

THE 2014 TMT VALUE CREATORS REPORT

PRODUCTIVITY AND GROWTH

WINNING THE TECHNOLOGY DISRUPTION BATTLE



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INTRODUCTION

DISRUPTION surrounds us. There are more mobile devices than people in the world. By 2020, more than 50 billion connected Internet of Things devices will likely be in service. Smart cities, smart homes, autonomous vehicles, and cognitive computing are quickly becoming realities. New business models built around smart devices, high-speed networks, cloud computing, and data analytics are rapidly emerging. Traditional sources of advantage are rupturing, while new sources of value are forming.

The technology, media, and telecommunications (TMT) sector is at the vanguard, designing and deploying new technologies and developing business models across all industries. Unlike start-ups that can singularly focus on new, disruptive opportunities, however, incumbent TMT companies must walk a tightrope. Winners must improve productivity in their legacy businesses *and* build growth businesses that take advantage of disruptions.

Media companies must actively manage the productivity and cash flows in their traditional businesses while they reinvent themselves on digital and mobile platforms. Telecom carriers must simplify their products and operating systems and eliminate legacy networks as they adopt new technologies and seek fresh growth opportunities. Software companies must phase out legacy licensing arrangements and become truly agile while they create cloud, mobile, and anything-as-a-service (XaaS) business models. And so on.

This report analyzes the past and previews the future through a value creation lens. We describe how performance among TMT companies differed widely over the past five years. Companies were not simply swept up in the tidal movements of the macrotrends. The difference in value created by winners and laggards shows that leadership and strategy matter more than ever.

LESSONS FROM THE PAST FIVE YEARS

VALUE CREATION IS NECESSARILY backward looking—and we look way back. Rather than reviewing quarterly or even annual performance, we cover a five-year period (2009 through 2013) in order to understand what separates the winners over the medium term.

The past is not always prologue, but it can help show the path into the future. Over the five years analyzed, four (or six, if you reclassify Priceline.com and Amazon.com) of the top-ten large-cap value creators across all in-

dustries are TMT companies.¹ (See Exhibit 1.) Numbers three and four, Baidu and Tencent Holdings, tap into China’s phenomenal online growth—as does Alibaba Group, whose recent IPO shows that this megatrend is not abating. Number five, Tata Consultancy Services, caters to the productivity needs of all companies, and number nine, Apple, is arguably the most successful company of the post-PC era. In the eight previous five-year periods, Apple ranked first three times among large-cap companies, third four times, and sixth once.

EXHIBIT 1 | TMT Companies Dominate the Large-Cap Top Ten

	Company	Location	Industry	TSR ¹ (%)	Market value ² (\$billions)
1	Priceline.com	United States	Travel and tourism	73.6	59.8
2	Las Vegas Sands	United States	Travel and tourism	71.4	64.5
3	Baidu	China	Media	68.6	62.2
4	Tencent Holdings	China	Media	58.7	117.6
5	Tata Consultancy Services	India	Technology	58.4	68.8
6	Starbucks	United States	Retail	54.4	59.1
7	Amazon.com	United States	Retail	50.7	182.5
8	Ford Motor	United States	Automotive OEMs	47.8	60.8
9	Apple	United States	Technology	46.7	500.7
10	Volkswagen (preferred)	Germany	Automotive OEMs	43.7	130.8

Sources: S&P Capital IQ; Thomson Reuters Datastream; Bloomberg; annual reports; BCG analysis.

Note: OEM = original equipment manufacturer. The sample of large-cap companies consists of 164 companies whose market capitalization was at least \$50 billion on November 13, 2013.

¹Average annual total shareholder return, 2009–2013.

²As of December 31, 2013.

Of the 26 industries analyzed, the media and technology industries were among the strongest in creating total shareholder return (TSR), while the telecommunications industry was a relatively poor performer. (See Exhibit 2.)

A few companies, in particular, stand out from the crowd. Of the \$4.9 trillion in value created by the almost 200 TMT companies in our sample, from 2009 through 2013, about \$900 billion, or nearly one-fifth, was generated by just five companies: Apple and Google, two massively successful stack and ecosystem players; and Baidu, Naspers, and Tencent, companies that surfed the China wave.

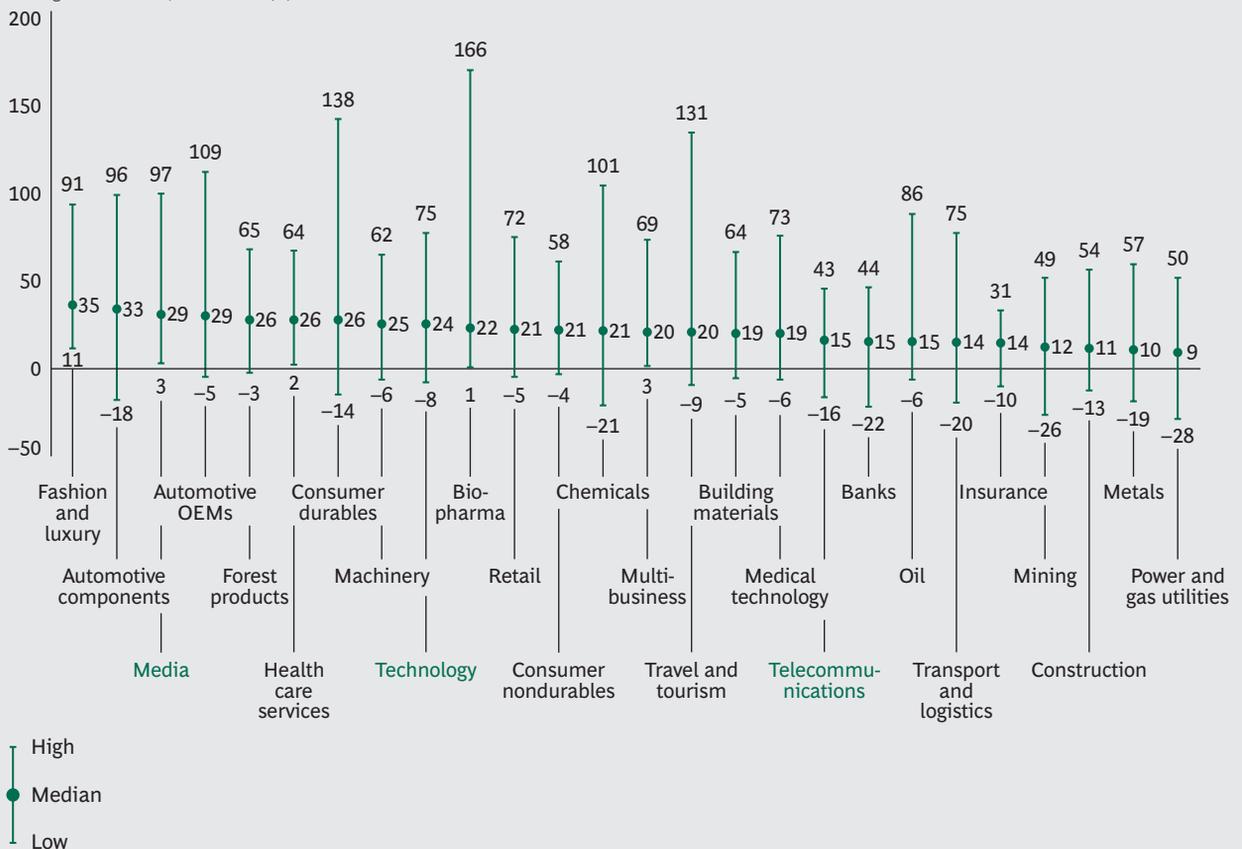
The data, however, also shows that variation within each industry is larger than variation across industry medians. In other words, companies that play their hands right can deliver strong TSR in any industry.

Nine technology and telecom companies, meanwhile, generated negative TSR in one of the biggest bull markets in history, while many other companies in the same businesses thrived. Some other highlights include the following:

- The media industry ranked third across all industries, with median annual TSR of 29 percent. It was led by broadcasters, including Sirius XM Holdings and ProSiebenSat.1 Media, as well as Chinese Internet companies. Six companies—including TV network CBS—delivered annual returns exceeding 50 percent, and the same number generated single-digit annual returns. Most of the top-ten media value creators from mature markets have aggressively managed their portfolio by both divesting peripheral assets and acquiring scale in core businesses.

EXHIBIT 2 | Media and Technology Outperform Telecommunications

Average annual TSR, 2009–2013 (%)



Sources: Standard and Poor's Capital IQ; company disclosures; BCG analysis.

Note: Cable operators have been moved from the media to the telecommunications industry for this report.

- The technology industry—which ranked ninth, with a median TSR of 24 percent—is powered by a diverse group of small-cap companies, each of which has a relatively narrow focus. The number six technology company, Tata Consultancy Services, is the only large-cap company in the top ten. Two large-cap technology companies generated negative TSR.
- The telecom industry ranked eighteenth, with a 15 percent median annual TSR—better than its twenty-fifth-place performance in the five-year period ended in 2012.² Many telecom stocks have become yield driven, with dividends behind their performance. Even so, seven operators generated negative TSR.

The double-digit returns of all three industries need to be viewed in light of the starting line. In 2009—the start of the five years under analysis—global equity markets had just bounced off the biggest decline in stock prices since the Great Depression. (See *The 2014 Value Creators Report: Turnaround—Transforming Value Creation*, BCG report, July 2014.) Over the next five years, TMT companies will not have the luxury of generating TSR from a low base. They need to find ways to create returns without the uplift from those expanding price-earnings multiples that occurred for many companies over the past five years.

Most companies cannot realistically aspire to become Apple or Tencent. But they all should strive to reach the top quarter of their industry in generating TSR. As Exhibit 3 shows, top-quartile companies managed to create three to seven times the TSR of bottom-quartile companies.

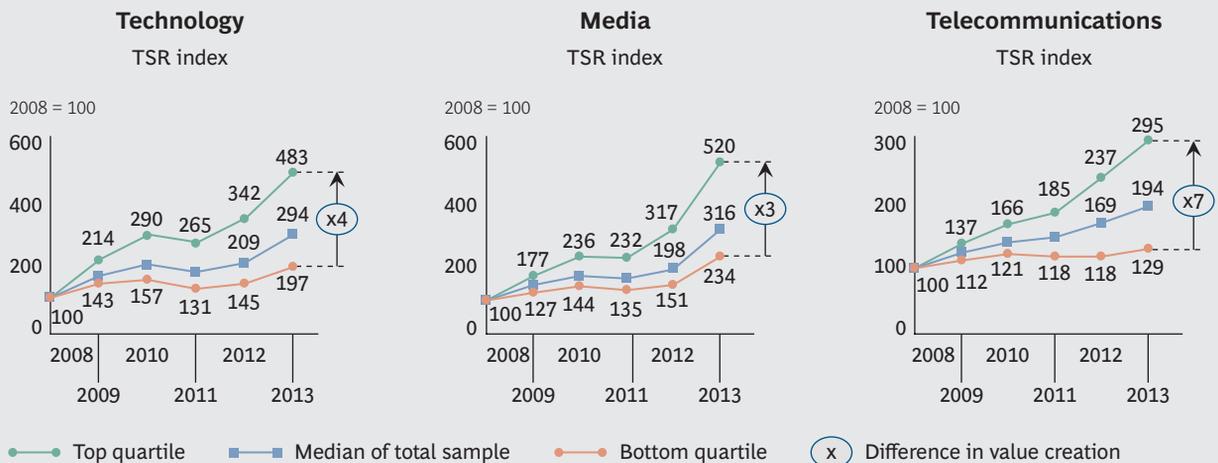
A \$1 investment in a top-quartile technology company over this report’s five-year horizon would have produced a final value of at least \$4.83, compared with \$1.97 for the strongest company in the lowest quartile. For media companies, the comparable range is from \$5.20 to \$2.34. For telecommunications companies, it’s \$2.95 to \$1.29.

In other words, TMT companies can control their own destiny by actively managing their businesses for value creation amid technology disruption.

NOTES

1. Large-cap companies’ market value exceeds \$50 billion.
2. Cable operators, which had media companies in prior reports, are listed as telecom stocks this year.

EXHIBIT 3 | The Difference in Performance Between Top- and Bottom-Quartile Companies Is Dramatic



Sources: Standard & Poor’s Capital IQ; Thomson Reuters Datastream and Worldscope; Bloomberg; annual reports; BCG analysis.
Note: The index was set to 100 on January 2, 2009. Values for top- and bottom-quartile performance represent the corresponding upper and lower thresholds.

