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An industry at risk

Commoditization in the wireless telecom industry

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Udayan Gupt, Patrick Moynihan, and Adi Rahalkar made significant contributions to the research and analysis underpinning this report.

Executive summary

Competitive pressure is rising in the global wireless telephony industry. It's coming from without, as companies in adjacent industries such as technology and media move into the space. And it's coming from within, as telecom operators fight one another for subscribers in oversaturated markets. The result: stagnant growth, and a slow but seemingly inevitable commoditization of the industry's primary services.

This process can be tracked by looking at two key metrics: changes in the spread between the wireless operators with the largest and smallest shares of each market's subscribers, and changes in the spread between the one with the highest average revenue per user and the one with the lowest. As these gaps narrow, markets become more efficient and more commoditized — as long as there aren't mitigating factors, such as anticompetitive regulation in certain geographies.

The extent of commoditization varies from market to market, of course. As a rule, however, two observations can be made. Markets in more developed economies tend to be more commoditized than those in developing economies. And the number of major wireless competitors in each market is leveling off, with larger markets settling at about three or four, and smaller markets at around two or three.

Can individual operators break out of the commoditization trap? That depends on their willingness to take steps to more clearly differentiate their offerings. First, they must examine their cost structures, shedding nonessential activities and investing the savings in new capabilities. Then they must scrutinize their core connectivity businesses to determine where the real value lies and invest in new capabilities and technologies on which to base truly value-added services that can provide sustainable competitive advantage.

Race to the bottom?

The early years of wireless telephony, the 1990s through the 2000s, looked an awful lot like the California gold rush of 1849. All kinds of companies in several markets around the world moved quickly to claim territory, rapidly building out the infrastructure needed to cover the most populous parts of their respective regions and then the more rural areas. Customers flocked to operators to sign up for mobile phones, revenue growth was strong, and earnings were stable and generated more than enough capital to keep building out networks. Life was good.

When that initial land-grab period ended, wireless operators in each market rushed through four generations of technologies to bring network quality and speed to the level we enjoy today. And they turned to several different growth strategies: selling handsets, developing so-called walled gardens, and offering actual content to subscribers. All of them failed, as tech companies, such as Apple, Google/YouTube, Netflix, and Skype, easily stole a march on them. So they had little choice but to look to competitors' territories and customers for growth. Competition among providers intensified, even as demands on their networks escalated and markets became saturated with subscribers. Italy was among the first markets in Europe to hit 100 percent market penetration, in 2004, but most of the others were close behind. Emerging economies reached that point in shorter time, for the most part — Brazil, for instance, in 2010 and Indonesia in 2011 — while others, including Mexico and Canada, still aren't there.

Then came the smartphone — another innovation the operators missed out on. Beginning with the BlackBerry and Nokia's early efforts, and then with the introduction of the wildly popular iPhone and the various Android-based phones, demand for data over wireless exploded. All of the operators' efforts to capture some of the value being created by these powerful ecosystems — the operators' own smartphones and apps — were for naught. Adding insult to injury, a new generation of smartphone apps began eating into the operators' cash cows — voice and messaging. With many of their traditional revenue streams in rapid decline, more and more carriers simply gave up, focusing their efforts instead on metered data offerings, and throwing in voice and text essentially free.

In short, their services are becoming a utility — easy to compare and subject to increasing competition on price — as carriers run out of ways to differentiate. The result: Markets are maturing, average revenue per user (ARPU) is falling, declining market share differences are intensifying competition, and operators' traditional product and service offerings are generating less and less value. Put simply, mobile services in most markets have been commoditized.

The effects of this seemingly inevitable evolution are, and will continue to be, profound. Revenue growth has been hard to come by for most wireless operators, and many of them have tried to reduce expenses by shifting their operations away from the land-grab days of heavy investment and high employment to a kind of cruising mode in hopes of shoring up margins. That, in turn, has made it difficult for many operators to continue to upgrade their networks and to create services that might attract new customers.

An examination of the degree of commoditization in a number of key markets around the world, and the specific competitive dynamics that are causing it, can not only provide operators with a better understanding of where they stand in the process, but also suggest ways in which they might slow down the process and perhaps even reverse it — or at least learn to live with it. That, however, will require that they take the strategic steps necessary to use the capabilities they already have — or build new ones — to differentiate themselves from their peers.

Measuring commoditization

We define commoditization as the outcome of two interrelated, quantifiable trends. The first involves ARPU, but it isn't simply a function of declining ARPU — though ARPU has indeed declined over the past decade (*see Exhibit 1, next page*). Instead, what matters is the "ARPU spread" — the difference between the highest and lowest ARPUs among the operators in each market. A narrowing spread indicates that prices are converging, thanks to increasing market efficiency and competition around commoditized services.

