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# The Future of Telecom Operators *Capabilities for Rapid Change*

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## EXECUTIVE SUMMARY

*Telecom operators are at a turning point in the evolution of their industry. Even as they need to build a new generation of high-speed fixed and mobile networks, their traditional sources of revenue are being commoditized, making it that much harder to raise the funds needed. Simultaneously, three major trends—demand for ubiquitous connectivity, the rise of modular technologies, and increasing competition from outside the industry—are transforming how all the players in the telecom space are creating value.*

In response, operators must move away from the rigid vertical structures that were suited to the unshared opportunities of monopolistic markets, and into far-reaching horizontal business models that cut across traditional operators' boundaries and are adapted to the shared opportunities of hypercompetitive markets. New business models must be built on a foundational set of capabilities powerful enough to differentiate them from competitors in the marketplace.

*Network guarantors* will focus on offering the infrastructure services needed for the rest of the industry to operate, building differentiated capabilities through scale, cost efficiency, and reliability.

*Business enablers* will offer open and reliable platforms and clouds to host and support an increasing number of

specialized service and application providers, and provide them with access to target customer segments. This will require the skills to partner with network guarantors and experience creators, the flexibility to create a wide range of modular enablement services, and the ability to aggregate a large base of connected customers.

*Experience creators* will focus on selected customer segments, and offer targeted applications, strong content, and a differentiated user experience. They will need to be highly innovative and dedicated to the specific needs of their target customers.

*Global multimarketeters* will be global in scale, operating one or more of the previous three models, in different geographies. As such, they must be capable of efficiently replicating business models and capabilities.

# A FRAGMENTING WORLD

Over the past decade, the telecom industry has helped to fuel the digital transformation of entire industries, economies, and societies. The rapid uptake of mobile communications, the increasing availability of broadband access, and, more recently, the development of smartphones and the widely popular mobile apps—all come thanks, in whole or in part, to the innovations and investments emanating from the telecom sector.

Now, however, the industry is experiencing a major aftershock following years of significant growth. This aftershock is forcing traditional operators to shift away from the rigid vertical structures that were so well suited to the unshared opportunities of the monopolistic markets of the past. Operators must build the next generation of high-speed fixed and mobile networks to keep up with customer demand and to take advantage of the ongoing digitization of virtually every other industry vertical. Doing so will require

massive investments, especially in fiber-based infrastructure, as will ongoing efforts to innovate and to make strategic investments to acquire new capabilities. At the same time, however, operators' traditional sources of revenues are becoming commoditized, and many continue to struggle to find new ones.

To meet all these demands, and to counter the competition arising from players outside the traditional scope of the industry—including Internet, technology, media, and even telecom equipment companies—operators must strive to build leaner, more adaptive, modular, multifaceted, and increasingly complex business models. And they must acquire the capabilities needed to ensure that these new business models can succeed, even as they continue to invest in next-generation fixed and mobile infrastructures.

Forward-looking business models must be based on a deep understanding of three overarching trends that are driving the industry into the future:

- *Customer ubiquity:* Consumers and businesses demand constant and universal access to digital applications and content.

- *Technology modularity:* Networks, services, and applications are rapidly evolving and shifting away from vertical integration toward modular, open systems.

- *Industry innovation:* Competitors in adjacent industries are transforming the boundaries of information and communications services and applications.

Each of these trends has critical implications for the future of the industry. Once operators understand these implications, they must select, design, and build the new business models—and their accompanying capabilities—needed to respond to and benefit from them. Operators that understand the need for new business models, and the capabilities needed to support those models, have a clear right to win in their chosen markets. They will be better prepared to make the leap from their traditional vertical structures into a future driven by ever more demanding customers, complex technology, and fragmented competition.

In the following sections, we examine each of the three trends and their implications, and then discuss in detail the four business models that operators can develop in response.

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## CONSUMER UBIQUITY

Consumers' habits, tastes, and patterns of consumption of communications services are undergoing major change. The more bandwidth and services that operators and providers of TV and other services offer in addition to existing networks, the more their customers consume, and the more they expect. This cycle is taking place among business users as well as consumers, and it is putting substantial pressure on operators to ramp up greater access and yet more new services. The explosion of demand for smartphones and their accompanying mobile apps is only the most visible indication of these changes, which have real implications not just for the kinds

of services that operators provide to their customers but also for their future sources of revenue and growth.

### **Always-On Digital Communications**

The telecom industry has brought about profound changes in the way people communicate within their "relationship circles," resulting in a considerable shift in social behavior. One of the first and most fundamental changes is the disappearance of distance—the significant changes in behavior brought about by the development of flat-rate packages that include international calls and by the widespread use of services such as Skype. Take the example of a young student who has left home to study abroad; she might open up Skype to "share" dinner and the evening with her parents back home, leaving the Skype connection on for hours. Another profound change involves the way people stay connected with their intimate circle while at work.

Connecting with friends and family during the workday was once a privilege available only to upper management. Now it has become ubiquitous and available to all.

Indeed, consumers of telecom services, whether for personal or business use, now expect to be connected everywhere, at any time, using any number of mobile and fixed technologies. The coming of age of Generation C marks the rise of computerized, connected, communicating, community-oriented, content-centric consumers that will completely transform the industry.<sup>1</sup> They will live their lives more and more through the devices they use to communicate, to shop, to consume, to create and share content (especially bandwidth-gobbling streaming video), and to interact with the remote corners of their world. This increase in demand is affecting fixed and mobile networks equally.

Already, almost half of 16- to 24-year-olds in Europe are savvy social network users,<sup>2</sup> and that number is growing rapidly. In the U.S., children ages 8 to 18 spend an average of seven hours and 38 minutes using entertainment media daily, up from six hours and 21 minutes five years ago.<sup>3</sup> Much of that increase is due to the consumption of media on new devices such as smartphones and

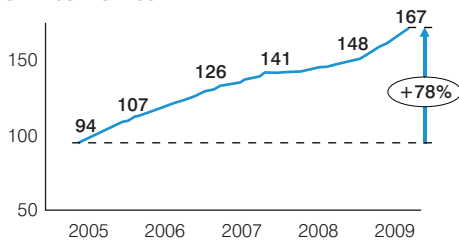
iPods. This new generation is also transforming its role as consumers. In its insistence on instant digital access to all manner of services, Generation C is defining the concept of “prosumers,” who increasingly expect to be seen as partners in the process of content production.