NEW ECONOMIC SHIFTS AND FAULT LINES

TECHNOLOGY DISRUPTION IS AN irrepres-
sible force in the economy. A vast and
growing digital ecosystem (smart devices,
pervasive connectivity with high-speed
bandwidth, and cloud and data infrastruc-
ture) is the primary force behind disruption.
This ecosystem is driving two fundamental
shifts in economic and business activity.

Faster Clock Speeds. The iTunes Store
opened in April 2003. The online outlet, then
called the iTunes Music Store, was the
missing piece that allowed Apple to create an
ecosystem of devices, applications, data,
products, and services working together in
fundamentally new ways. It took the iTunes
Store nearly three years to sell 1 billion songs.
By early 2013, when Apple stopped releasing
specific song-download information, the store
was handling that volume in a month.

In the middle of the first decade of the
twenty-first century, Facebook reached 50
million users in 42 months. A few years later,
it took WhatsApp only 12 months, and the
Space edition of the Angry Birds game was
installed on 50 million devices in one month.
(See Exhibit 4.)

Innovation, especially in business models, is
also accelerating, as Netflix has demonstrat-
ed in the media industry. Imagine the disrup-
tion to retailing if, in the next few years, Am-
azon.com were able to supply one-half of

everything its consumers needed and deliver
orders within four hours of consumers hav-
ing made their purchases.

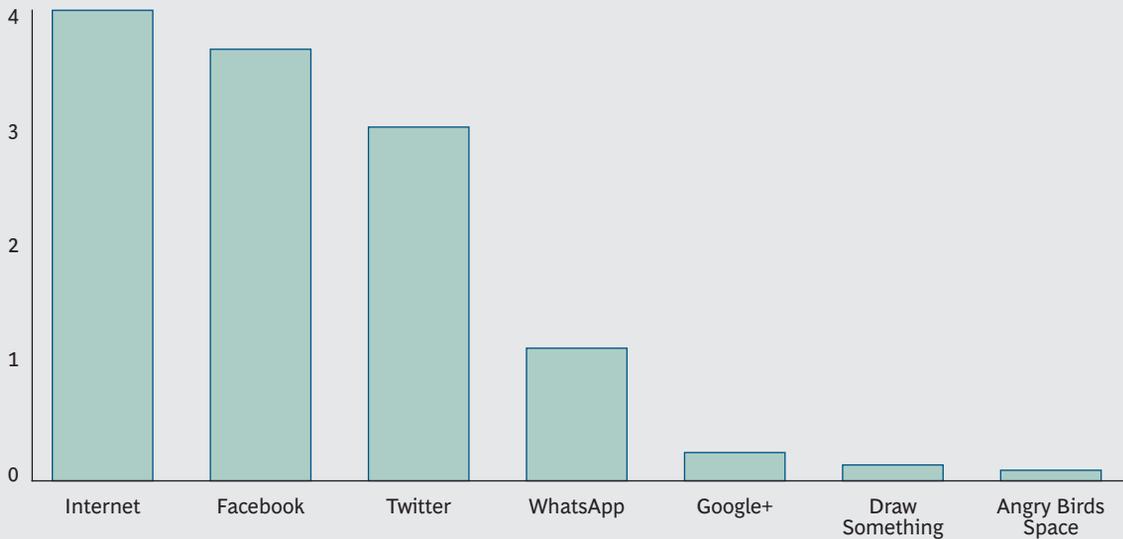
A vast and growing digital
ecosystem is the primary
force behind technology
disruption.

The payments system is another area awash in
innovation. Square, a onetime tech darling, dis-
rupted the field a few years ago with a simple
card reader for mobile devices. But Square it-
self is now facing competition from large eco-
system players such as Apple and Google.

Enablement of Other Technologies. The
digital ecosystem also serves as a platform to
accelerate adoption and enhance the func-
tionality of other technologies. Genomic
medicine, self-driving cars, cognitive comput-
ing, and 3-D printing, for example, would be
far less disruptive as stand-alone technologies.
But the impact becomes exponential when
these technologies combine with the reach
and data analytics power of this digital ecosys-
tem. Take 3-D printing. The digital ecosystem
allows a new spare part for an airplane to be
printed remotely where it is needed. The
ecosystem accelerates innovation by allowing

EXHIBIT 4 | Acceleration: A Defining Characteristic of Disruption

Time it has taken to reach
50 million users (years)



Launch year 1989 2004 2006 2009 2011 2012 2012

Sources: United Nations; comScore; Paul Allen; Zynga; Rovi; news reports; BCG analysis.

Note: Data represents users for the Internet; active accounts for Facebook, Twitter, and Google+; estimated active users for WhatsApp; and installations for Draw Something and Angry Birds Space.

users to access open-source design files and facilitates ease of use through interoperable software rather than proprietary CAD systems.

The latest disruptions involve hyperscaling—scale achieved beyond the boundaries of traditional companies.

Technology is also reshaping entire industries—especially the TMT sector—along fundamentally new fault lines. The structure of many industries is fracturing into interoperable layers of similar activities that collectively form a stack. The defining characteristic of the latest phase of disruption is “hyperscaling,” or scale achieved beyond the boundaries of traditional companies and organizations. Big becomes selectively beautiful.

At the bottom of the stack, commodity and infrastructure providers have always benefited from scale. Virtually all layers of network infrastructure require scale to be efficient. The business of Crown Castle International,

the number six telecommunications value creator, for example, is built around scale. The company acquires cellular towers and rents space on them to operators.

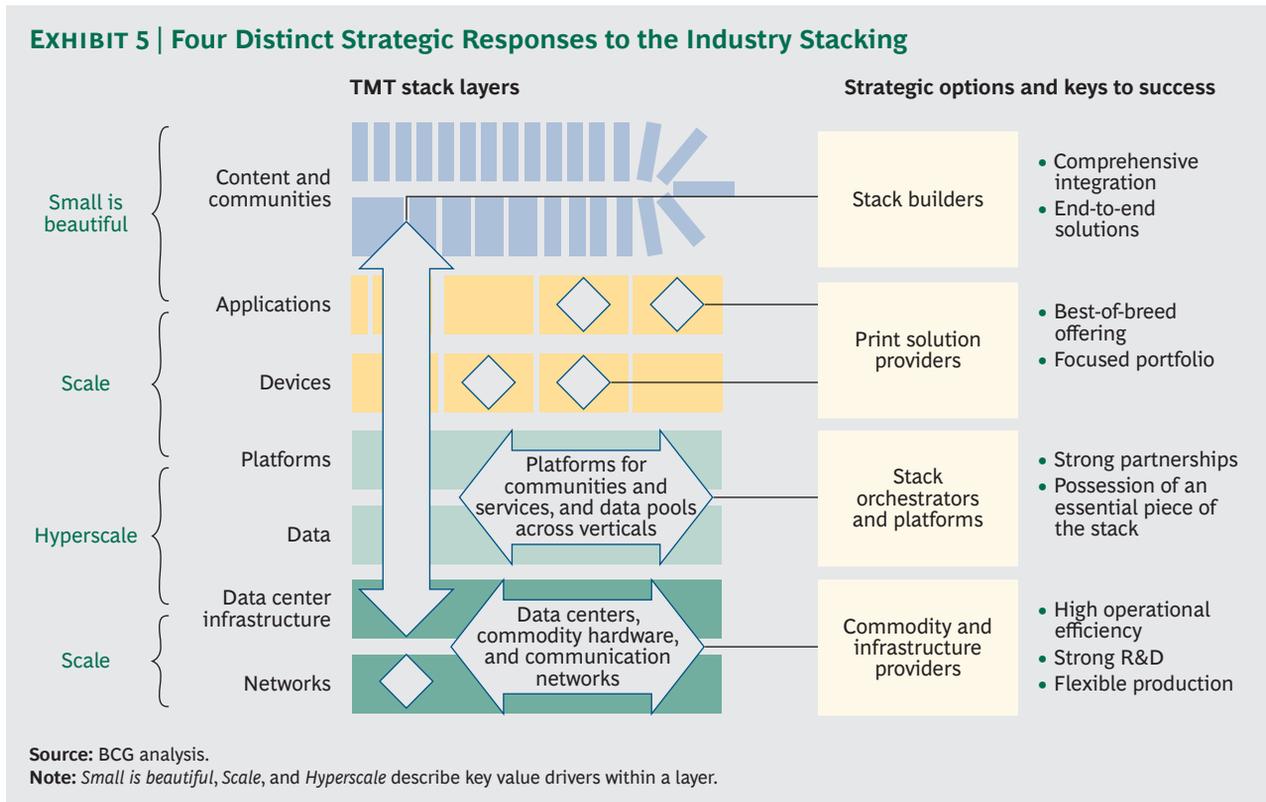
Now data centers—and even the data itself—are hyperscaling beyond company boundaries. Amazon Web Services reportedly has five times the capacity of its next 14 competitors. Many companies are starting to combine their data with other companies in order to create more value through better inferences. Pharmaceutical companies, for example, have contemplated sharing basic, nonproprietary research. Through the creation of a common set of data standards, tools, and processes, these companies could increase their ability to work with outside researchers and partners, saving on the cost of discovery and drawing better inferences from larger data sets.

At the top of the stack, innovation remains widely distributed. But the underlying platforms that allow communities of users—such as Linux coders and Wikipedia authors—to become creators are sensitive to scale. Facebook and Salesforce.com are exemplars of B2C and B2B platforms, respectively. Integrated companies are far from dead, however,

as proven by successful vertically integrated “stack builders,” such as Apple and Microsoft.

Finally, a large number of point solution providers complete the stack, supplying services and products for both open and proprietary ecosystems. The focus of these providers is generally narrow—aimed at specific areas of the market. Examples include Adobe in software, Xerox in services, and Seagate Technology in hardware. (See Exhibit 5.)

The broader message is that the legacy position of many companies within an industry is in flux. Start-ups and new entrants with different economics, motivations, and time horizons may be able to attack profit pools that were once protected.



A PRACTICAL AGENDA

TMT COMPANIES NEED A comprehensive response to the competitive threats and opportunities driven by technology disruption and shifts in industry architecture. They also need to be even bolder and to act faster than in the past.

Understanding Strategic Options

During the global financial meltdown six years ago, many companies adopted the stance that a crisis is a terrible thing to waste. In an era with constant technological disruption, leaders need to adopt that same stance. They should seek to understand the vulnerabilities and opportunities presented by their evolving industries.

Threats abound. Traditional media companies are losing ground to players that use data and analytics to more effectively target advertising. Regulation may prevent telecom operators from acquiring scale to compete at the bottom of the stack, and the migration of customers to over-the-top (OTT) players is gaining speed. The hardware sides of technology companies are becoming commodity businesses. On the software side, fast-moving cloud companies are capturing market share and driving down margins.

Opportunities also abound: media companies can embrace OTT delivery, telecom operators can leverage data and strong custom-

er relationships and enter cloud and data analytics businesses, and technology companies can orchestrate ecosystems in areas such as smart energy, home automation, and smart cities.

Evidence abounds that companies are rethinking strategies and portfolios. Several companies, such as Hewlett-Packard, Symantec, eBay, Gannett, and Fox Broadcasting, are breaking up in order to sharpen their focus and realize the underlying value that diversification had masked. IBM, Microsoft, and other technology companies are making big bets on cloud computing. Media companies are experimenting with new product configurations that appeal to consumers unaccustomed to paying for content. Within telecommunications, consolidation, especially in Europe, is picking up pace

Analyzing Value Creation Scenarios

The reality is stark. Without making a series of productivity and growth moves within their core businesses *and* bold and disruptive strategic bets beyond the core, incumbent TMT companies will struggle to generate top-quartile shareholder returns in the future.

Established companies must have a strong, clear productivity agenda that can generate

TSR and fund the journey of longer-term portfolio transformation. Companies should carefully choose the scope, level of aggression, and execution risk of productivity initiatives, such as better use of data and analytics, digitization of channels, agile software and product development, and simplification of product portfolios, operating models, and decision rights.

At the same time, companies should be looking for opportunities to extract more growth from the core businesses. Mobile and video platforms, fixed-mobile convergence offers, pricing-improvement programs, and low-cost devices are all promising avenues to pursue.

