The Future of Telecommunications

As Wireless Earnings Wane, Carriers Confront Hard Choices

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Since deregulation in the 1980s and the emergence of the commercial Internet in the 1990s, the telecommunications industry has faced disruptions and premature reports of its untimely demise. But the challenges have never been greater than now.

The stock market has punished most large carriers while richly rewarding companies that compete with telcos. Since Google’s IPO in 2004, its market capitalization has risen to about $150 billion, while the value of most operators in developed markets has fallen. The U.S. telecom industry has lost more than 100,000 jobs in the past five years and more than 400,000 in the last decade. The decline in wireless average revenue per user (ARPU), which began in the United States in 2006, has since spread to most major operators.

Carriers are not standing still. They are rapidly reducing costs and trying to streamline operations. These moves are necessary but not sufficient. The world is spinning too rapidly for restructuring as usual—to keep working. Game-changing forces, such as cloud computing and “voice for free” services, are warping the industry. (See Exhibit 1.) Cloud computing, for example, exposes operators to competition from major IT players, while free voice services—led by Google, Skype, and others—threaten operators’ main source of revenue.

These trends are unforgiving. But, as Friedrich Nietzsche famously said, “That which does not kill us makes us stronger.”

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**Exhibit 1. Eight Trends Are Shaping the Telecom Industry**

- **TV anytime, anywhere**
  - Can operators access content and become credible competitors?
- **Mobile data services**
  - Can operators create mobile data ecosystems to capture new growth?
- **Voice for free**
  - How should operators respond to free voice services that threaten their business model?
- **Cloud computing**
  - How aggressively do operators want to move into IT services through the cloud?
- **Machine-to-machine connectivity**
  - Can operators capture high growth in this market through cooperation with many parties?
- **High-speed wireless**
  - When and how should operators upgrade to LTE wireless technology?
- **High-speed broadband**
  - Do operators have a strategy for offering fiber to the home to compete with cable?
- **Data explosion**
  - How best should operators deploy infrastructure, services, and devices to meet demand?

*Source: BCG analysis.*
As the successes of Google, Apple, and others demonstrate, tremendous opportunities abound in the broader technology and telecom space. But in order to capture them, carriers need to make hard choices about strategy and business models. Most of them, however, are suffering from the “curse of the conglomerate”: when their wireline business went into decline, they were able to turn first to wireless voice and then to wireless data; but now they have run out of businesses that can generate adequate returns. With no more cash cows left to milk, carriers must build new sources of competitive advantage.

There are several options. Some operators may choose to compete in global rather than national markets. Others may tap into global talent pools through offshoring, partnering, and outsourcing. A few may decide to create compelling new services and compete with some of the most innovative companies in the world. Others may limit themselves to best-in-class connectivity—becoming “smart pipes.” Many will have to make strategic acquisitions and divestments in order to adjust their footprint and their portfolio of skills and services, especially in Europe and India.

Making these choices requires more than tweaking yesterday’s strategy in favor of tomorrow’s opportunity. The days of five-year strategic plans have gone the way of the rotary phone. Carriers need the ability to react quickly to new patterns of customer behavior and new technological opportunities. They need adaptive strategies.

A Bipolar World

Three shifts have unleashed waves of both creativity and destruction in the telecom market. First, customer behavior is becoming more varied, as consumers take advantage of new features at their fingertips. A fixed-line telephone has one function; the iPhone, hundreds. Customers expect anywhere, anytime access to content. Second, deregulation—a perennial force—continues to exert downward pressure on prices. Finally, open standards and global platforms such as the Web have lowered barriers to entry and fueled an explosion in innovation and new services.

Signs of creativity are everywhere. Foursquare, for example, a location-based social-networking service, has captured the fascination of the mobile youth segment in a little more than a year. Hundreds of other services built on the pillars of communication, content, and community are competing for relevance and revenue. In Europe, Spotify customers can legally stream music to their mobile devices. Nokia is winning rural customers in India with its Life Tools collection of agricultural, educational, and entertainment services.

But destruction looms. Powered by the iPhone and similar products, the rise in mobile data traffic has helped disguise the deterioration in wireless voice traffic. But as the price of mobile data traffic declines—increasingly only pennies per megabyte, an order of magnitude less than it was just a few years ago—carriers will have nowhere to turn. Nor are the challenges limited to the consumer business. In the United States, cable companies are starting to win in the broadband and small- and medium-enterprise markets, too.