The coming demand will put huge burdens on operators’ current fixed

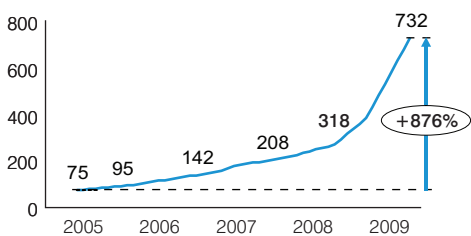
and mobile networks. Data already makes up the vast majority of network activity, much of it driven by video streaming on the Web, and it just keeps growing. Video streaming on the Web in the U.S., for example, has increased by a factor of 17 since 2005, a hefty 78 percent a year (see Exhibit 1).<sup>4</sup> Cisco Systems estimates that the total volume of data circulating on mobile networks will

**Exhibit 1**  
*Growth in Web Video Streaming in the U.S.*

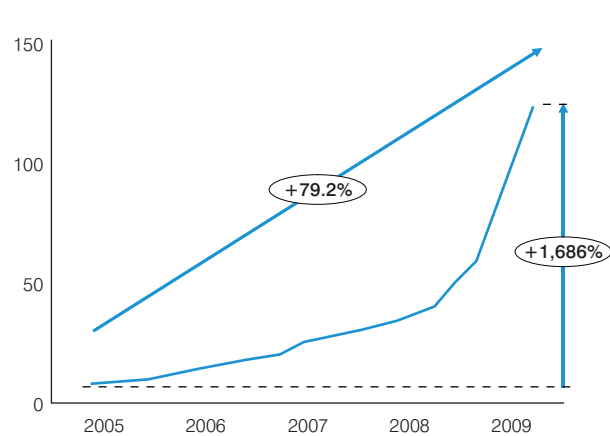
**MILLIONS OF UNIQUE USERS PER MONTH**  
JUNE '05-NOV '09



**AVERAGE MINUTES OF VIDEO PER USER PER MONTH**  
JUNE '05-NOV '09



**TOTAL STREAMING CONSUMPTION PER MONTH**  
JUNE '05-NOV '09 (IN BILLIONS OF MINUTES)



Note: Monthly data available was interpolated.  
Source: Comscore; Booz & Company analysis

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grow from 0.09 exabytes (90 million gigabytes) per month in 2009 to 3.6 exabytes in 2014, roughly doubling every year.<sup>5</sup> Fixed networks are facing a similar trend, with traffic expected to increase from 14.8 exabytes per month in 2009 to 60.4 exabytes per month in 2014.

#### **Digitizing Industries**

In the same way that telecom has brought about fundamental changes in the way people communicate with their friends and family, we are starting to see major transformations in how businesses operate, brought about through the digitization of entire industries.

Consumers' expectations for ubiquitous connectivity are also having an impact on companies

in virtually every industry, as well as on government entities. These organizations are coming to realize that advances in information and communication technology (ICT) can help them better reach their customers and constituents, better understand their needs, and devise products and services accordingly. At the same time, myriad new machines are being connected to networks: cars, parts, and goods flowing through supply chains; medical sensing devices; and the like. Machine-to-machine (M2M) communication is expected to grow exponentially, reaching 348 million connected devices by 2014—a 400 percent increase over the 68 million connected devices in 2009.<sup>6</sup> Meanwhile, makers of smartphones are continuously integrating new features—cameras, GPS chips,

and RFID, for instance. These developments are allowing businesses and entrepreneurs to create entirely new processes, even new business models. We are at the very beginning of the changes this will bring about.

Numerous industries have felt the effects of digitization and constant connectivity. The media sector has been profoundly transformed by the rise of online advertising, and IPTV will have a similar effect in the coming years. Retail and financial services, too, have been changed by the disruptions created by digitization, with more to follow. Now other industries, including healthcare, travel, energy, utilities, and education, are beginning to experience the same phenomenon.

*Numerous industries have felt the effects of digitization and constant connectivity.*

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Yet these organizations have neither the expertise nor the desire to deal with the rapidly increasing complexity of systems and infrastructures. And this, in turn, presents telecom operators with a significant opportunity to provide the tools and services these organizations will need. Software as a service (SaaS), for instance, will become an increasingly common way to deliver a wide variety of industry-specific solutions to businesses, and operators are in position to facilitate these efforts. Similarly, as organizations look outside their walls for providers of IT infrastructure technology, operators should be looking to develop the cloud computing systems that will allow them to participate in this growing market.

#### **Universal Applications**

Mobile apps—the hundreds of thousands of services large and small being made available on smartphones and other devices everywhere—have already proven to be immensely popular. Consumers and business users alike are using them in virtually every imaginable context—for entertainment, for information, and to boost productivity. Their popularity has unleashed a huge burst of innovation on the part of application developers and the companies providing them—not just Apple and Google, but even the traditional telecom operators that are now trying to get into the game. And the game is becoming well worth playing: By 2014, the mobile app business is expected to generate \$40 billion in revenue.<sup>7</sup>

Operators looking to enter this market to any significant degree are facing a difficult task. They will need to accurately assess the scope of the opportunity to ensure that they are targeting the right consumers, and then try to achieve scale. This challenge is exacerbated by the fact that the innovation necessary in developing new applications and services has never been part of operators' DNA. Meanwhile, significant portions of this opportunity have already been siphoned off by other players—Apple's huge lead in the smartphone app business is a case in point. And this business is likely to move, for the most part, to a cloud computing model, in which all manner of apps and services will be offered instantly, from inside the cloud, to a multitude of wireless and fixed end-user devices.

*Operators looking to enter the app market to any significant degree are facing a difficult task.*