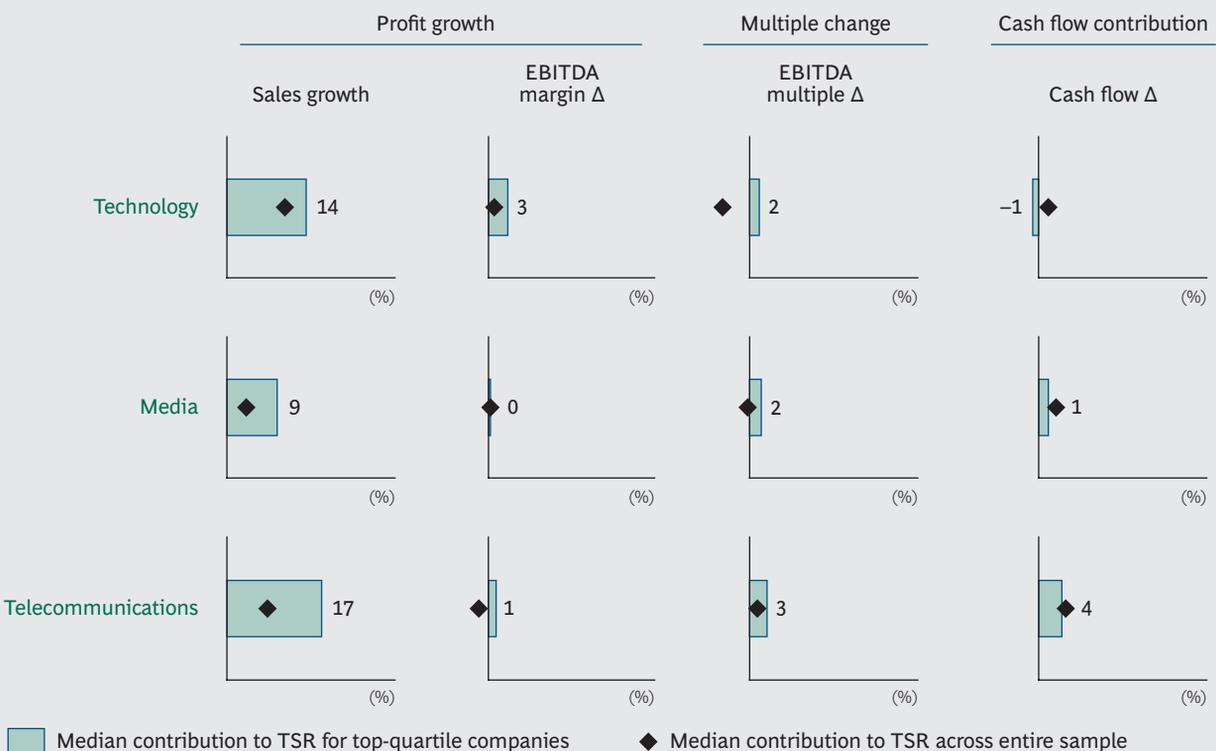
These measures are certainly necessary but may be insufficient for top-quartile performance over the next five years. TMT companies must also think about capturing growth from new markets, such as health care and education verticals, as well as the Internet of Things. Such initiatives may involve acquisi-

tions and the creation of new businesses, which will certainly entail risk—but the greater risk is inertia.

TMT companies should carefully choose the scope, level of aggression, and execution risk of productivity initiatives.

Growth, either from the core or new businesses, is the single most important source of value for successful companies. Over the past ten years, sales growth contributed 9 to 17 percentage points of shareholder return to the top-quartile of the three TMT industries, the single largest contributor. (See Exhibit 6.) (Although the focus of this report is a five-year analysis, a ten-year view helps to smooth out the surge in earnings multiples that occurred in the bounce back from the global financial crisis.)

EXHIBIT 6 | Sales Growth Is the Primary Source of TSR over a Ten-Year Period



Sources: S&P Capital IQ; BCG analysis.

Note: Disaggregation is multiplicative but converted and shown here as additive, with remainders assigned to the margin and multiple change fields.

Growth, of course, is not the only way to generate value. Many companies have strong cash flow that can be applied to share buybacks or dividends. Historically, as Exhibit 6 shows, telecommunications and media companies have been more likely than technology companies to pay out dividends. But as business in the core portfolio slows, even technology companies should consider returning cash to their shareholders—in addition to, not instead of, seeking growth.

If companies start to rely on dividends and buybacks for value creation, however, they need to manage the expectations of their current investor base. Through better investor communications and recruitment of new types of investors, TMT companies can actively address discounts embedded in their stock price. (See Exhibit 7.)

Shareholders, especially in the technology industry, are playing an increasingly activist role in encouraging portfolio transformations, changes in leadership, and the return of cash. Companies need to assess their future in the way that their shareholders evalu-

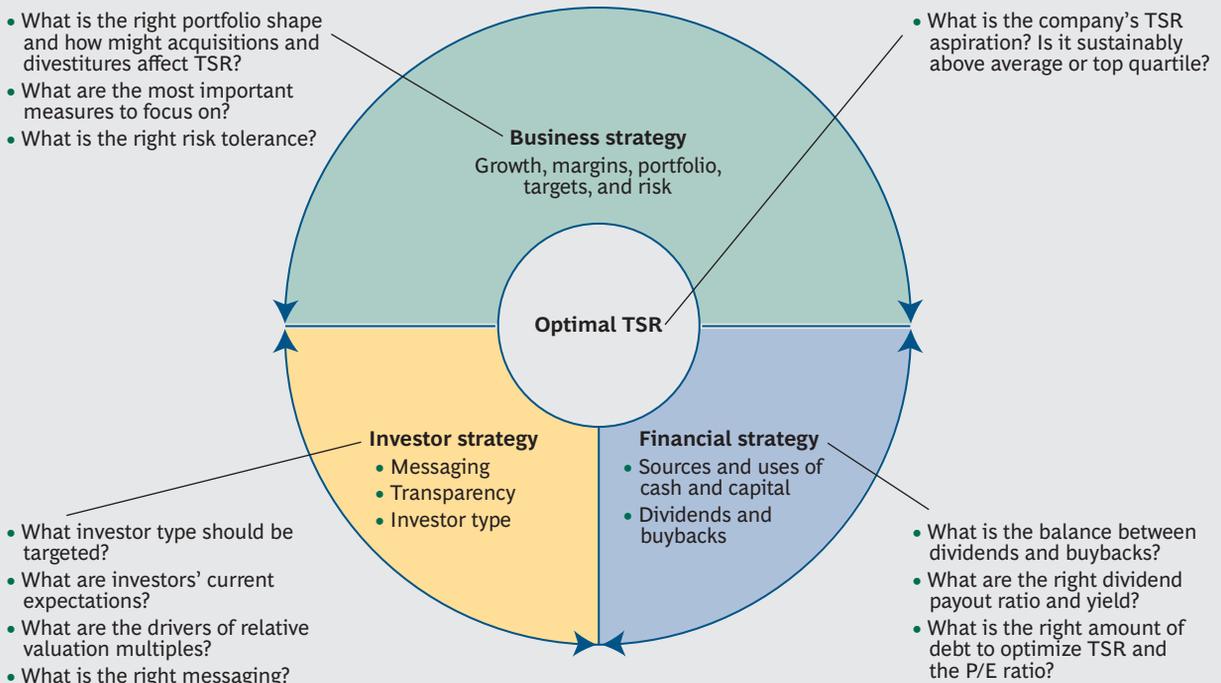
ate them—and the TSR lens enables them to do just that.

Aggressively Shifting Capabilities

Successful execution of these strategies will require new skills in business model innovation, software, data and analytics, mobile, and digital. The strongest value creators actively manage the development and acquisition of these skills. They conduct strategic workforce analyses to determine the skills they need. In resource-scarce domains such as data science, software development in specific languages, and user experience design, they develop focused recruitment and skills-development strategies. In areas of surplus, they either retrain people or conduct fast and fair outplacement.

Agile corporate-development and adaptive-strategy skills will also play elevated roles as companies resize and reshape their organizations. In recent years, many TMT companies have understandably focused on running lean businesses. Disruption will force them to ask whether they are in the *right* businesses.

EXHIBIT 7 | Optimizing TSR Requires an Integrated Approach to Strategy



Source: BCG analysis.

At the strongest TMT companies, HR is playing a sophisticated activist role. These companies apply state-of-the-art analytics and evidence-based approaches to maximize the value of their people. It's no wonder that about one-third of Google HR staff have advanced degrees in various analytic fields—PhDs and master's degrees in operations, physics, statistics, and psychology.

The skills mix is where the rubber hits the road. An exciting new strategy—from products to services, for example, or building ecosystems in specific industry verticals—that promises strong value creation is just a good idea if the company does not have the right people and capabilities to deliver. Why, for example, do most technology and telecommunications companies have a smaller share of online sales than airlines or banks? In many cases, it is because the talent and organizational center of gravity still rests in physical channels. The sooner that changes, the better.

Focusing on Change Management

Change management capabilities are what allow companies to tie together their strategic, value-creation, and people agendas into an overall program that will be effective, low risk, scalable, and, above all, accelerated. Change is always difficult, but it is especially so given the uncertainty and rapid

clock speed associated with technology disruption. Many of today's leaders are not digital natives. They may lack experience with new technologies and business models and may be risk averse, relying on what is familiar to them.

One of the best ways to break old patterns is for CEOs to appoint members of the senior leadership team who have knowledge of disruptive technologies—and then give those executives meaningful authority. It's not good enough to have a chief digital officer who has little influence over important business and strategic decisions.

In addition, organizations tend to reward the delivery of today's results rather than the building of capabilities that promise better results tomorrow. Organizational inertia can smother new initiatives. The strongest leaders are able to get their teams and their organizations to focus on both time horizons simultaneously.

The specific challenges operating for today and for tomorrow—for productivity and for growth—differ across the TMT industries. In the remaining chapters, we examine each sector at a more detailed level.

TECHNOLOGY

A TALE OF TWO CITIES

THE CURRENT WAVE OF disruption is dividing the technology industry in two—literally in the case of some companies. On one side, stack builders and orchestrators have created profitable ecosystems and are expanding into growth markets such as smart homes, cities, and energy; wearables; and the Internet of Things.

On the other side, large segments of the industry are undergoing commoditization. This trend is especially evident at the bottom of the stack and is largely driven by modularization, standardization, and a need to reach the masses. Cloud companies, for example, are using their purchasing power to push down the price of servers, storage, and network equipment. As a result, revenue growth for hardware is flat or declining, despite the solid growth in public and private cloud services, which rely on those components. (See Exhibit 8.) Commoditization is also gaining grip higher in the stack, where open-source standards allow new entrants to put downward pressure on prices.

Several companies within a third group—the point solution players—are benefiting from this bifurcation by providing focused products and services to both the stack builders and the commodity companies.

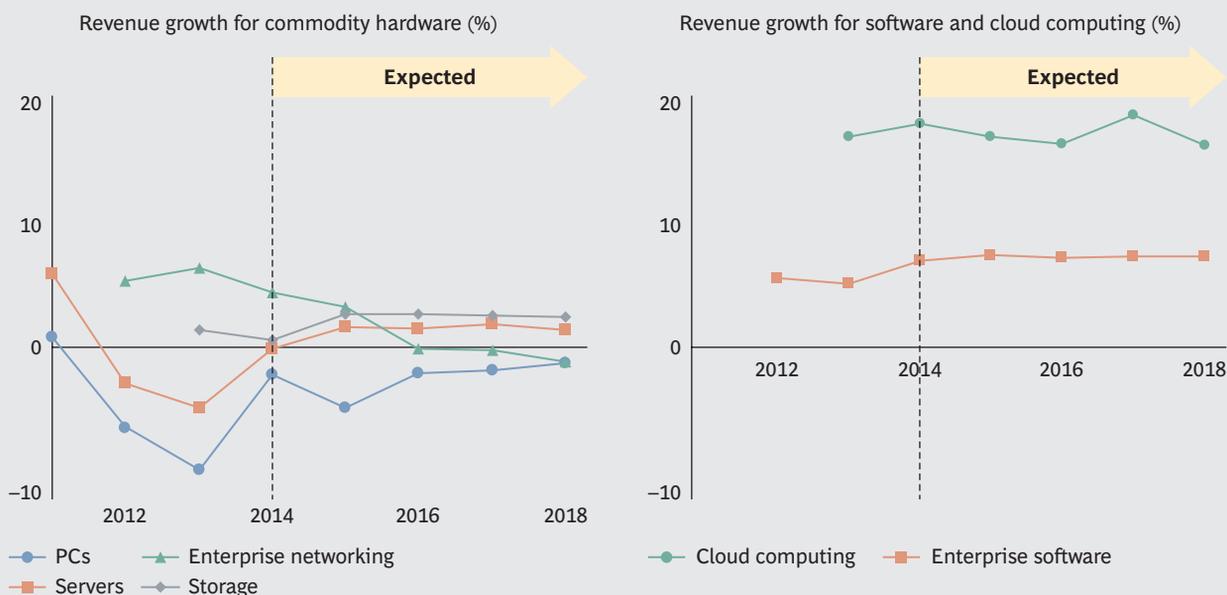
Companies from either side of the divide—and those that supply solutions to both—can

earn superior returns. A stack builder such as Apple narrowly missed the top-ten list of technology value creators this year but made it the past four years on the strength of creating what is possibly the most successful ecosystem of mobile and digital services. Salesforce.com, an ecosystem orchestrator, also narrowly missed the cut but made the top ten in the past three reports.

