally, the market environment for certain processes—namely, those with just a couple of dominant players—means that providers can ask for, and get, high prices for (effectively) “market standard” software. As with outsourcing, telcos need to consider their goals for COTS carefully and ensure that it is being used where—and how—it has the best chance of meeting them.
THIS YEAR’S TeBIT STUDY takes a closer look at how complexity affects IT spending. Understanding the link between the two is vital as telcos fine-tune their IT operating models, pulling (or not pulling) the different levers at their disposal. But as the COTS example demonstrates, the relationship is not always obvious or straightforward.

Overall, complexity, as one would expect, does appear to drive costs. Taking into account various factors that push complexity in one direction or the other—such as the number of freelancers a telco has to manage and the degree to which it leverages outsourcing—each participant in the TeBIT benchmark was assigned a “complexity index” from 0 to 100. Higher index scores did indeed correlate to higher IT spending, measured as a percentage of revenues. (See Exhibit 6.) But when we drilled down to individual drivers—looking at each complexity factor in isolation from the others—things became more nuanced. Not every driver moved the dial equally.

The TeBIT data showed a clear link, for example, when it came to external head count. The more a telco’s IT staff was comprised of outside professionals, the higher its IT spending tended to be. The role of externals, it should be noted, varied greatly from telco to telco. Only about half of the participants used externals at all, and usage was greater in mature markets than emerging ones. The reasons for embracing them would appear to vary, too: our analysis of internal versus external costs suggests that for roughly half of the telcos using them, externals helped fill in missing capacity. For another 19 percent, the motivation seemed to be filling in skill and knowledge gaps. Given that these are common needs for telcos across regions and market types, we expect the use of externals to grow. As telcos increase their reliance on them, they should understand that for all the benefits that may bring, savings is not likely to be one of them.

Complexity appears to drive costs, but not every driver moves the dial equally.

A correlation between complexity and spending was also seen in the degree of outsourcing. Telcos that have clearly embraced—or clearly avoided—outsourcing tended to have lower IT spending than those that have taken a more mixed approach, which is more complicated to manage. Indeed, we found that spending seemed to peak with an outsourcing degree of around 50 percent. That is a figure that may give telcos pause, given the prevalence of the “partial” outsourcing...
model. From a purely financial perspective, going 100 percent with outsourcing, or going 0 percent, would seem to be ideal. But outsourcing brings other benefits—such as needed skills and resources—and, crucially, it does not bring them equally in every function area. Previously, we saw that even with their “mixed” approach, telcos are stressing outsourcing in some areas more than others. One idea might be to ratchet up its use further in those areas. In that way, the overall degree of outsourcing will rise, and telcos should reap the cost advantages that brings.

One might reasonably expect that for the service model, too, complexity would drive spending. Telcos, after all, have two different levers they can pull—IT services and IT outsourcing—and an approach favoring one over the other would be easier to manage than a mix. But in this case, we saw a much weaker correlation between complexity and costs: the share of IT services versus IT outsourcing appeared to have little impact on spending levels.

Then, of course, there was COTS, which typically means less complexity than built-from-scratch solutions. As we discovered, however, a higher degree of COTS usage seemed to actually drive IT spending.

The nuanced relationship between complexity and spending is something IT departments need to carefully consider as they tweak—or even overhaul completely—their operating models. But they should also consider the potential business benefits of any approach. COTS, for example, might not reduce costs, but it can bring advantages that nonetheless tip the scales for its use. These will not be easy calculations for telcos, but by better understanding the variables, they can do a better job solving the equation.
While increased investment, largely focused in areas that can spur differentiation, may be the big story coming out of telco IT departments, another finding also warrants attention: For the majority of participants, IT opex decreased. (See Exhibit 7.) On average, it declined by 4.4 percent, meaning that, in contrast to the findings of our 2013 survey, telcos managed their IT operating expenses in line with—and sometimes even ahead of—