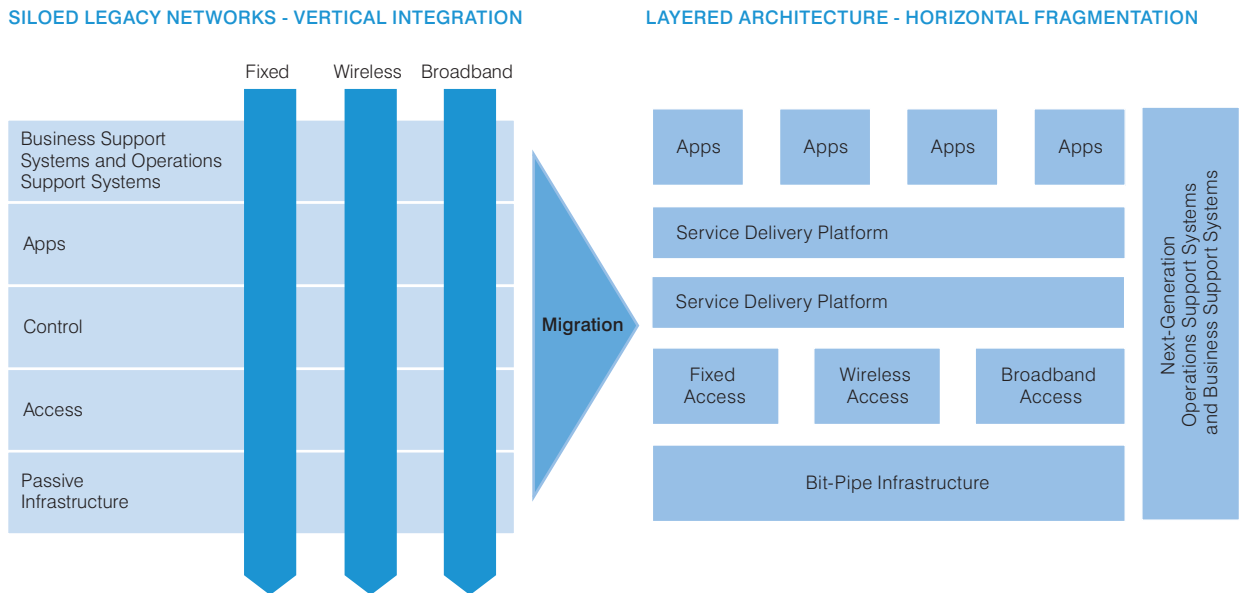
# TECHNOLOGY MODULARITY

The telecom industry has long depended on highly integrated technologies to run its networks and other operations. Now, however, the technologies necessary both to run present operations and to drive future growth—not just the networks themselves but also the application and service platforms—are separating from one another and becoming more open and more modular. And now, parts of the entire system can be built not just by operators but by a variety of non-industry rivals as they try to gain a share of future revenues (see Exhibit 2).

This trend has implications for operators at every infrastructure level. The rise of national high-

speed broadband networks and fixed–mobile convergence trends will enable the development of differentiated layers of infrastructure, triggering a migration from siloed networks to layered architecture. The underlying layer of passive infrastructure itself will separate from the application and service layers, becoming in essence a utility, which operators can monetize by serving various access networks. Different access networks (e.g., fixed, wireless, and broadband) will serve end-users, delivering the required ubiquitous connectivity. They will differentiate themselves through quality of service, based on active infrastructure capabilities; a migration to access-agnostic networks is also under way, with

**Exhibit 2**  
From Siloed Networks to an All-IP Layered Architecture



Source: Booz & Company

increased convergence offerings between different access types. In a layered architecture environment, service delivery platforms play an increasingly important role as they offer sophisticated control and management of services and offer differentiated and customized service delivery to end-users. These developments will give rise to a dedicated application layer that will let operators build their own high-margin application businesses and sell high-margin access to providers—but will also allow new players from adjacent industries to compete in the space. Finally, next-generation operations and business support systems will vertically serve all architecture layers, offering customized billing, mediation, and customer support. Ultimately, this trend will create an environment in which entirely separate companies can operate at each layer.

#### **21st-Century Digital Highways**

The need for near-universal high-speed broadband networks is clear, given their proven role in promoting economic growth, labor productivity, and innovation. Yet

even the most highly developed markets and countries are struggling to connect everyone. Building the digital highways needed in the coming decade will require massive investment, most likely with the support of national governments. Even with government contribution, however, it is uncertain whether these investments will pay off. And the regulatory environment in many markets is not yet conducive to helping operators make a good business case for these investments, which adds to the uncertainty.

Given these considerations, we expect that many countries will urge local operators to develop new business models to spread the risk of making these massive investments, while in some markets, operators will take the initiative themselves.<sup>8</sup> One such model would have operators in individual markets band together in consortia or cooperate with utilities to build out a passive layer of broadband infrastructure that is open to all players in the local markets. This kind of network has been proposed for Italy by a consortium consisting of Fastweb,

Vodafone, and Wind, with the goal of providing direct access to the home. Alternatively, a separate company could be launched to take on the task of network construction; it would be given near-monopoly powers by local governments and would then sell access to operators, as is already happening in Singapore and Australia.

#### **From Pipes to Applications**

Every operator has seen the revenues it derives from its traditional businesses level off. But the evolution of technology has created an application layer that in turn has enabled the modularity of applications. Now anyone can develop apps, put them on a platform, and bring them to market. Thus, thousands of app developers can now have their place in the value chain. Indeed, an Estonian company is currently the second largest developer of applications for Apple.

The rush of new developers into this space constitutes a significant challenge to operators, as everyone struggles for publicity and market share. Most operators, especially

*Building the digital highways needed in the coming decade will require massive investment.*

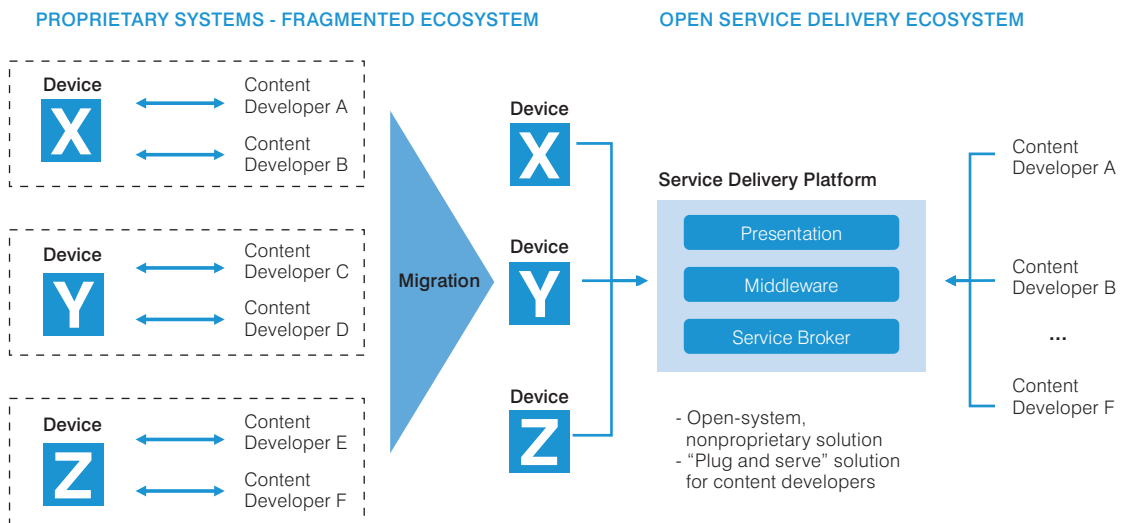
Tier Two and Three challengers, do not have the necessary scale and efficiency to compete in developing a bit-pipe play. However, they do have strong and appealing brands, and they have their own subscriber bases, which they can leverage to provide users with a gateway to the app world. Operators can also create a competitive advantage by monetizing these assets with the launch of highly customized content and applications.