Companies operating in the commodity-heavy layers of the stack can do well if they have strong sales, low costs, innovative technologies, and strategies aligned with maturing markets. Six data-storage and semiconductor companies are in the top ten, led by number two, Seagate Technology. (See Exhibit 9.) ARM, which sells semiconductor designs for mobile devices, has a long history of success in creating TSR as a point solution provider for the commoditizing layers of the stack. It is the number-three technology value creator in this year's report.

Technology has consistently finished in the top half of industries in TSR performance, so its overall showing in this year's report is unsurprising. But one of the big lessons in this year's rankings is that diversity generally does not pay. Companies that focus on only a few opportunities outperform those that spread their bets around. (See Exhibit 10.) In fact, only 3 of the 13 large-cap technology companies, which are more diverse,

EXHIBIT 8 | Growth Rates for Commodity Hardware Are Flat or Declining



Sources: Gartner; IDC; BCG analysis.

Note: PCs include laptops and desktops; storage refers to external controller-based storage; cloud computing refers to public cloud services only.

EXHIBIT 9 | Small-Cap Companies Dominate the Top Ten Technology Companies

	Company	Location	Segment	TSR ² (%)	Market value ³ (\$billions)	TSR disaggregation ¹						2014 TSR ⁵ (%)
						Sales growth (%)	Margin change (%)	Multiple change ⁴ (%)	Dividend yield (%)	Share change (%)	Net debt change (%)	
1	GoerTek	China	Consumer devices	74.7	8.8	58	-3	23	1	-3	-1	-21
2	Seagate Technology	United States	Data storage products	70.3	18.3	7	23	20	4	9	8	17
3	ARM	United Kingdom	Semiconductors	67.8	25.5	19	10	40	2	-2	-1	-19
4	HCL Technologies	India	Software and IT services	64.4	16.2	26	5	27	3	-1	4	27
5	Infineon	Germany	Semiconductors	59.2	11.5	-2	6	32	7	-7	23	2
6	Tata Consultancy Services	India	Software and IT services	58.4	68.8	24	4	29	3	0	-1	23
7	Catamaran	United States	Software and IT services	54.7	9.8	70	-1	1	0	-14	-2	0
8	Micron Technology	United States	Semiconductors	52.5	23.0	14	15	8	0	-6	23	54
9	Western Digital	United States	Data storage products	49.8	19.8	15	9	37	1	-1	-11	22
10	SanDisk	United States	Data storage products	49.2	15.9	n/a ⁶						36
Top ten				58.8	217.6	19	6	27	2	-2	-1	19

Sources: Standard & Poor's Capital IQ; Thomson Reuters Datastream; Bloomberg; annual reports; BCG analysis.

Note: Sample is 80 companies, each of whose market valuation is greater than \$9 billion.

¹Contribution of each factor is shown in percentage points of the five-year average annual TSR; any differences in TSR totals are due to rounding.

Each top-ten number is the median for its factor, not a sum.

²Average annual total shareholder return, 2009–2013. The top ten is the median.

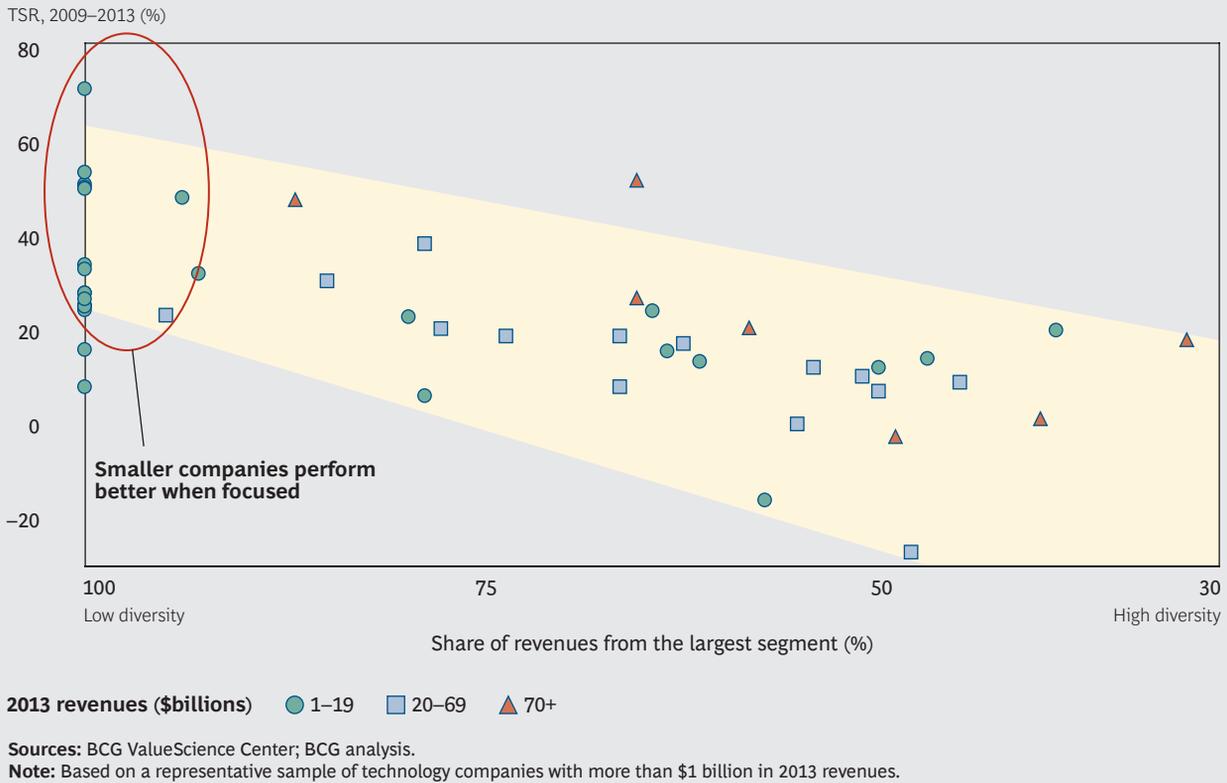
³As of December 31, 2013. The top ten represent aggregate market value.

⁴Change in the EBITDA multiple.

⁵As of November 3, 2014.

⁶TSR disaggregation is not available owing to negative EBITDA in the starting or ending year.

EXHIBIT 10 | In the Technology Industry, Diversity Generally Does Not Pay



finished in the top half of value creation. (See Exhibit 11.)

How can technology companies, even those that have done well over the past five years, further improve their performance? First, TSR creation is an often-overlooked but powerful lens into business planning, and it can be used to evaluate specific initiatives, product launches, and M&A activity. Second, a company needs to strengthen its core through productivity and growth measures. Third, it needs to understand whether it is a stack builder, an orchestrator, a commodity player, or a point solution provider and pursue adjacent growth based on its starting position. Finally, it will need to dramatically reshape its capabilities to become more agile.

Using TSR to Shape Strategy

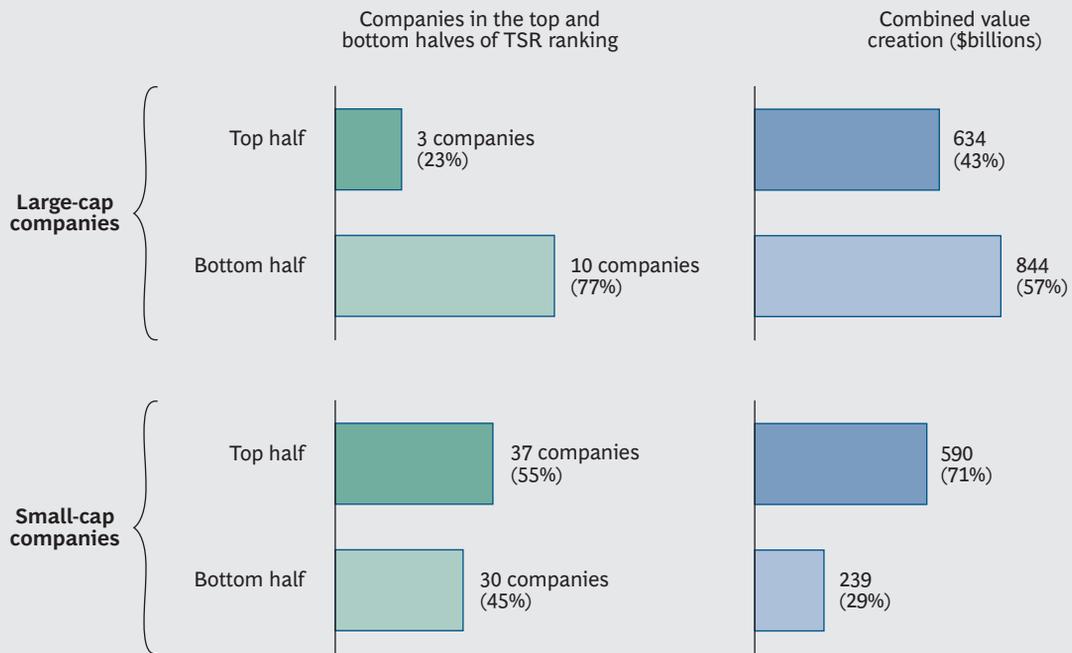
More than ever, increasing TSR requires companies to align their business, financial, and investor strategies. They need to make sophisticated trade-offs regarding how much to invest in future rather than current performance, how much capital to devote to

particular businesses, how much value to return to shareholders, and how to appeal to their target investor groups.

The proposed breakups of Hewlett-Packard and Symantec, as well as eBay’s spinoff of PayPal, are examples of strategies designed to increase organizational focus and TSR. It is not surprising that these are the same goals of activist investors, who have increasingly been targeting the technology sector.

Even if they are not the targets of investor activism, all technology companies should take the opportunity to make fundamental choices about strategy. Many have historically focused on the P&L statement more than they have on the balance sheet. Value creation is a great way to help them understand whether their portfolio of businesses and capital allocations to those businesses make sense. It can also help companies analyze whether their best use of a portion of their free cash flow may be to reward shareholders with dividends and stock buybacks. This is not a typical move for technology companies. (See the sidebar “Creating Value the Seagate Way.”)

EXHIBIT 11 | Only 3 of 13 Large-Cap Technology Companies Finished in the Top Half for All TMT Companies



Sources: BCG ValueScience Center; BCG analysis.

Note: Value is calculated as (market capitalization on 12/31/08) x [(1 + TSR (from 12/31/2008 through 12/31/2013))⁵ - 1]. Large-cap companies' market capitalization exceeds \$50 billion.

Divestiture is not the answer for all companies. Amazon.com, for example, runs its separate retailing, cloud, and logistics businesses almost independently as loosely joined and interoperable platforms. But if companies remain diverse, they need to organize in new ways to create agility and responsiveness and to avoid excessive coordination costs. In nearly all cases, they will need to be bolder and more aggressive than they have been in the past. Playing it safe or aiming for incremental change may well be the riskiest option of all.

Strengthening the Core

Strengthening the core requires introspection. Companies, particularly those operating further down in the commodity-heavy layers of the stack, have to closely scrutinize their costs—and not just through short-term measures such as squeezing suppliers, closing facilities, and reducing head count.

For many companies, those kinds of actions will yield incremental improvements that enable them only to chase a downward spiral of

prices and margins. Their market position will become weak, and they will be unable to fund investments in innovation. Instead, they need bold actions to unlock dramatic improvements in productivity.

Companies need to look at their organizations and find ways to simplify them dramatically. This can mean removing unnecessary and often excessive levels of management that add cost and complexity and that slow down decision making. They also need to develop and implement new ways of working that take out cost and improve productivity, such as leveraging enterprise and market data and technology.

Perhaps the highest hurdle in strengthening the core is the willingness to take on this challenge at scale and speed. Leaders must be willing to embrace change and stick with it and empower line managers and teams with the tools, structure, and support needed to succeed.