At the same time, the world is becoming bipolar. Consumers are trading up and trading down in telecom services, just as they are in consumer goods. Many are satisfied with simple and effective low-cost services. In France, Iliad has captured that market with a popular triple-play offer of video, broadband, and voice. Other consumers, however, are looking for sophisticated bundles of content and functionality that only a well-developed ecosystem can provide. There the iPhone and BlackBerry dominate.

Both high- and low-end businesses can be very successful. The stock market performance of Apple and Google, on the one hand, and Iliad, on the other, have all been in the top quarter of total shareholder return (TSR) over the past five years. In late May, powered by the success of the iPhone, Apple’s market capitalization exceeded that of Microsoft for the first time ever. Meanwhile, traditional operators are stuck in the middle or the bottom of the TSR pack.

Unfortunately, the no-frills market is attractive only to attackers such as Iliad or to established players outside their home market. Dutch operator KPN, for example, has successfully introduced no-frills mobile
offerings in Germany and Belgium. Within their home market, traditional carriers cannot profitably serve the low-cost segment without radically shrinking in size.

But creating an attractive and successful ecosystem is devilishly difficult. Traditional carriers are still in the early days of building such businesses—and can’t place all their bets on duplicating the success of a company like Apple. They need other options.

**Five Ways to Play the Telecom Breakup**

Because of the turmoil in telecom, the business model of traditional carriers is breaking apart. (See Exhibit 2.) Companies such as Google, Carphone Warehouse (a European retailer), and ReggeFiber (a Dutch builder of fiber-optic networks) are picking the most attractive cherries—everything from local network construction and operations to the global development of end-user services like Google’s YouTube.

In this deconstructed world, operators will need to be both selective and aggressive in building businesses out of the fragments of their former selves—selective because they cannot be all things to all customers, aggressive because time is a wasting asset.

Five strategic options are likely to emerge, of which operators can probably pursue two or three simultaneously. (See Exhibit 3.) All five strategies involve massive transformation and organizational strain. But doing nothing is not an option. As an observer of a different generation of change once wrote, “He not busy being born is busy dying.”

**One-Stop Shop for Customers.** Many customers, especially consumers and small and medium-size enterprises, are looking for trusted sources to help them sort through new services and products.

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**Exhibit 2. The Telecom Business Model Is Breaking Apart**

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<tr>
<th>The traditional telco model . . .</th>
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<td>[Diagram illustrating the transformation of the telecom business model from a traditional model to multiple models, focusing on different segments like content and communities, devices and local networks, end-user services and applications, platforms, networks, and data centers.](source: BCG analysis)</td>
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Operators could become their partner of choice. To play this role, they would need to understand the needs of these different segments and provide them with integrated offerings. In addition, they would have to considerably enhance their retail capabilities, learn from the best retailers, and reassess their retail footprint and channels. Carphone Warehouse and Best Buy, with its Geek Squad and other initiatives to aid customers, exemplify this approach.

**Best-Practice Network Operator.** Carriers could sell their network-operations capabilities to other operators. Bharti Airtel, for example, has turned to equipment maker Ericsson to manage parts of its mobile network in India, while BT and Tata Communications are outsourcing various aspects of international traffic to each other. These arrangements could serve as models for larger-scale developments that take advantage of scale, standardization, and offshore operations. Operators would need to accelerate their offshoring activities and become adept at managing an overseas workforce.

**Global End-User Service Provider.** Operators could develop global services, such as salesforce.com, a cloud-based customer-relationship-management (CRM) service. To pursue this approach, operators would need to target clearly defined customer segments and translate deep customer insight into great products and service. They would also have to achieve scale in research and development in order to have a strong innovation pipeline. Finally, they would need to develop a powerful global brand.

**Platform Provider.** Platform providers would supply specific functionalities to other companies. Amdocs Limited, for example, provides CRM, billing, and operations support for mobile operators, while Gracenote has created a database of artists, titles, and other music-related information that enables consumers to manage their digital collections. To pursue this model, carriers would need to develop efficient state-of-the-art global operations. (See the sidebar, “Going Machine to Machine,” for an example of a potentially attractive business for carriers involving machine-to-machine connectivity.)