**Open System of Service Delivery**  
Both applications and service

offerings such as on-demand movies and gaming will likely be based on systems that will essentially be independent of the infrastructure through which they are accessed. Currently, access to content and applications is predominantly linked to specific device manufacturers' app stores, creating a fragmented ecosystem. Open service delivery platforms will allow end-users to connect to a variety of different content providers, with no device- or software-specific restrictions (see Exhibit 3).

This service delivery platform will allow application developers and service providers access to the security services, maintenance and support, billing services, and customer data that they will require to operate in this space. This structure will arise both because advances in technology allow it and because regulators will demand it as part of a trade-off to support the operators' efforts to build new high-speed infrastructure.

*Exhibit 3*  
*The Industry Will Move from Fragmented to Open-System Service Delivery*



Source: Booz & Company

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## INDUSTRY INNOVATION

No one questions the rate at which the telecom industry is changing. Innovation once took place at the infrastructure level, and thus could be controlled by the vertically integrated businesses that operated the networks. As a result, operators focused on protecting this core business rather than on experimenting with smaller initiatives. Now, however, they are victims of their past success, as rapid advances in all kinds of information and communication technologies—everything from high-speed broadband to smartphones to new applications and services—require entrepreneurial efforts on the part of every player in the industry. Competitors from outside the industry are leading the change, as Internet players, high-tech and IT

companies, device manufacturers, application and service providers, and media companies infringe on what could be revenue opportunities for telecom operators. The extent to which just two companies—Apple and Google—have changed telecom’s competitive landscape is unprecedented. Who are these innovators, and how are they transforming the telecom industry?

*Internet players:* A host of highly innovative companies has arisen over the past decade. Companies such as Skype are determined to capture their fair share of telecom network traffic by routing calls over the Internet and thus bypassing the operators. Indeed, by 2017, VoIP is expected to capture 26 percent of total voice traffic and revenues.

*Competitors from outside the industry are infringing on potential revenue opportunities for telecom operators.*

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Web 2.0 players represent a threat to telecom operators on two fronts: They form relationships with advertisers that might otherwise have turned to mobile advertising, and they encourage consumers to communicate via Facebook message or Twitter post rather than an SMS message on their phone. Internet retailers, too, have the potential to undermine customer relationships by making forays into mobile payment. Of course, the true elephant in the room is Google, whose avowed goal to digitize everything has already had a broad effect on the telecom industry.

*High-tech and IT companies:* Among the many opportunities arising out of the expansion of broadband access, technology

offerings like cloud computing, various forms of SaaS, and M2M solutions rank high in potential value. Already, a number of technology companies are looking to profit from these new offerings. The giant IT service providers—including IBM, Oracle, and Hewlett-Packard—as well as nontraditional players such as Amazon and, of course, Google have already staked out large sections of this territory. And developers of mobile operating systems such as Microsoft and Google have succeeded in carving out significant portions of the service business as well. The relationship between telecom operators and these players is complex, however, as many operators are likely to need partnerships with high-tech and IT players for new service offerings.

For example, T-Mobile USA's T-M2M group is focused exclusively on M2M opportunities and on working closely with providers of hosting services. In the Middle East, Etisalat has a memorandum of understanding with Pacific Controls to work together toward offering M2M applications and support to Etisalat's clients.

*Device manufacturers:* The advent of true wireless broadband has opened up a huge market for smartphones, giving manufacturers the opportunity to create entire ecosystems around these devices. With its iPhone, Apple has been the overwhelming early leader in the field, and it has captured most of the app market as well, through its App Store. Similarly, BlackBerry devices

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have been widely adopted globally, by appealing primarily to enterprise users. But others, most notably Google (this time with its Android OS), are working hard to catch up. Smartphone sales are expected to grow 23 percent annually through 2014, when they will represent 37 percent of total handset shipment, compared with 16 percent in 2009.

*Application and service providers:* The market for applications that has developed around smartphones has exploded in record time, with Apple now offering upward of 300,000 apps, and other players racing to catch up. But the current ecosystem of highly customized applications has created a very fragmented marketplace. In response to that fragmentation and to the competitive

threat posed by the early leaders in this market, a number of the world's leading telecom operators and device manufacturers (including Deutsche Telekom, NTT, Orascom, Telecom Italia, Vodafone, LG, Samsung, and Sony Ericsson) recently launched an open global alliance, called the Wholesale Applications Community (WAC). Its objective is to establish a simple route to market for developers and to provide access to the latest range of innovative applications and services to as many customers as possible worldwide.

*Media companies:* Players in the content sphere, too, are looking to capture portions of the telecom value chain. Their primary challenge to operators lies in capturing selective slices of the telecom market by

offering consumers both broadly popular and highly customized content and equally targeted fixed and mobile advertising, and they have the capabilities to create the offerings needed. For instance, Virgin Mobile uses its parent company's media arm (Virgin Media) to provide customized content and advertisements. BSkyB in the U.K. is another example of an integrated company that makes use of its traditional media presence (Sky TV) for broadband offerings and applications. Additionally, all the major traditional TV stations have launched websites that offer some of their terrestrial programs in digital format, along with interactive features for their viewers.

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## DEFINING AND REPLICATING NEW BUSINESS MODELS

The three primary trends above focus on how consumer demand, new technologies, and competitive innovation will shape the future of the telecom industry, and it is up to operators to respond. Clearly, they must move away from the vertically integrated business models of the past, in which they built and owned the network and then stacked additional services on top. As markets open up and commoditize operators' infrastructure layers, the industry as a whole must relearn how to take advantage of new technologies to keep old customers and gain new ones, and counter the threats coming from adjacent industries.

The changes this will bring to the telecom industry will no doubt be transformative for every operator, not just the large incumbent operators but also the Tier Two and Three players, in both developed and developing markets. Ultimately, forward-looking operators have much to gain in this future—if they understand the implications of these changes and pursue the strategies that will best enable them to succeed.

Operators must rethink the requirements needed to succeed across their entire value chain. At the infrastructure level, they must be able to build and efficiently operate highly scalable, integrated fixed and mobile networks that offer high quality and reliability, while generating an effective response to changes in regulation. They must build and operate open and reliable service platforms through which they can offer third-party application and service providers access to large, aggregated customer bases. The success of their offerings will depend on the depth of their customer segmentation and insights, which should allow them to offer their customers the right experience, including ubiquitous connectivity, tailored digital applications, and the ability both to consume content and to produce their own. Given the trend toward increasing globalization, operators must put in place effective ways of managing portfolios of services, developing synergies throughout their offerings, creating strong planning and governance functions, and replicating their business models in markets across the globe.