Strengthening the core is about growth as well as productivity. Even if their core mar-

CREATING VALUE THE SEAGATE WAY

Even companies that are unlikely to grow swiftly can generate strong TSR performance. Seagate Technology's consistent focus on TSR helped the company navigate an extremely turbulent business environment.

Founded in 1979 by five technology entrepreneurs and executives who had played a key role in the early development of hard-disk drives, Seagate is a first-generation Silicon Valley company. By 2007, it was facing several challenges. The sector was consolidating, with fewer players and fewer and bigger customers. Innovation was slowing, and product cycles were getting longer. Meanwhile, new disruptive technologies, such as solid-state drives, were entering the storage space. Seagate was trading at a low multiple of roughly two to four times earnings. Both margins and market share were declining, and the company's estimates for future profits were moving into the red. Executives were convinced that new business trends, such as cloud computing, would continue to drive further growth in the disk drive

market. But it would require major new investments in core technology to improve the company's competitive position. By 2008, those investments were well under way but were having little positive impact on the company's stock price.

The global financial crisis of 2008 forced the company to cut costs, shore up its balance sheet, and eliminate dividends. Seagate also restored its original functional structure in order to refocus on execution and innovation in the core business. Seagate's gross margins grew nearly fourfold, from a low point of 7.5 percent in April 2009 to 27 percent by the end of the year, greatly improving its cash flow. But Seagate's stock, which rebounded in 2009, gave up a large part of those gains the following year.

Senior leaders began to realize that they could improve the company's valuation by changing the conversation. The maturation of the industry made the stock unappealing to traditional growth investors. But Seagate's strong cash flow would be appealing to another group of investors—

kets are mature, technology companies have several opportunities to increase revenues through smart and diligent execution of go-to-market strategies and the adoption of advanced technologies:

- **Pricing.** Pricing is often an underused value-creation tool. Pricing at technology companies today is about picking the right model and executing with rigor. As XaaS pricing becomes more common, companies must decide how to integrate this approach into their go-to-market model. This is not an easy transition since short-term cash flow is often lower when solutions are priced as services rather than licensed or sold.

Pricing is also about effectiveness. If companies understand the distinct value that different segments of end users derive from their services—in other

words, what makes those services sticky—they can price more effectively. However, companies often discount indiscriminately to win or retain customers since the cost of serving a customer is next to nothing. By pricing more effectively, companies can generate revenue gains of 2 to 8 percent within 18 months.

- **Sales Strategy and Effectiveness.** Another way for technology companies to generate an immediate and sustainable revenue boost is to focus on getting more from the current customer base, from product and service offerings, and from the sales organization. These assets often have significant untapped profit potential.
- **Small and Medium-Size Enterprises (SMEs).** Large technology companies have not always actively pursued the SME market, even though the payback for these

so-called growth-at-a-reasonable-price, or GARP, investors. The challenge was to attract greater numbers of these investors to the company's stock.

In early April 2011, Seagate announced that it would pay an annual dividend of 86 cents per share, creating an initial dividend yield of 5.4 percent. In the first two weeks after the dividend announcement, Seagate's stock price increased by nearly 25 percent. The combination of the dividend announcement and the new focus on GARP investors began to pay off. Capital Research and Management, the largest family of GARP funds in the U.S., with more than \$1 trillion in assets under management, started buying Seagate and became an important investor. Since then, the company has continued to increase its dividend. In 2014, it will pay out \$1.72 per share, double the dividend it paid in 2011. At the same time, Seagate has completed several large and moderate-size acquisitions and has continued to invest heavily in core technologies. By the end of 2013, these combined moves had

helped increase Seagate's price-to-earnings multiple to 11.

The TSR lens has also led the company's senior executives to reinvent their mind-set about the business and how best to drive value. "We were forced to take a TSR perspective," says Patrick O'Malley, Seagate's CFO. "In 2009, our balance sheet was the albatross around our neck. Now, it's a phoenix. We are focused on how we can use this balance sheet to do what we need to do. Today, we look at everything on that balance sheet as a potential source of TSR. We are determined to be good stewards of capital."

In 2011, Seagate acquired Samsung Group's hard-drive business for about \$1.4 billion. M&A is also an important vehicle for entering new areas of future growth in adjacent businesses. "But we don't just let the desire for revenue growth drive it," says O'Malley. "Every acquisition has got to deliver TSR. We have turned away from some seemingly high-flying opportunities because of that."

companies on technology investments can be substantial. In 2013, we surveyed more than 4,000 SMEs in five countries—the U.S., Germany, China, India, and Brazil. The leaders in technology adoption from 2010 through 2012, across all industry sectors, created jobs almost twice as fast as other small businesses. Technology leaders also increased their annual revenues 15 percentage points faster than did companies with lower levels of technology adoption.

- *Business Model Innovation.* Business model innovation is especially valuable in times of instability. It can provide companies with a way to break out of intense competition, under which product or process innovations are easily imitated, competitors' strategies have converged, and sustained advantage is elusive. It can help address disruptions—such as

regulatory or technological shifts—that demand fundamentally new competitive approaches.

Business model innovation can also help address specific opportunities, enabling companies to lower prices, for example, or to reduce the risks and costs of ownership for customers. In our experience, many of the companies that flourish during disruptions have reinvented themselves rather than simply deploying defensive financial and operational tactics. They often find it easier to gain consensus about the bold moves required to reconfigure an existing business.

- *Deep Consumer Insight.* As product bets become bigger and risks loom larger in volatile markets, a deep understanding of customer needs and engagement becomes increasingly valuable. New techniques and

expertise are required to integrate and draw insights from the unprecedented amount of customer data available. This is where data analytics—an umbrella term for technologies such as recommendation engines and machine learning along with the near-limitless computing power of the cloud—can help companies retain existing customers, target new ones, and identify new opportunities. Consumer insight is an important input at every stage of the value chain—whether it is in response to better inventory management in the supply chain, matching of product features to customer needs during R&D, effective targeting of marketing messages, or alignment of pricing with customer willingness to pay.

Deciding Where to Play

Before deciding where to pursue adjacent growth, technology companies must decide on what side of the industry divide they fall. Adjacent growth for a commodity player looks very different from what an ecosystem orchestrator sees. For commodity players, for example, M&A should aim for scale and consolidation. For an orchestrator, it should fill gaps in the ecosystem.

This analysis is critical. Commodity players can find adjacent growth but not in the same way that an orchestrator or a point solution player can. Although the temptation to try to become an orchestrator may be strong, many technology companies are better off focusing their ambitions on competencies and adjacencies closer to their core.

Increasing Organizational Agility and Capability

None of the initiatives outlined above will bear fruit without adequate changes in the organization to support them.

Organization Setup. In a time of increasing clock speeds and accelerating innovation, companies must transform how they work. Many traditional software companies still produce software through the “waterfall” method. Separate groups are responsible for conceiving, designing, building, testing,

operationalizing, and maintaining software. Participants can spend more time in meetings and managing handoffs across organizational boundaries than on writing and testing code.

Consumer insight is an important input at every stage of the value chain.

Leading-edge companies do away with the waterfall. They create flat organizations in which development and testing both report to the same manager. Individual contributors have a better sense of how their decisions affect the overall development and release of software, so there are fewer slowdowns and do-overs. The advantages of this way of working are faster time to market and stronger customer involvement in product design.

Talent. Technology companies that aim to grow, both inside and outside their core, also need new talent. For example, Google paid more than \$500 million to buy DeepMind, a London-based company that specializes in algorithm-based “deep learning.” Industry experts have hypothesized that the main purpose was to add talent.

Smart companies have strategies, programs, and measures designed to recruit, develop, and retain their top employees and keep them motivated at the same time—not an easy task. This is especially critical for companies making large and frequent acquisitions. The saying that a company’s most important assets ride the elevator is especially true for technology companies.

Companies need a strong HR brand in order to hire people for areas with severe skills shortages such as data security and analytics. At the same time, they will need to hire and retain employees who can make incremental improvements to mature products—a very different skill set from that required to ignite proprietary innovation in high-growth areas.

Data Analytics. The explosive growth in the quantity and quality of data creates significant opportunities—and challenges—for enterprises. Adding the right talent is insufficient for a company to reap the benefits. It also needs to put in place the right processes in order to incorporate comprehensive data analytics into its operating model. These processes should be standardized so that different groups are not engaging in fundamentally different methodologies. Data analytics teams need to create visualization tools, dashboards, and other interfaces so that their results are straightforward and easy for senior executives to understand.

Many executives these days say that talent trumps strategy—great people can rescue a poor strategy. In technology, it takes both—along with a healthy dose of organizational effectiveness.

MEDIA MATTERS

THE MEDIA LANDSCAPE IS changing so swiftly that you had better not blink. Disruption takes two primary forms in the media industry:

- *The Shift in Content Consumption and Value.* Consumers have been rapidly shifting how and where they consume and, increasingly, create content. This trend, well known at a macro level, is also fascinating on a micro level. In the next minute, 216,000 photographs will be posted on Instagram, 80,000 posts will appear on Tumblr, 2.5 million pieces of content will be shared on Facebook, and the equivalent of 61,000 hours of music will be streamed on Pandora. Traditional media companies are following their customers into these new channels but are playing catch-up.

Parenthetically, despite the increasing popularity of user-generated content, the value of professional video content has never been higher, as underscored by the popularity of live sporting events, Netflix, Amazon Prime Instant Video, and other OTT services. Netflix alone spent \$2.1 billion on content in 2013, mostly purchased from major media conglomerates. U.S. networks spent about \$30 billion last year on the right to broadcast sporting events.

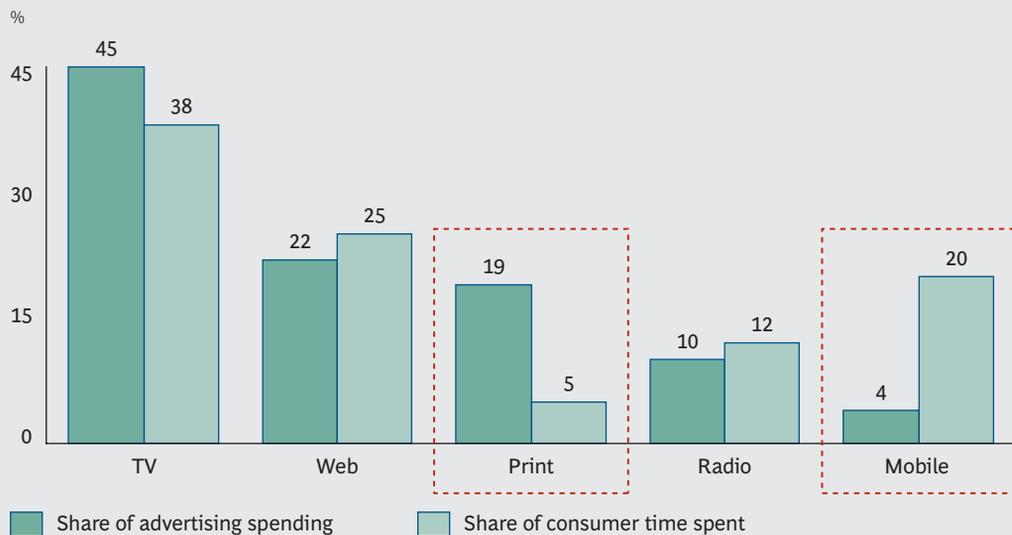
- *The Shift of Ad Dollars.* Advertisers are following consumers to digital and mobile

platforms and to video formats. From 2013 through 2018, spending on mobile and online video ads is expected to grow by 35 and 28 percent, respectively. New players such as Facebook, Google, and Twitter are capturing 70 percent of mobile ad spending. This shift is coming at the expense of traditional media. Magazines and newspapers capture only about 20 percent of global ad spending, compared with 40 percent in 2004.

Despite these steep growth rates, mobile advertising still has room to grow. Consumers spend about 20 percent of their media time on mobile devices, yet advertisers devote only 4 percent of their ad budget to the channel. (See Exhibit 12.) It's not simply that advertisers are reluctant to spend on mobile. Print continues to have higher engagement levels than many newer channels do. In addition, media companies (except for search companies) have not yet created business models that optimize mobile ad creation and placement, nor have they trained their sales forces to capitalize on the mobile explosion.

Against that kaleidoscopic backdrop, it is hardly surprising that, over the past five years, the top-ten lists of media value creators have been a roulette of changing names. Other than those based in emerging markets, notably Tencent, Naspers, and Baidu, only one

EXHIBIT 12 | Mobile Remains an Underpenetrated Ad Channel



Sources: Business Insider via Mary Meeker; IAB; eMarketer; BCG analysis.
 Note: Includes U.S. data from 2013.

company has made the top-ten list more than twice—and that company, Pearson, a publisher and education outfit based in the UK, has not appeared since 2012.