**Exhibit 7 | IT Opex Decreased but IT Capex Grew; Overall, IT Spending Increased**

- **IT opex (change between 2012 and 2013)**
  - Market average: -4.4%,-5.1%
  - Mature markets: -3.9%,-4%
  - Emerging markets: 0%,-1%

- **IT capex (change between 2012 and 2013)**
  - Market average: 1.8%,3.4%
  - Mature markets: 0%,1.0%
  - Emerging markets: 4.7%,2.2%

- **IT spending (change between 2012 and 2013)**
  - Market average: 1.0%,2.2%
  - Mature markets: 5.3%,5.9%
  - Emerging markets: 4.6%,10%

Source: TeBiT 2014.
revenue loss. That is no small thing, but the significance of the drop may be greater still.

Historically, telcos have tended to follow a specific cost cycle for IT. It starts with pressure to reduce costs, which leads to lower IT capex and greater efforts at efficiency. After a few years, telcos will find themselves on a better financial footing—both IT capex and IT opex have decreased. But at the same time, their ability to innovate has been hampered by the lack of investment. So IT capex is increased, and as more complex technologies and products are introduced—and need to be supported by IT—IT opex increases as well. At some point, pressure to reduce costs mounts once again and the process repeats. This cycle is a sort of compromise telcos strike. Every three to five years, they switch between cost-cutting mode and investment mode, absorbing whichever trade-off—greater investment and higher IT opex or less investment and lower IT opex—better suits their needs at the moment.

This year’s drop in IT opex seems to “break” the compromise, as it is coming well after the time investments started growing. The big question is what does this mean? Is it simply a delay in IT opex increase as telcos transition from cost-cutting mode to investment mode? Or does it signal a sustainable change to the cost cycle, with telcos mixing revenue-creating investments and cost-cutting investments instead of alternating between the two? For this dual-track approach to work, telcos would need to have a good mix of both investment types. One sign, perhaps, that they are heading in this direction: a slightly weaker investment focus. In our 2013 survey, telcos steered 41 percent of their IT capex to their top five initiatives. This year, survey results showed they steered less than 37 percent to them. That change makes sense if telcos have been tweaking the balance between their “efficiency” investments—which tend to be spread out among various projects—and their “growth” investments.

As in previous years, we also saw significant gaps in IT cost levels among participating telcos, ranging from 3.9 percent to 8.0 percent of revenues. The difference this time was that TeBIT’s “normalization” analysis—intended to enable a more “apples-to-apples” cost comparison by accounting for differences in company size, business mix (fixed-only, mobile-only, or integrated), and IT complexity—did not narrow the gap to the extent seen in the past. In fact, after normalization, IT cost levels were only slightly more aligned. (See Exhibit 8.) One explanation for this could be telcos transitioning from cost-cutting mode to

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**EXHIBIT 8 | After Normalization, IT Cost Levels Were Only Slightly More Aligned**

<table>
<thead>
<tr>
<th>Actual IT spending</th>
<th>Size correction</th>
<th>Business mix correction</th>
<th>Complexity correction</th>
<th>Normalized IT spending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telco A</td>
<td>3.9</td>
<td></td>
<td></td>
<td>4.1</td>
</tr>
<tr>
<td>Telco B</td>
<td>4.5</td>
<td></td>
<td>1</td>
<td>5.7</td>
</tr>
<tr>
<td>Mean</td>
<td>5.3</td>
<td></td>
<td></td>
<td>5.1</td>
</tr>
<tr>
<td>Telco Y</td>
<td>6.0</td>
<td></td>
<td>–0.1</td>
<td>6.2</td>
</tr>
<tr>
<td>Telco Z</td>
<td>8.0</td>
<td></td>
<td>–0.4</td>
<td>7.9</td>
</tr>
</tbody>
</table>

**Sources:** TeBIT 2014; BCG analysis.

1 The correction adjusts for the fact that smaller players do not benefit from economies of scale.
2 The correction adjusts for the fact that mobile-only players tend to have lower IT costs.
3 The correction adjusts for the fact that high complexity in IT operating models drives IT costs.
investment mode at slightly different times—some switching a bit earlier or a bit later than others. In that case, cost levels would temporarily be out of sync, but would become much more consistent once all telcos have moved into their investment phase.