*Operators must rethink the requirements needed to succeed across their entire value chain.*

Given these many different requirements, it would be very difficult for operators to define a clear focus and build related differentiated capabilities under the auspices of their current vertical structures. Different market segments are emerging, together with new products and services, and they demand different value creation

drivers. To develop them will require new investment strategies and new capabilities—and quickly, given the fast-moving competition arising from adjacent industries.

Based on the underlying trends that are shaping consumers' and enterprises' behavior, the competitive landscape, and telecom

operators' current positioning along the industry value chain, we have identified four distinct business models that will shape the future of telecom operators (*see Exhibit 4*). Each model focuses on a different market segment, shaped by various value creation drivers; each presents a differentiated service offering and requires distinctive capabilities.

**Exhibit 4**  
*Operators Can Choose Their Strategic Plays Based on One or More Business Models*

	1	2	3	4
	Network Guarantor	Business Enabler	Experience Creator	Global Multimarketer
Market Segment Focus	- Business enablers	- Application and content providers - Mass-market and business connectivity	- Micro segmented consumers and digitizing enterprises	- Multiple segments - Multiple geographies
Value Creation Drivers	- Ability to build a highly scalable, integrated infrastructure - Operational efficiency and network/service quality - Policy/regulation influence	- Gateway to large customer base - Agility in servicing application providers	- Depth of customer segmentation and insights - Ability to offer the right customer experience	- Effective synergies and portfolio management - Effective governance and planning - Ability to replicate differentiating capabilities
Service Offerings	- Widely available and open infrastructure - Cost-efficient, timely, and reliable services	- Ubiquitous connectivity - Flexible enablement services - Open and reliable platforms and clouds	- Tailored digital applications ubiquitously accessed - Connectivity as part of experience-oriented offering - Enabling users to produce and consume content	- Any of the three other offerings
Competitive Dynamics	- Advantage for incumbent operators	- Advantage for modern wholesalers and system integrators	- Advantage for new agile "over the top" players - Fast-moving competition	- Advantage for already established global operators and Internet players - Complexity of synergies extraction and cross-border competitiveness building
Capabilities	- Efficiency (planning, provisioning, operations) - Quality (network reliability, quality service levels)	- Partnership (content and network providers) - Flexibility (service customization) - Aggregation (customer base and service providers)	- Innovation (product offering and service delivery) - Dedication (customer segments and needs)	- Globalization (geographies, market development) - Replicability (success factors)

Source: Booz & Company

Each model focuses primarily on specific segments of the value chain, leveraging operators' competitive advantages and ensuring a strong and solid position in their respective markets (see Exhibit 5).

In order to ensure focus and coherence, operators must evolve toward one or more of the four models; the model or models each operator chooses will depend on its current position in the value chain, including the strength of its infrastructure, its existing product offerings, its customers, its markets, and its operational and managerial skills.

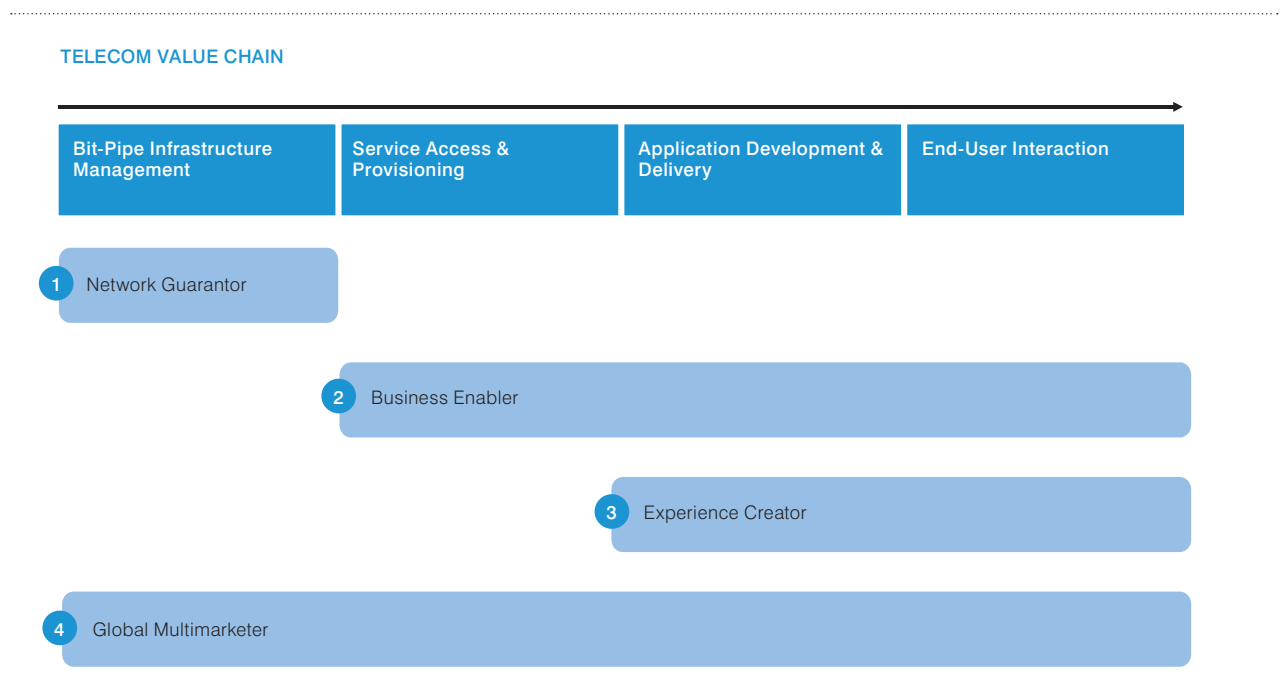
Each business model must be built on a particular capabilities system. A capability is more than

an activity or a function; instead, it's the alignment of a company's talent, knowledge, IT, tools, and processes around something that it can consistently do better than its competitors in a particular market. In turn, those capabilities must be carefully aligned with the proper mix of products and services, the value creation drivers that underpin profitability, and the competitive dynamics of the chosen market. When pursued properly, that combination gives the operator the right to win in that market.

Given the current dynamics of the telecom industry, total service revenues will increase over the next five years, due both to market growth and to the addition of

new applications and services. We can therefore expect value to shift from infrastructure providers (the network guarantor model) to business enablers and experience creators. We expect the latter to experience the highest growth, as demand for innovative and customized applications and content will increase significantly in the coming years. The global multimarketer model can be considered in conjunction with each of the other three; it relies on the operator's geographic scale and scope to replicate successful models in various markets—i.e., duplicating those models with the appropriate adjustments for market conditions.