The media industry’s median 29 percent annual TSR over the five years analyzed in this report is encouraging. Many of this year’s top value creators based in mature markets have pursued clear, identifiable strategies. (See Exhibit 13.)

Number one Sirius XM, with average annual TSR of 97 percent, is the product of a 2008 merger of two satellite radio stations that was criticized at the time as anticompetitive. The combined entity has successfully exploited its scale to increase revenues, margins, and subscribers—despite radio being a challenged medium. Sirius XM has relied heavily on celebrity on-air personalities, strong relationships with car manufacturers, and expansion into digital and online channels.

Number five, CBS, with an average annual TSR of 53 percent, went in the opposite direction. CBS split off from Viacom in 2005, allowing the broadcaster to focus on developing original programming and airing live sports events. In October, CBS announced it would launch a \$6 monthly OTT video service that would air both current shows and

titles from its library, including every episode of *Star Trek* and *Cheers*. This move creates a new delivery platform for CBS’s content and builds direct relationships with customers.

If Sirius and CBS are products of M&A activity, number eight, Schibsted Media Group, with an annual TSR of 46 percent, has created value through portfolio transformation. Based in Norway, the publisher developed a strong online classified business in both mature and emerging markets, generating more than one-half of its revenues from online channels. Schibsted Growth is an in-house venture fund that invests in digital properties such as Prsjakt, Hitta, TV.nu, Let’s Deal, and Lendo. At the same time, Schibsted has been introducing digital and mobile capabilities and services into its traditional print businesses.

Several common lessons emerge from the successes of the top media value creators.

Developing an Integrated Value-Creation Strategy

Despite overall flat revenues or even revenues that are declining, many media companies are still generating strong cash flow that can help finance dividend payouts and stock repurchases—and buy time with investors.

EXHIBIT 13 | Sales Growth Matters in Media

						TSR disaggregation ¹						
	Company	Location	Segment	TSR ² (%)	Market value ³ (\$billions)	Sales growth (%)	Margin change (%)	Multiple change ⁴ (%)	Dividend yield (%)	Share change (%)	Net debt change (%)	2014 TSR ⁵ (%)
1	Sirius XM Holdings	United States	Radio broadcast	96.9	21.4	n/a ⁶						0
2	ProSiebenSat.1 Media	Germany	Broadcast and entertainment	83.3	10.6	-3	8	22	11	0	45	-7
3	Rightmove	United Kingdom	Internet	76.1	4.4	13	7	49	3	2	2	-21
4	Baidu	China	Internet	68.6	62.2	62	0	7	0	-0	-1	34
5	Tencent Holdings	China	Internet	58.7	117.6	57	-9	12	1	-1	-1	28
6	CBS	United States	Broadcast and entertainment	53.1	38.2	2	5	26	2	2	16	-14
7	Naspers	South Africa	Broadcast and entertainment	46.8	41.4	19	-14	41	1	-1	1	26
8	Schibsted Media Group	Norway	Internet and publishing	46.2	7.1	2	-2	30	9	-10	17	-10
9	Dish Network	United States	Broadcast and entertainment	45.0	26.5	4	-5	30	6	0	11	10
10	Discovery Communications	United States	Broadcast and entertainment	44.9	31.5	10	1	22	0	4	6	-21
Top ten				53.1	374.3	10	0	26	2	0	6	-4

Sources: Standard & Poor's Capital IQ; Thomson Reuters Datastream; Bloomberg; annual reports; BCG analysis.

Note: Sample consists of 59 companies, each of whose market valuation is greater than \$4 billion.

¹Contribution of each factor shown in percentage points of five-year average annual TSR; any apparent differences to TSR totals are due to rounding. The top ten is the median for each factor and will not sum.

²Average annual total shareholder return, 2009–2013. The top ten is the median excluding Sirius XM.

³As of December 31, 2013. The top ten represents aggregate market value.

⁴Change in EBITDA multiple.

⁵As of November 3, 2014.

⁶TSR disaggregation is not available due to negative EBITDA at the start of the previous year.

Many of today's media investors are "deep value" investors. We recently interviewed investors of two traditional media clients. The individual portfolios of a significant segment of this group held only one media stock. These investors said that they were buying "cheap" cash flow, and many would sell as soon as the market recognized the arbitrage opportunity. Few were committed to the companies' futures or the future of the industry—a significant change from the historic profile of media investors.

Many media companies are allowing themselves to be defined by these deep-value investors. But by adopting a comprehensive TSR approach, they can start to frame their own stories and attract long-term investors who both understand the fundamentals of the industry and are willing to earn steady returns while media companies reconfigure their business for the digital era.

Most media companies acknowledge that they need to transform their business but don't fully incorporate business, financial, and investor strategies, as depicted in Exhibit 7. By taking a comprehensive approach, media companies can remove a 10 to 15 percent discount from their stocks.

Finding Productivity and Growth in the Core

Although traditional media properties are in varying degrees of health, they could all benefit from a fresh look at costs, efficiency, effectiveness, and purpose. It may be difficult to generalize across disciplines as different as daily newspapers and movie studios, but several areas are worth exploring.

Cultural Change in Creative and Editorial Functions. In the past, many media companies were run by creative executives for

whom spreadsheets and management skills were not necessarily second nature. That approach no longer works in an era of 24-7 news coverage, digital disruption, and falling margins. The challenge today is to preserve the creative edge of media companies while injecting business acumen and developing more standardized and efficient processes. Some media companies have installed number two executives with strong business skills, while many have begun to rely more heavily on data to complement editorial and creative judgments.

A European television studio recently recognized the need to make fundamental changes in its creative operations in order to grow. A new strategy, which focused on better exploiting the creative output of the company's production business, required much closer collaboration among creative and business executives. The company needed stronger commercial acumen in the studios in order to uncover and exploit new revenue sources. It also needed people experienced in developing content that would appeal to overseas markets—a principal source of future growth. Finally, it needed leaders comfortable managing both the creative and business sides of production. Historically, leaders were promoted on the basis of their creative judgment rather than their business skills. The growth strategy required new organization structures and a shift in culture. Together, these changes have helped the studio boost revenues, employee engagement, and shareholder return.

Product Redesign. Media companies must also reexamine their portfolio of products in light of changing consumer behaviors, which are gravitating toward, as just one example, the simple and streamlined offers of OTT providers. Foxtel, a cable and satellite TV company in Australia, revamped its entire pricing and packaging in early November 2014. The company lowered the cost of its entry-level package significantly in order to win new customers, including illegal downloaders. It also reshaped its premium and on-demand offerings by providing a streaming on-demand option.

Newspapers are similarly experimenting with new ways to bundle content across physical

and online channels. Research by several U.S. newspaper chains has shown that they can increase subscription rates by 20 to 40 percent without appreciable volume loss by developing customized combinations of physical product and digital access.

The challenge is to preserve the creative edge while developing business acumen.

Pricing. Even in slow-growth or no-growth markets, pricing remains an often-overlooked opportunity for growth. Research by a magazine publisher in Europe showed that consumers valued its properties so highly it was able to raise subscription prices for its principal titles by 5 to 15 percent. The potential to raise prices depends on the competitive positioning of the brands, of course, as well as on whether they are offering unique and differentiated content.

Sales Force Effectiveness. A close cousin of pricing is sales force effectiveness, a proven way to boost revenues and cut costs. An Asian print-oriented media company whose advertisers were putting more money into digital properties turned the odds in its favor by taking a fresh look at its sales process.

The company broke down what had been a siloed sales organization through consolidation and the creation of shared services. It built new functions that delivered market insights to the sales team and freed them from administrative functions. And it invested heavily in training and developing a national approach to pricing. Collectively, these changes helped reduce costs by 15 percent and drive revenue growth of 5 to 10 percent.

Resizing and Reshaping the Portfolio. The media industry is simultaneously breaking apart and reconsolidating. Traditional multisector media conglomerates, such as Gannett, Time Warner Cable, and News Corporation, have been splitting in two in order to separate their print businesses from TV and other properties. (See the sidebar "Gannett's Transformation.") At the same

GANNETT'S TRANSFORMATION

One of the most successful media transformations has occurred at Gannett. This transformation culminated in an announcement in August that it would peel away its publishing business from its faster-growing digital and broadcasting businesses.

This split of the company would likely not have been possible without a series of earlier moves that improved the fortunes of the print and broadcast as well as the digital sides of the business. Gannett increased performance by transforming its core business and buying the Belo broadcasting group of TV stations for \$2.2 billion. This acquisition helped Gannett achieve scale in its broadcasting business and rebalance its overall portfolio. Gannett also built a new platform to sell advertising to

small and medium-size businesses in multiple channels. In addition, Gannett acquired full ownership of Cars.com. Combined with its majority ownership of CareerBuilder, the acquisition created a financially meaningful digital business adjacent to its core.

Along the way, Gannett provided incremental shareholder value that was based on its strong cash flow by increasing dividends and stock buybacks. Since announcing its transformation at its first-ever investor day in March 2012, the company has tripled its share price and been one of the top value creators in the S&P 500 index. (See the exhibit below.) In 2012, the company posted its first year-over-year revenue growth since 2006.

Gannett's Strategic and Financial Moves Have Paid Off



Sources: S&P Capital IQ; Thomson Reuters Datastream; BCG analysis.
¹MSCI All-Country World Index.

time, many of these companies are using acquisitions to achieve scale in their more narrowly focused businesses. Journal Media Group and E.W. Scripps, for example, are merging their broadcasting companies and spinning out their collective newspaper assets. In effect, they are creating two larger companies: one focused on broadcasting and one on newspapers.

Building New Digital Businesses

By fixing their legacy operations, traditional media companies can free up resources to invest in adjacent higher-growth businesses, particularly digital ones. Creating a new business within a traditional media business, however, is not an easy task. It will likely compete with the parent's traditional business and cannibalize sales. Leaders will have to make strategic and organizational choices about whether to integrate their digital and legacy businesses or build a separate "attacker" digital business.

A stand-alone business should be run independently with aggressive goals, along with different hiring practices and a distinct culture and operating rhythm. The parent company needs to be supportive but not meddling. Schibsted has largely followed this model in creating new businesses. In 2007, Kjell Aamot, then chief executive of Schibsted, told the *New York Times* that the company had recognized a decade earlier that "being a traditional Norwegian newspaper company would not be sustainable over time.... We changed from a defensive stance at the beginning of the Internet age to a very offensive one."

That is a stance that all traditional media companies should adopt.

THE TELECOM BOUNCE

THE CHALLENGES FACING INCUMBENT telecom operators are well known. Mobile revenues in mature markets are falling or flat, and growth in emerging markets is flattening rapidly. Mobile data traffic has been doubling

every year since 2009, but operators have not benefited from that growth nearly as much as have the OTT players whose services are partly responsible for straining network capacity. (See Exhibit 14.)

EXHIBIT 14 | Telecom Operators Have Not Captured Value Commensurate with the Growth in Mobile Data Traffic

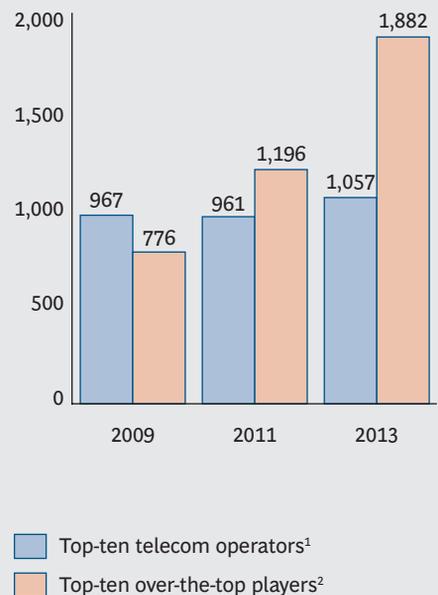
Mobile data traffic has doubled every year

Telecom operators have not captured the value

Global monthly mobile traffic (petabytes)



Cumulative market caps (\$billions)



Sources: Cisco Visual Networking Index 2013; Thomson; Standard & Poor's Capital IQ; annual reports.

¹The top ten telecom operators are China Mobile, AT&T, Telefónica, Vodafone Group, Verizon, France Télécom, Deutsche Telekom, NTT, NTT DoCoMo, and América Móvil.