**Network Developer.** Finally, operators could choose to build network infrastructure for other operators, as ReggeFiber is doing in the Netherlands. KPN has a minority stake in ReggeFiber. This model would require strong project-management skills and a knowledge of local markets and municipalities.
From Here to There

There is nothing magical about these five models. The telecom value chain can be chopped up in any number of ways. But it is important to recognize that the activities of traditional carriers are being pulled apart by centrifugal forces, and no executive can hold them together. It is time to recognize that carriers are collections of increasingly unrelated businesses: retail, carriage, access, services, content, and construction. Senior executives must answer four critical questions.

**Which business models will compensate for the destruction of our core business?** Carriers need to focus on those businesses that create value and excise those that do not. Value, however, is no longer synonymous with 40 percent margins. Those days are over—or at least not guaranteed. But operators can build businesses that will allow them to enter new geographic or customer markets and compensate for the inevitable shrinkage of their core business. (See Exhibit 4.)

Of course, building these new businesses will not be easy. For one thing, it’s impossible to “prove” which strategic option is the right one. Investors, employees, and regulators may have different views. Carriers will have to make choices on the basis of imperfect information and in the face of almost certain conflict with stakeholders.

**How can we introduce Silicon Valley–type development capability?** New business models require new skills and capabilities. Many of today’s most innovative services are developed at warp speed and exist in “perpetual beta” while developers work out kinks and collaborate with outside parties. This style is galaxies away from the inward-focused three-year development cycles of many operators.

**How can we benefit from the global availability of human capital?** Like all companies, carriers need to become more fluid and flexible in their management of human capital. Innovative companies draw heavily on the skills of a global workforce through partnerships, offshoring, and outsourcing. Operators, in contrast, are skilled at managing large hierarchical workforces.

**How can we embrace the imperatives of adaptive strategy?** Carriers must make fundamental choices about which businesses to enter and exit. That decision is the essence of strategy and is still relevant, but it is not sufficiently far-reaching. Carriers need a fundamentally different approach to strategy.

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**Going Machine to Machine**

M2M connectivity is a growing trend that plays to the strength of operators. Revenue from providing data connectivity between machines is expected to grow at a compound annual rate of 42 percent between 2009 and 2013 and become a $26 billion business, according to ABI Research.

The market is moving quickly. Device makers are starting to put 3G data cards into personal navigation devices, game consoles, and other products. Other companies are exploring M2M as a way to track inventory of heavy machinery, transmit medical images, and facilitate diagnoses.

The opportunity for operators is potentially huge. An M2M data card could generate an average of $50 annually by 2013—a sizable sum given the relatively low connectivity requirements of most M2M applications and the predicted average household ownership of five such cards in the next several years.

Operators can play these developments in two ways. First, they can leverage their own network and development capabilities to create an M2M platform. This approach closely resembles the strategic option of becoming a best-practice network operator.

The alternative (or additional) option is to become something closer to a global M2M ecosystem developer, providing integration services. Global consumer-electronics companies, for example, would like to see the equivalent of a global data card, which would allow them to offer M2M products without modifying their devices for each national market. This would require offering data card provisioning, billing, reporting, and other services on a global or pan-European basis to device makers. Jasper Wireless, based in California, is in this business. Operators have a good chance of dominating as M2M integration providers—an approach akin to becoming a platform provider—but will need to be fast and nimble.
Our colleagues Martin Reeves and Michael S. Deimler have outlined an approach to direction setting, called adaptive strategy, that is especially relevant to the volatile telecommunications market. Adaptive strategy assumes that companies in unpredictable industries need a dynamic approach to strategy built around experimentation. This approach supplements rather than replaces the broad strokes of classic strategy. It is built on the ability of organizations to exhibit responsiveness, resilience, readiness, and recursion (or evolution).

In response to market signals, new capabilities, and opportunities, carriers need to be able to tweak, expand, shrink, or abandon businesses. This adaptability can occur only if senior leaders are willing to allow ideas to percolate up from deep inside the organization or to emerge at its periphery—close to the market.

It is fashionable to refer to operators as dinosaurs. That is the wrong metaphor. They are more like a collection of animals of various sizes, shapes, intelligence, and maturity. Some of them will fail to adapt to their environment and will perish. But with proper nurturing and oversight, others can thrive. It’s a jungle out there, and it’s time for carriers to adapt to it by making hard choices.

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