**Exhibit 5**  
*Each Model Covers Distinct Parts of the Value Chain*



Source: Booz & Company

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## MODEL 1: NETWORK GUARANTOR

Infrastructure has long been the backbone of the telecom industry, but that backbone is now being rapidly commoditized. Under these conditions, operators that already have advanced network infrastructures, or the wherewithal to build them, should consider developing the network guarantor business model, which is designed to take advantage of the trend toward commoditization. In this model, operators use their network assets to generate increased revenue and profitability by efficiently providing widely available and open infrastructure and timely, reliable, cost-efficient services. Their primary customers are companies operating under the business enabler model, which can leverage the infrastructure

to offer more advanced services to their own customers—application and content providers, and consumer and business connectivity customers.

Network guarantors must ensure that they have three value drivers that will enable them to compete. They must have the ability to build a highly scalable, integrated infrastructure over which they can guarantee the quality and reliability of their service. Their operations must be run as efficiently as possible, given that profitability will depend greatly on reducing costs. And they must have an effective governmental affairs function that can influence policy and regulation.

The primary capabilities that network guarantors need will ensure network excellence and low cost—the most significant competitive differentiators for this business model.

*Efficiency:* At every stage of their operations, from infrastructure planning to network provisioning, network guarantors must be as efficient as possible; the low-cost player will have a significant

advantage. The efficient operator will also benefit through economies of scale and the ability to integrate its fixed and mobile infrastructures.

*Quality:* The infrastructure on which the network guarantor's business model depends must be as reliable as possible, offering both high quality of service and robust connectivity. The entire telecom industry depends on the reliability of the underlying infrastructure; network guarantors must offer service-level agreements that their business enabler customers can trust.

The infrastructure sector moves slowly: It takes years and huge amounts of capital to build large-scale networks, and while the risks are low, the return on investment is also low. Thus, incumbent operators that choose to pursue the network guarantor model—and many of them clearly should—will have a built-in advantage through the infrastructures they already control. Several incumbents, including BT, Telecom Italia, Telekom Malaysia, and TeliaSonera, are already moving in this direction.

## MODEL 2: BUSINESS ENABLER

ICT companies are looking for new ways to benefit from widespread high-speed broadband, and new application and service providers are coming into being. This combination presents a significant opportunity for telecom operators to serve as the intermediary between these companies and their own consumer and business customers. The business enabler offers service providers access to other service businesses and their end customers, providing them with flexible enablement services such as wholesale broadband, managed services, transaction and billing support, and platforms such as hosting and cloud computing, while continuing to provide their own end customers with the broadband services they need. This “double-sided” business model has the virtue of enabling operators to leverage their assets on both sides of the ICT equation, a significant growth opportunity.

Taking on this role, however, is a challenge. The value drivers that business enablers will need include

the ability to aggregate a critical mass of customers they can then offer to their other customers. They must develop a high degree of agility in innovating and providing the services needed by those customers—other ICT companies and service providers—to manage their relationships with their own customers. And they will need to build strong relationships with players on both sides of their business model. Therefore, business enablers must concentrate on three capabilities:

*Partnership:* Because this model depends in large part on aggregating customers from a variety of network providers, and on using their infrastructure, business enablers must have mechanisms in place for initiating, assessing, and handling the partnership process effectively. This is also true with the partnership deals they make with their own customers—the application and service providers—on the other side of the business model.

*Flexibility:* Given the need to support a variety of customers large and small with integrated packages of offerings, business enablers must be flexible in their willingness and ability to create any number of modular services, from cloud-based hosting to billing and transaction support, and to meet customers’ specific business needs.

*Aggregation:* Business enablers must be able to aggregate a large customer base as well as a large base of service providers. Without enough of either, they will not be able to generate a business with sufficient market clout to keep growing.

The business enabler model is already arising in numerous markets, with competition from players outside the industry on the rise. Still, current network wholesalers and system integrators will have the advantage in creating this model. The Spanish multinational Telefónica is currently testing a cloud-computing service intended to host enterprise data and services while continuing to provide telecommunications services to its subscriber base and an emerging market of small and medium-sized enterprises. China Mobile recently acquired a significant stake in one of that country’s leading banks, seeking to capitalize on the substantial opportunity in mobile payments and to serve millions of its subscribers as well as the enterprise segment. Deutsche Telekom’s updated strategy entails expanding the company along the entire value chain and positioning itself as an open partner for other sectors, such as energy, software, and media. Operators entering this arena can expect to have to make investments for the medium term, with a fair degree of risk and the potential for significant payoff.

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## MODEL 3: EXPERIENCE CREATOR

Consumers' thirst for new applications and services already appears insatiable—especially among younger consumers whose lives are increasingly spent in the digital realm. At the same time, companies in any number of industries are looking for support in their efforts to digitize their businesses and bring to their own customers the benefits of all the new information and communication technology being developed. Experience creators will look to take advantage of this growing market by moving up the telecom value chain and providing end-users—consumers and business customers alike—with

the ubiquitous connectivity they demand, with targeted applications, fresh content, and a distinctive experience, and with the ability to create and distribute their own content.

This effort will depend heavily on several critical value drivers, including the depth of the experience creators' customer knowledge and segmentation skills, and the development of technologies that offer users a seamless telecom experience across all types of networks and devices. It will take operators far out of their comfort zone and into an arena that has

*Innovation and a deep dedication to customer needs will be critical for experience creators.*

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long been the playing field of media, gaming, and software companies, where creativity and innovation matter most. Still, the rewards are significant—not just in potential future revenue, but also in increased customer loyalty, higher ARPUs, and reduced churn.

Innovation and a deep dedication to customer needs in the development of new apps and services will be key capabilities for operators wishing to pursue the role of experience creator. And they must develop the converged fixed and mobile infrastructures necessary to satisfy customer demands for always-on connectivity.

*Innovation:* Services, and especially apps and content, have never been at the heart of operators' strengths. In order to create the content and services needed to thrive, experience creators will need to develop a variety of new skills—most of all,

the ability to innovate and a new corporate culture that promotes that capability.

*Dedication:* Experience creators will need to determine successful strategies for developing attractive apps, services, and content, along with the best ways of selling them to users. Success in this essentially unfamiliar space will require a powerful degree of dedication to and focus on the customer experience, a deep understanding of the needs of consumer segments, and the ability to manage a wide range of content and applications on numerous devices.