²The top ten over-the-top players are Apple, Microsoft, Google, Amazon.com, Facebook, eBay, Yahoo, Baidu, Tencent Holdings, and Priceline.com.

At the same time, regulatory uncertainty and a fragmented industry structure in many markets have prevented or delayed necessary network investments. It is no wonder that equity analysts are bearish, with the share of “buy” and “outperform” recommendations declining from 55 percent in January 2009 to 40 percent in August 2014.

Despite these challenges, the industry rebounded sharply in the 2009–2013 period, recording a median annual TSR of 15 percent, which far exceeded the single-digit or negative returns in the prior four five-year periods. While this is progress, the industry remains in the bottom half of industries in generating shareholder value. Seven of the sample’s 55 companies—five from Europe alone—destroyed shareholder value totaling \$47 billion over this period.

So what is setting the most successful companies apart? On average, the largest contribu-

tors to TSR among the top ten have been multiple change, sales growth, and debt reduction. (See Exhibit 15.) Specific events, however, also play a role. First-placed Sistema’s performance has been driven by a controlling stake in an oil company, while Time Warner Cable’s special dividend in 2009 contributed heavily to its five-year TSR.

Fundamentals matter too. SoftBank and Liberty Global, two active consolidators, made the top ten, and the mobile infrastructure specialists SBA Communications and Crown Castle International focused on only one piece in a deconstructed value chain, namely renting towers and other mobile infrastructure to operators.

Increasingly, a strong emerging-market focus is no longer a guarantee of a top-ten placement. Although Advanced Info Service, based in Thailand, and Telenor Group—headquar-

EXHIBIT 15 | Top TSR Telecommunications Companies Have Exhibited Sales Growth

	Company	Location	Segment	TSR ² (%)	Market value ³ (\$billions)	TSR disaggregation ¹						2014 TSR ² (%)
						Sales growth (%)	Margin change (%)	Multiple change ⁴ (%)	Dividend yield (%)	Share change (%)	Net debt change (%)	
1	Sistema	Russia	Mobile, fixed line, and cable	43.5	11.0	16	-8	30	1	0	4	-73
2	SoftBank	Japan	Mobile and fixed line	42.9	103.9	20	3	13	1	-2	8	-13
3	Liberty Global	United Kingdom	Mobile, fixed line, and cable	41.1	35.1	7	2	18	0	-7	21	2
4	SBA Communications	United States	Mobile infrastructure	40.7	11.5	22	3	8	0	-2	9	25
5	Time Warner Cable	United States	Fixed line, data, and cable	40.4	38.2	5	-1	8	24	3	0	12
6	Crown Castle International	United States	Mobile infrastructure	33.1	24.1	15	1	10	0	-3	10	9
7	Advanced Info Service	Thailand	Mobile	31.4	18.1	5	1	13	11	0	1	26
8	Etihad Etisalat	Saudi Arabia	Mobile	31.1 ⁵	17.6	18	7	-4	6	0	4	-3
9	Telenor Group	Norway	Mobile and fixed line	29.8	37.0	1	2	13	4	1	7	10
10	BT Group	United Kingdom	Mobile and fixed line	27.4	49.4	-3	13	2	5	-1	12	-1
	Top ten			36.8	345.9	11	2	11	3	0	8	6

Sources: Standard & Poor’s Capital IQ; Thomson Reuters Datastream; Bloomberg; annual reports; BCG analysis.

Note: Sample consists of 55 companies, each of whose market capitalization is more than \$8 billion.

¹Contribution of each factor shown in percentage points of five-year average annual TSR; any apparent differences to TSR totals are due to rounding. The top ten is the median for each factor and will not sum.

²Average annual total shareholder return, 2009–2013. The top ten is the median.

³As of December 31, 2013. The top ten represents the aggregate market value.

⁴Change in the EBITDA multiple.

⁵As of November 3, 2014.

⁶The TSR results do not reflect the company’s recent restatement of earnings in 2013 and the first half of 2014.

tered in Norway with strong presences in Eastern Europe and Asia—both thrived on the dynamism of their respective markets, just as many emerging-market players placed in the bottom half as in the top half of TSR returns.

Among the top ten *large-cap* telecom companies, the value creation dynamic shifts dramatically. They are going back to their future as utility stocks. Dividends and stock repurchases provided the most TSR uplift, responsible for 5 percentage points of their 13 percent annual TSR, while sales growth contributed just 2 percentage points. (See Exhibit 16.)

So what does this mean for future value creation? In short, a business-as-usual momentum case for operators is bleak. First, they should take an active role in shaping industry structure and regulation and driving consolidation within their markets. Second, like their

peers in the tech and media industries, future top performers must generate value through productivity measures, create growth initiatives within their core business, and pursue attractive growth opportunities outside their comfort zone. (See Exhibit 17.)

Shaping Market Structure and Regulation

Capital-intensive infrastructure investments have been slow in Europe. Current regulations often restrict carriers from pricing their services adequately or with certainty, putting a brake on investments that could help both the industry and national economies. The response in Australia and Singapore has been state-driven deployment of infrastructure. In other regions and where regulation allows, in-market consolidation has occurred, such as KPN's sale of E-Plus to Telefónica's O2 in Germany or the ongoing consolidation activities in Brazil.

EXHIBIT 16 | Many Large-Cap Telecommunications Companies Rely on Dividends

	Company	Location	Segment	TSR ² (%)	Market value ³ (\$billions)	TSR disaggregation ¹						2014 TSR ⁵ (%)
						Sales growth (%)	Margin change (%)	Multiple change ⁴ (%)	Dividend yield (%)	Share change (%)	Net debt change (%)	
1	SoftBank	Japan	Mobile and fixed line	42.9	103.9	20	3	13	1	-2	8	-13
2	Liberty Global	United Kingdom	Mobile, fixed line, and cable	41.1	35.1	7	2	18	0	-7	21	2
3	Time Warner Cable	United States	Fixed line, data, and cable	40.4	38.2	5	-1	8	24	3	0	12
4	Telenor Group	Norway	Mobile and fixed line	29.8	37.0	1	2	13	4	1	7	10
5	BT Group	United Kingdom	Mobile and fixed line	27.4	49.4	-3	13	2	5	-1	12	-1
6	American Tower	United States	Mobile infrastructure	23.0	31.5	16	-1	8	1	0	-1	23
7	MTN Group	South Africa	Mobile	19.5	37.9	6	0	8	5	0	1	19
8	BCE	Canada	Mobile and fixed line	19.1	33.6	3	-1	9	6	1	1	13
9	Vodafone Group	United Kingdom	Mobile	18.4	190.3	-1	-6	11	7	2	5	-18
10	KDDI	Japan	Mobile and fixed line	17.9	51.4	4	1	7	3	1	1	14
	Total large cap (25 companies)			13.3	1,790.7	2	-1	4	5	0	1	11

Sources: Standard & Poor's Capital IQ; Thomson Reuters Datastream; Bloomberg; annual reports; BCG analysis.

Note: Sample consists of 25 companies, each of whose market capitalization is more than \$25 billion.

¹Contribution of each factor shown in percentage points of five-year average annual TSR; any apparent differences to TSR totals are due to rounding. The top ten is the median for each factor and will not sum.

²Average annual total shareholder return, 2009–2013. The total large cap is the median TSR of the sample.

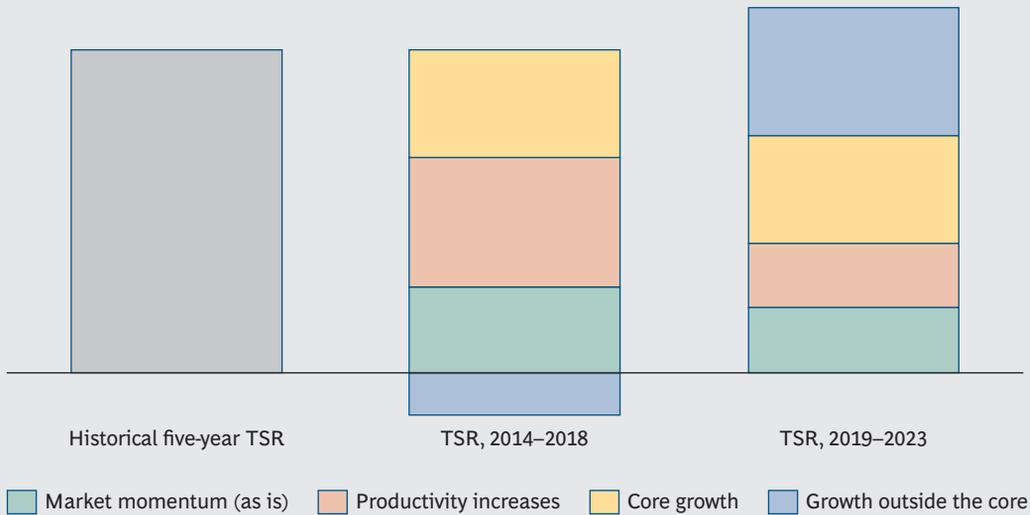
³As of December 31, 2013. The total large cap represents aggregate market value.

⁴Change in the EBITDA multiple.

⁵As of November 3, 2014.

EXHIBIT 17 | Top-Performing Telecom Operators Cannot Rely on Momentum and Productivity

Fundamental levers to generate TSR



Source: BCG analysis.

Authorities increasingly recognize that adequate market structure and regulation are critical not only for carriers but also for the overall economy. But there is still more to do. Carriers should continue to press for both in-country consolidation and regulatory certainty that permits steady returns commensurate with risks.

In advocating for stable and investment-friendly regulation, carriers will have to think creatively about how to price separately for services that run on legacy networks and those that run on new networks that have been deployed at higher economic risk.

Productivity: Radical Changes to the Operating Model

Telecom operators have been cutting back. The key European companies, for example, are reducing spending by more than 5 percent annually year over year. But few of them are making the structural changes that will generate further savings.

Simplified Product Portfolio. Operators with complex tariffs can take a lesson from a few new entrants that have gone to market with simple offers. In France, broadband provider Free entered the mobile market two years

ago with a low-cost offer of €2 a month for 60 voice minutes and 60 text messages and a premium offer at €19.99 a month for unlimited calls and texts and three gigabytes of data usage. (The only subsequent changes have been to add free roaming and additional data.) This simple retail offer enables lean operations, such as online sales and fulfillment, the recent rollout of interactive SIM-card dispensers, and an overall lower cost structure. This business model has allowed Free to capture a 12 percent market share.

Simple offers also work in markets—such as the U.S.—where regulation is not as favorable to so-called mobile virtual-network operators like Free. U.S.-based T-Mobile’s Un-carrier Strategy provides an easy-to-understand portfolio of products and an end to the practice of subsidizing handsets in return for long commitments. After a year of these offerings, subscriber growth rose by 15 percent and revenues increased by 8 percent. Although EBITDA margins still trailed industry averages, they had stabilized at 20 percent.

Low-Cost Networks. Mobile networks generally receive the most press, but fixed-network traffic is also rising exponentially—by about 50 percent annually, according to Cisco. In

this environment, network efficiency and careful capital allocation are critical.

Removing the legacy remnants of a network can be an operator's most effective efficiency measure. Moving to a fully IP-enabled network can save up to 40 percent in operating costs by cutting energy bills and terminating maintenance contracts for legacy hardware. The implementation of software-defined networks also adds to cost efficiency and flexibility by centralizing routing decisions. Such modernized networks also accelerate revenue growth through the faster introduction of new services.

The traditional method of upgrading networks through national, one-size-fits-all rollouts also requires an overhaul. Different regions within a national rollout area have different characteristics and variable market potentials—so a solution that works well in one region may not produce optimal results in another.

Despite the stiff headwinds, operators can grow through several measures.

Fiber to the home, for example, fares best in high-density, affluent areas but is hard-pressed to turn a profit in more spread-out regions. One operator conducting a fiber-to-the-home, fiber-to-the-curb rollout was able to avoid more than \$1 billion in capital expenditures that would not have earned a return. The carrier then redirected some of that savings to areas that were more commercially attractive.

Another carrier analyzed more than 1 billion voice and data entries of 70 million subscribers to decide which were the most commercially attractive sites to upgrade to 4G services. As a result, average revenues generated per user on upgraded sites were more than five times the revenues of sites that had not been upgraded.

Full-Scale Transformation. A simpler product portfolio and network, accompanied by new

processes and service platforms, creates a virtuous cycle of strong customer experience, increased revenues, lower operating costs, and more efficient use of capital.