This year’s data also showed the traditional cost disadvantages of integrated providers continuing to lessen. Once saddled with the burden (and cost) of managing separate IT infrastructures for mobile and fixed, integrated telcos finally seem to be making progress consolidating their systems into a single platform. (See Exhibit 9.)

At the same time, fixed operators are seeing their spending increase, a factor that is also working to flatten the curve among the business mixes. A likely explanation here is fixed providers replacing legacy infrastructure—a transformation necessary to support more sophisticated offerings such as digital content delivery, as well as more customer-centric capabilities such as self-service portals.

All of these findings support one overriding message for telcos: Even as they invest in state-of-the-art systems that can help set them apart, they should not overlook the less glamorous outlays that boost efficiency and reduce operating expenses. With the right balance of investments, telcos can have their cake and eat it too—differentiating themselves, but keeping the day-to-day costs of that differentiation in check.

**Exhibit 9 | The Cost Disadvantages of Integrated Telcos Are Lessening**

![Chart showing IT spending as a percentage of revenue and mobile revenue as a percentage of total revenue over the years 2011, 2012, and 2013.](chart)

**Sources:** TeBIT 2014; TeBIT 2013; TeBIT 2012.

**Note:** The 2011 financial data is from TeBIT 2012; the 2012 financial data is from TeBIT 2013; and the 2013 financial data is from TeBIT 2014. Individual data points have been removed in order to ensure the confidentiality of participants.
For telco IT departments, the shift from cost-cutting mode to investment mode is not just sound, it is vital. With traditional mobile and fixed businesses struggling, growth must come from new services and experiences; from innovation and differentiation. This requires new skills, new products, and even all-new technologies. None of it will come cheap. The continuing increase in IT capex shows that telcos understand that they have to spend money to make money.

Of course, it is not quite as simple as that. Telcos will have to make key decisions about the pace and the focus of those investments. Should they lead the pack—or purposefully lag some distance behind? Some operators are already further along than others. Those that get out of the gate early and strongly will be in the best position to reap the benefits of differentiation—specifically when new customers are drawn to new offerings. But those that stay the course longer with cost reduction will reap greater savings. Telcos have to ask themselves: do we compete on innovation or on cost?

They will need to make decisions, too, about how to optimize their IT operating models. The fruits of their investments will impact running costs: more sophisticated products and technologies may cost more to manage, or require additional systems.

The crucial point is that these are strategic decisions. They need to be made not in a piecemeal way by individual IT units, but top down, guided by an overall vision and how to get there. This year’s study, for example, suggests that telcos will see a bigger payoff from outsourcing when they carefully consider where—and to what extent—it is deployed. That requires seeing the big picture, instead of making isolated decisions for each IT process.

To be sure, some key questions do not have ready answers—at least, not yet. It is too early to know if the concurrent increase in IT capex and drop in IT opex signals a sustainable change in the cost cycle. Time will also tell how long this new investment mode will last and when a cost-cutting mode will take precedence once again. Whether telcos opt for a four-year investment or a quick fix, there is no getting around one fact: they will face risk. But as this year’s study clearly highlights, the bigger risk is not taking it.
FOR FURTHER READING

This publication is part of a series of TeBIT Executive Reports—telco IT benchmarking studies jointly developed and conducted annually by ETIS and The Boston Consulting Group.

Telcos’s New Business Cycle: Time to Invest Again
The TeBIT 2013 Executive Report, October 2013

Telco IT Units Did Their Homework
The TeBIT 2011 Executive Report, October 2011

Telco’s New IT Weapon: Business Value Creation
The TeBIT 2012 Executive Report, October 2012

NOTE TO THE READER

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