To build a successful experience creator business, an operator must be able to aggregate content valued by customers and businesses, primarily through partnerships with content providers and other aggregators, and to develop apps and other services. At the same

time, it is critical to achieve the proper balance between monetizing traditional services and pushing new applications, as there is a risk of cannibalizing traditional revenues by focusing on apps and services too quickly. And experience creators must establish their optimal revenue model—free, ad-based, or service-funded—depending on the content and applications offered.

Already, the recent collaborative effort on the part of top operators and handset manufacturers to create the WAC demonstrates a high degree of awareness of the opportunity. But the early competitive advantage among experience creators will go to agile new players, such as Apple and Google, that can outpace the fast-moving competition and have the scale to offer customers a truly rewarding experience. Players must be willing to make risky, short-term investments, with the expectation of excellent returns.

## MODEL 4: GLOBAL MULTIMARKETER

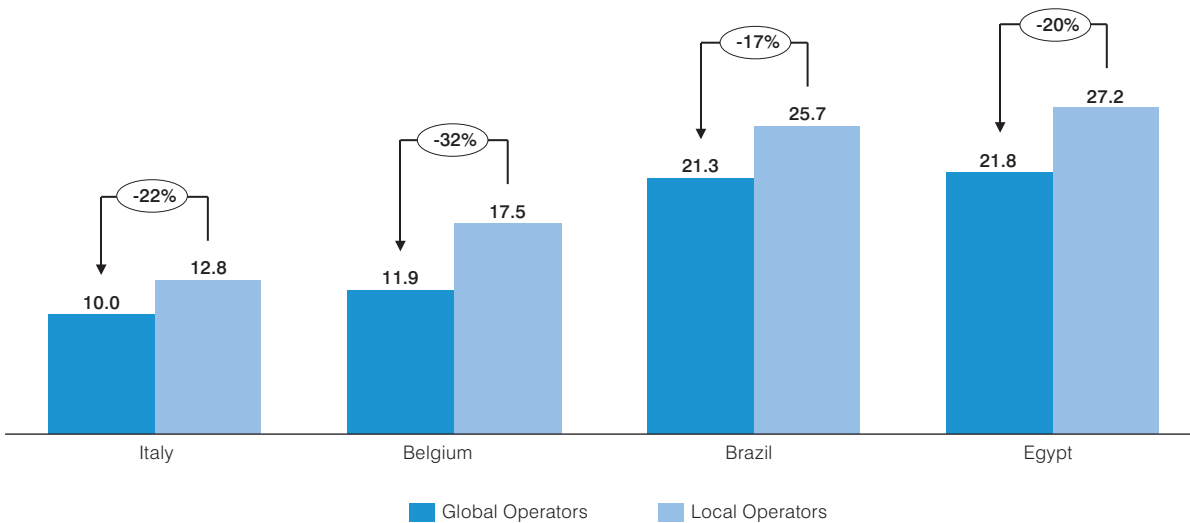
Each of the three business models discussed above offers operators a way to compete in increasingly fragmented telecom markets. To extend the gains made in one market by replicating the model in other markets, there is yet a fourth

business model that operators should consider—especially if they already have significant scale and scope, as well as operations beyond single markets or regions. This model, the global multimarketer, offers a path for operators to make the leap to becoming truly global entities. Thanks to their inherent strengths in branding, efficiencies, and reach, global operators are proving stronger than their local rivals: Already, more than 75 percent of telecom subscribers in regions such as Europe and the Middle East are owned by global operators.

True global multimarketers—operators that can create two or three of the above business models in a modular fashion and then deploy them as required to multiple customer segments in multiple markets around the world—will gain a huge competitive advantage over their regional rivals. And they can benefit further because of the cost savings available through sheer scale. These effects are already evident in the lead that a select group of global operators have gained in some specific markets in the efficiency of their capital expenditures (*see Exhibit 6*).

*Exhibit 6*  
*Global Operators Can Be More Efficient Than Local Competitors*

COMPARISON OF CAPEX EFFICIENCY - GLOBAL VS. LOCAL MARKET OPERATORS  
2004-2009 (PERCENTAGE OF CAPEX TO REVENUE)



Note: Analysis is based on the four leading global operators in terms of international revenue.  
Source: Booz & Company

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Yet the challenges of being all things to all people are many, and they will require the successful global multimarketer to understand the value drivers underlying its business. The sheer complexity involved in combining various aspects of all three of the business models described above, offering a vast range of services to customers in very different markets, is immense. Global multimarketers must institute highly developed portfolio management, governance and organizational skills, the ability to replicate differentiating capabilities throughout their large footprint, and the ability to manage talent that can work effectively on a global basis.

If the goal is to extend a variety of models into numerous new markets, then global multimarketers will need the capabilities required of the business models to be developed, as well as several new capabilities critical to success on a global scale. Those global capabilities are premised on the need to operate

across a wide range of market maturities by building capabilities in each market, by developing the skills to manage a complex portfolio of markets, and by establishing shared-service platform efficiencies across markets.

*Globalization:* The goal of the multimarketer is to become global in reach. That will require a variety of capabilities: organizing across many different geographies; marketing successfully throughout these very different areas; operating efficiently and creatively at the infrastructure, application, and service layers; offering attractive devices suitable to many markets; and operating both locally and globally at the same time. This will require the flexibility to operate differently in different markets, and the ability to create efficiencies through the sharing of basic operational services across markets.

*Replicability:* Clearly, the effort to manage telecom operations on

a global basis while replicating a variety of business models across many markets will require powerful management skills and the ability to handle complex operations. Global multimarketers must learn from other industries, such as manufacturing, how best to ensure that adding platforms and expanding services will not simply increase the costs of added complexity.

Operators that are already global in reach, such as Etisalat, Orange, SingTel, and Vodafone, clearly have the early competitive advantage in this model, as they will already have had some experience in generating synergies across complex footprints and competing across international borders. But to succeed, they must develop a playlist that allows them to compete using any of the business models discussed above, throughout their portfolio of markets, while avoiding the creation of a collection of heterogeneous market offerings within an unbalanced and fragmented overall footprint.

*Global multimarketers will need new capabilities critical to success on a global scale.*

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## WHERE TO PLAY

Given the major transformation overtaking the telecom industry, every operator must choose among the four business models discussed above if it is to develop a way to play in its various markets, and ultimately have the right to win. Not all models, however, are suitable for every current operator. Rather, it depends on each operator's markets and customers, and its relative power within those markets.

The network guarantor model is particularly suited to incumbent operators that already run large-scale infrastructures, both in their home markets and in emerging markets where their technological experience gives them a competitive advantage.

Smaller Tier One operators in less developed markets might also consider this model, particularly if they can gain a foothold and then move up the value chain, or partner with larger incumbents; however, they may not be able to sustain this model in the face of competition from larger operators.