By following many of the steps outlined above, a telecom operator recently reduced its customer-service workload by 40 to 90 percent, depending on the type of request, and improved customer advocacy. The client expects these improvements will stabilize revenues, reduce operating expenses, and free up 10 percent of capital spending.

Core Growth

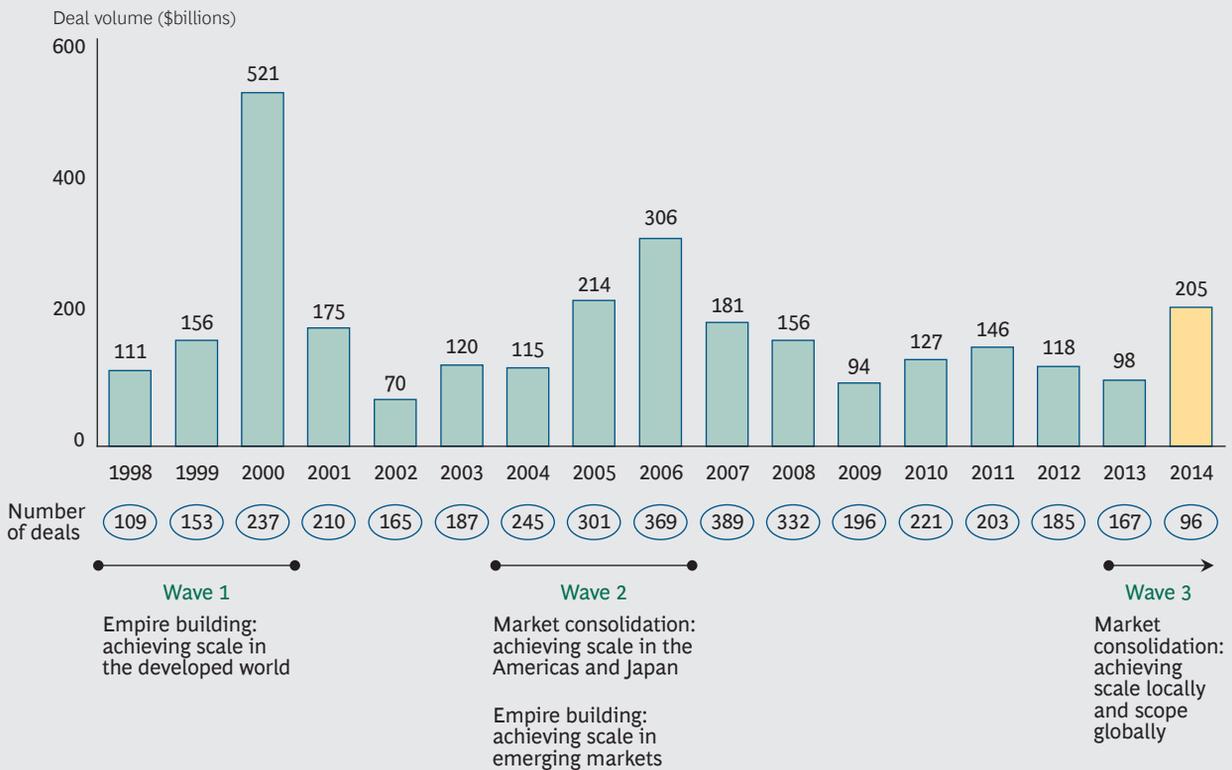
Despite the stiff headwinds, operators still have opportunities to grow through several measures, such as consolidation, convergence, pricing, and customer services.

Consolidation. M&A activity is picking up in the telecom sector in order to achieve scale and fixed-mobile convergence. (See Exhibit 18.) Many of the recently announced deals, such as Telefónica's acquisition of E-Plus, will lead to significant cost savings if the companies are carefully integrated. Revenues will also rise if carriers are allowed to operate freely. In addition, there are opportunities to increase revenues by creating smart fixed-mobile convergence offers that increase cross- and up-selling—and reduce churn. Vodafone Group's acquisitions of cable operators Kabel Deutschland in Germany and of ONO in Spain, as well as Telekom Malaysia's acquisition of Packet One Networks, fit into this mold. Operators with mobile-only or fixed-only operations need to evaluate their options.

Convergence. Winning through convergence is not easy. Traditionally, most convergence offers have been built around simple discounted bundles that prompted customers to buy more and save. Operators would slap together their existing fixed and mobile plans and shave a few dollars off the price. But competitors could easily replicate such bundles, shaving still more off the cost. The resulting price war eroded margins.

Some offers work better than others. The key is that simple discounts should not be the

EXHIBIT 18 | Telecom M&A Activity Picks Up



Sources: Standard & Poor's Capital IQ; BCG analysis.
 Note: 2014 deals are through October 31.

centerpiece. Instead, an operator's assets should be combined in ways that offer unique, compelling services and have a clear "better together" value proposition. In our work with leading providers, we have identified three key approaches:

- **Focus on families.** In most markets, families are particularly high-value customers. They are also likely to be attracted to features and services that make for positive discounts. Positive discounts are features or plan attributes that consumers perceive as valuable but that telecom operators can provide for limited cost—or even no cost at all. They allow operators to provide unique offerings in their fixed-mobile packages without cannibalizing existing revenues. Free calls between members of the same household and collective access to video- and music-streaming services are examples of positive discounts.
- **Expand the reach of traditional features.** Operators can offer services such as video

on several devices at no extra cost to the customer. In the Swiss market, for example, subscribers can store TV recordings in the cloud and access them on any device, and they can program their set-top box with their smartphones or tablets.

- **Rely on bandwidth-intensive value-added services.** Features such as multidevice video streaming and online game playing can drive usage. If they are included in the right bundle, consumers will often trade up to more costly data plans in order to enjoy the services.

The early results from this new wave of convergence offers are encouraging. In France, Orange's Open, Telefónica's Movistar Fusión in Spain, and Portugal Telecom's M4O plans have achieved up to 40 percent penetration among broadband subscribers.

Pricing. Only a few carriers outside the U.S. have managed to follow the likes of Verizon in tying pricing tightly to mobile data usage. (See the sidebar "Verizon's Growth.") Telia of

VERIZON'S GROWTH

Among large-cap companies, Verizon is one of the few operators to create shareholder value from both revenue *and* margin growth. Those two factors contributed a little more than half of its 15 percent annual TSR over the past five years, with most of the rest coming from dividends. Verizon's stock, which traded below \$30 for most of 2008 through 2010, had settled in the \$50 range in late 2014.

Verizon's fundamentals have been anchored in steady mobile-subscriber growth—from 78 million subscribers at the end of 2008 to 121 million by the end of 2013—paired with price discipline and innovation. The company led the U.S. market with the introduction of data-sharing plans in 2012.

Further, Verizon has aggressively deployed its LTE network, reducing network operating costs, avoiding short-sighted spending on 3G infrastructure, and strengthening its pricing power through a high-quality network. These moves have enabled Verizon to achieve 50 percent margins in its wireless business. Unlike many other carriers, it reports that average revenues per user have been growing by 1.5 to 2

percent annually over the past four years. But as Verizon has pushed revenue growth, it has also aggressively taken out costs, especially in its wireline division.

Investors have also been encouraged by several of Verizon's strategic moves. Notably, Verizon acquired the remaining 45 percent stake in Verizon Wireless from Vodafone Group with low-cost financing. Verizon also invested heavily in its fiber-to-the-home FiOS network across 16 states, creating a viable wireline-growth platform.

Verizon has also appealed to dividend-oriented investors by stating its intention to pay down debt and create further growth platforms, including a likely OTT video offering in 2015 and a relaunch of the company's enterprise cloud offer. Against this backdrop, the consensus view of analysts is that Verizon will generate a momentum-based annual TSR of 8 percent with additional growth kicking up returns to 12 percent through 2016. In order to maintain its 15 percent annualized five-year TSR—as forecast by the most bullish quartile of analysts—Verizon will have to deliver on its promises flawlessly.

Sweden slightly increased postpaid average revenues per user (ARPU) within a year of launching a tiered data plan that allows consumers to share usage among devices. Competitor Telenor quickly followed suit, and recent data shows a reversing trend in average mobile-broadband prices in Sweden overall.

Changing tariffs alone, of course, will not lead to a sustainably increasing ARPU. Strong network performance and the corresponding willingness (and ability) of customers to pay are closely related. Recent studies show that in mature markets—and particularly for higher-value customers—network performance is the most important factor in customer loyalty, allowing operators with top-rated networks to charge premiums.

Customer Service and Advocacy. Customer service pays. O2 in the UK has established a reputation for great customer service. It now receives up to six times fewer complaints from customers than its competitors do, reducing cost to serve and churn and creating revenue potential through lower price sensitivity and viral marketing. Recent BCG estimates show the investments in customer service pay for themselves four times over within five years.

Growth Beyond the Core

To generate long-term value for shareholders, operators also need to find ways to grow profitably in new areas. Growth does not necessarily generate shareholder value, so this is high-stakes strategic work.

- *Adjacencies.* Several telecom operators have recently made large bets in adjacent businesses. Telstra, BT, and others have invested in expanding their information and communications technologies (ICT) businesses on the back of existing corporate relationships. Verizon, with its \$1.4 billion acquisition of Terremark in 2011, entered the enterprise cloud market. Yet many telecom operators struggle to participate meaningfully in the \$800 billion ICT market—which is growing 5 percent a year—as they need a compelling offer to compete against IBM, Accenture, and other market leaders.
- *Up the Stack.* Several telecom operators have created vehicles to make investments in high-growth digital areas higher up the stack. Deutsche Telekom's T-Venture has invested in a broad spectrum of online, media, and mobile services. Orange, formerly France Télécom, has focused on TV and online video hosting and music streaming, while Telefónica invested in a social-networking site. A partnerships is often a viable alternative when the carrier is able to leverage its distribution strength to reach a mass market with a popular service, as in Deutsche Telekom's music-streaming deal with Spotify or Vodafone Group's venture with Netflix. In the most successful cases, customers become accustomed to the service, data usage increases, and churn decreases.
- *Verticals.* Some telcos leverage their network and ICT assets to become stack orchestrators in specific verticals. NTT DoCoMo supports financial institutions in reducing costs by providing integrated services ranging from near-field communications to payment network interfaces. It has made eight acquisitions to build this payments-oriented ecosystem. Both NTT DoCoMo and Singapore Telecommunications have made advertising acquisitions, SK Telecom has bought semiconductor and nanobiotech device manufacturers, and AT&T has entered the health care vertical by offering emergency calls, geolocation capabilities, and remote monitoring as an integrated service.

These opportunities will not make sense for some telecom operators. When it comes to finding new value-creation levers, imitation is not a form of flattery. Doing the hard work of setting strategy and being adaptive is the winning move. Playing follow the leader, with inadequate capabilities, is not.

FOR FURTHER READING

The following publications by The Boston Consulting Group will help readers who want to explore several of the topics in this report more closely.

Connecting Rural Markets: How Fixed Wireless Is Unlocking Digital—Everywhere

A Focus by The Boston Consulting Group, October 2014

Making More Money from Data: Five Pricing Secrets of B2B Information-Services Companies

An article by The Boston Consulting Group, October 2014

The Most Innovative Companies 2014: Breaking Through Is Hard to Do

A report by The Boston Consulting Group, October 2014

Improving Engagement and Performance in Digital Advertising: Adding Data, Boosting Impact

A Focus by The Boston Consulting Group, September 2014

The New Rules for Designing Fixed-Mobile Bundles: Winning with Convergence

An article by The Boston Consulting Group, August 2014

Pathways Conjoint: A New Approach to Pricing Mobile

An article by The Boston Consulting Group, June 2014

Code Wars: The All-Industry Competition for Software Talent

A Focus by The Boston Consulting Group, May 2014

Enabling Big Data: Building the Capabilities That Really Matter

A Focus by The Boston Consulting Group, May 2014

A New Business Cycle for Telcos: Time to Invest Again

An article by The Boston Consulting Group, May 2014

New Uses for Telcos' Core Assets in a Digital World

An article by The Boston Consulting Group, March 2014

A Playbook for Developing-Market Mobility Carriers: Reigniting Performance

A Focus by The Boston Consulting Group, February 2014

The 2013 TMT Value Creators Report: The Great Software Transformation

A report by The Boston Consulting Group, December 2013

NOTE TO THE READER

This is BCG's fifth report in the Technology, Media & Telecommunications value-creation series. The main purpose is to help clients understand the dynamics of shareholder growth in these dynamic industries. More than ever, your success will be defined by your ability to achieve both productivity and growth, as outlined in this report. We hope that this report has brought several key value creations to life.

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