The business enabler model is best suited to developed telecom markets, where service-based competition is already well developed and there are a large number of ICT service providers seeking hosting services. Incumbent operators are in a strong position in this area, as are other operators with advanced wholesale capabilities in maturing markets. Tier One operators in developing markets also might consider this approach, especially as their markets mature.

Virtually all operators—incumbents, Tier Two players, and new

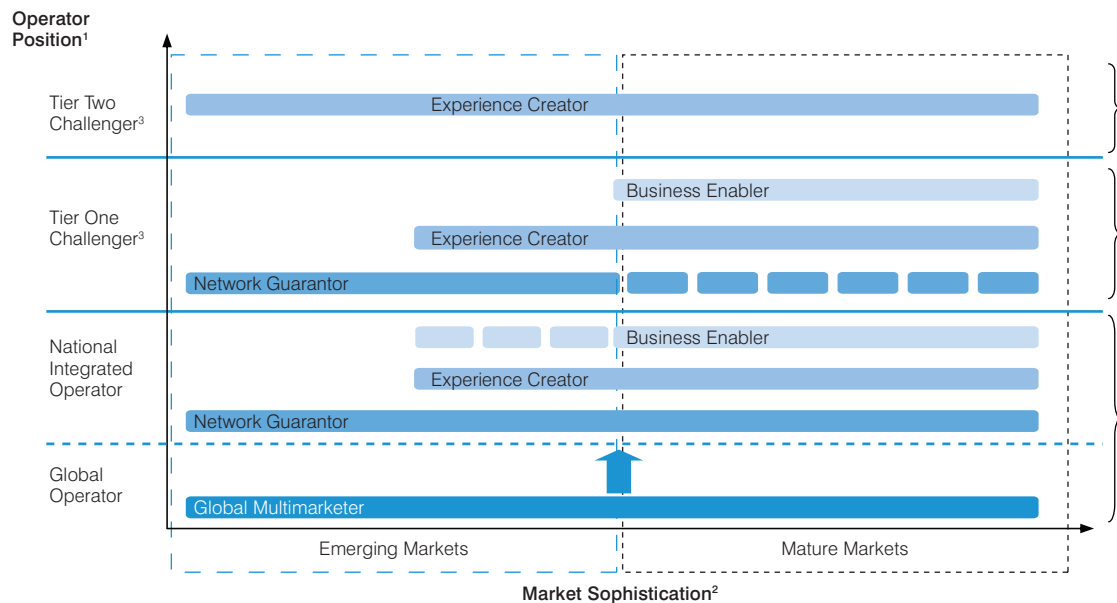
challengers alike—have the opportunity to implement the experience creator model, as it does not require the ownership of extensive infrastructure. However, it will require that they develop the capabilities to succeed in an area that has not in the past come naturally to them. The culture of innovation and the dedication to customers that are required will be difficult for many to develop but are absolutely critical for success as an experience creator. Some may even find it necessary to create entirely separate new enterprises, with their own separate cultures, to support this model. The model is best suited to developed markets, where customer demand is highest and both networks and devices are already sufficiently advanced. Still, the opportunity is growing in developing markets as well, and smart operators are already offering apps and other services for non-smart phones.

Most existing multimarketers that do not have the breadth of offerings to sustain the global multimarketer model will need to review their portfolios and refocus their businesses along one or more of the other three business models.

Meanwhile, Tier Two challengers in emerging markets face a particularly difficult competitive struggle. Most such companies are currently operating as service providers such as MVNOs and do not have the scale to build competitive strength

quickly. While some may be able to move toward the business enabler model, most should consider building up their capabilities as experience creators (*see Exhibit 7*).

**Exhibit 7**  
*The Appropriate Business Models Depend on the Operator's Orientation and the Market's Sophistication*



<sup>1</sup> Operators' market positioning, commercial and operational capabilities, and network reach.  
<sup>2</sup> Country's ICT maturity, end-users' sophistication, and enabling business environment.  
<sup>3</sup> Tier One = established national second or third player; Tier Two = service/application provider, MVNO.  
 Source: Booz & Company analysis

## CONCLUSION

The coming surges in consumer demand and in technological flexibility are working together to create a very different world for the telecom industry. It is a much flatter world, in which the traditional highly integrated, vertical technologies and operating models of the past are giving way to a plethora of new technologies, services, and devices. This far more open environment will enable all kinds of new competitors to enter the telecom arena, and it will force operators to make conscious strategic choices about the business models best suited to their customers and markets, and the capabilities they will need for those models to succeed.

Unless operators can develop these new business models, and the capabilities that underpin them, they face the very real possibility of losing out to more agile, innovative players that are quicker to understand how rapidly the sources of value in the industry are shifting. The experience creator model is expected to grow in value more quickly than the business enabler model, whereas the overall value of the network guarantors is expected to shrink, giving way to more innovative models. Operators must understand the underlying shifts in dynamics and value and strengthen their positioning along the value chain, capturing as much of the value created over the coming years as they can.

The ability to be creative—to rethink their processes, operations, and business models—has not

typically been part of the nature of most large telecom operators. But the only way operators can counter the numerous threats they face is by being creative: developing effective services, applications, and even content that can compete successfully in the marketplace, as well as the corporate DNA necessary to make these changes. This effort will require the ability to create new business models that can effectively respond to the rapid changes overtaking the telecom industry, along with the desire to create or improve the capabilities that will give operators the right to win in this new world.

Can the telecom industry restart its creative engine and begin to work to deflect some of the outside attacks on its increasingly vulnerable value chain? That will depend entirely on its willingness to come to terms with the threats that face it and to expand its innovation efforts beyond its current core strengths. And it has no choice, really. Not doing so will doom it to becoming a slow-growth provider of the pipes that other, more agile companies will use to pick off the telecom industry's most profitable customers.

Operators that understand the need to move away from their traditional vertical organizations and to develop one or more of these business models must ultimately transform themselves into one or another of the modular organizations described above, with the ability to replicate their capabilities and business models across different markets and customer segments. But building those capabilities and business models will take time. The winners will be those operators that are first to understand the need to make this transformation, and then move fast.

### Key Findings

- Demanding customers, emerging technologies, and new competitors are transforming the environment in which operators do business.
- Telecom operators must develop new, differentiated business models in order to compete and win in an increasingly challenging business environment.
- Today's integrated vertical models are not adapted to the need to develop and combine the capabilities that will give telecom operators the right to win in the future.
- Operators must break out of their traditional mind-sets and evolve to new business models that cut across traditional operators' boundaries and are adapted to the shared opportunities of hypercompetitive markets.

## Endnotes

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