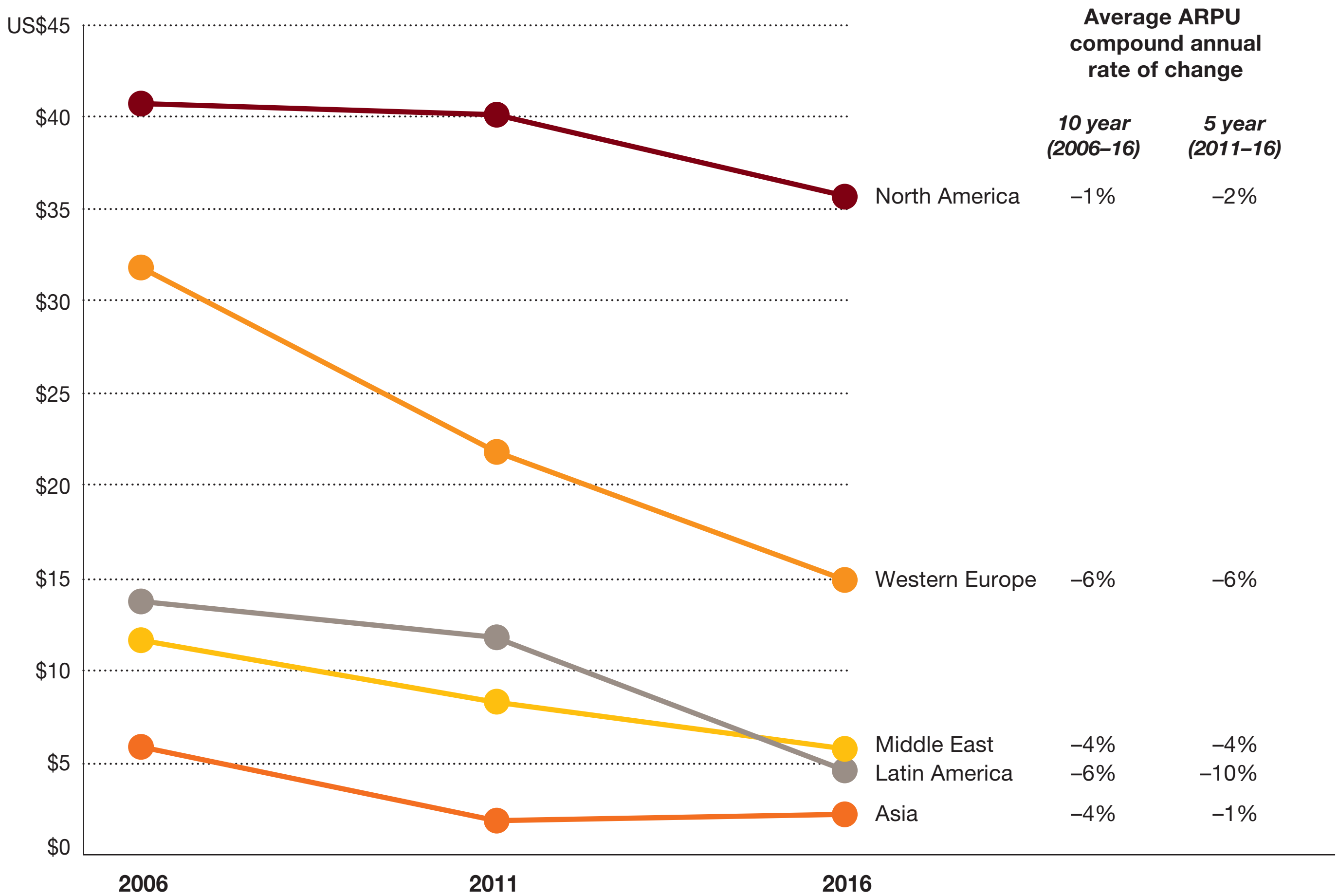
The second is the "market share spread," or the difference between the largest share and the smallest. Again, a narrowing spread indicates greater efficiency, as differences among operators and their service offerings decline, creating a more competitive and more highly commoditized market (*see "Methodology," page 23*).

The results are clear. Wireless markets around the world are all at varying stages of commoditization, depending to some degree on the developmental stage of their underlying economies. As a rule, virtually every market is moving toward a state of competitive equilibrium in which the size of the market determines the number of major wireless operators it can sustain. Larger markets are settling at around three or four, and smaller ones at two or three. As markets move toward this state, market share spreads narrow and pricing competition heats up, further exacerbating the trend to commoditization.

In general, developing markets such as Mexico and Brazil are less likely to be facing commoditization than are more mature markets such as France, while Germany, for example, is "on the edge" (*see Exhibit 2, page 9*). Over time, ARPU and market share spreads have contracted in the majority of markets tracked. From 2011 to 2016, the population-weighted global average ARPU spread fell 8 percentage points, or roughly 25 percent, while the population-weighted global average market share spread declined 3 percentage points, or roughly 10 percent.

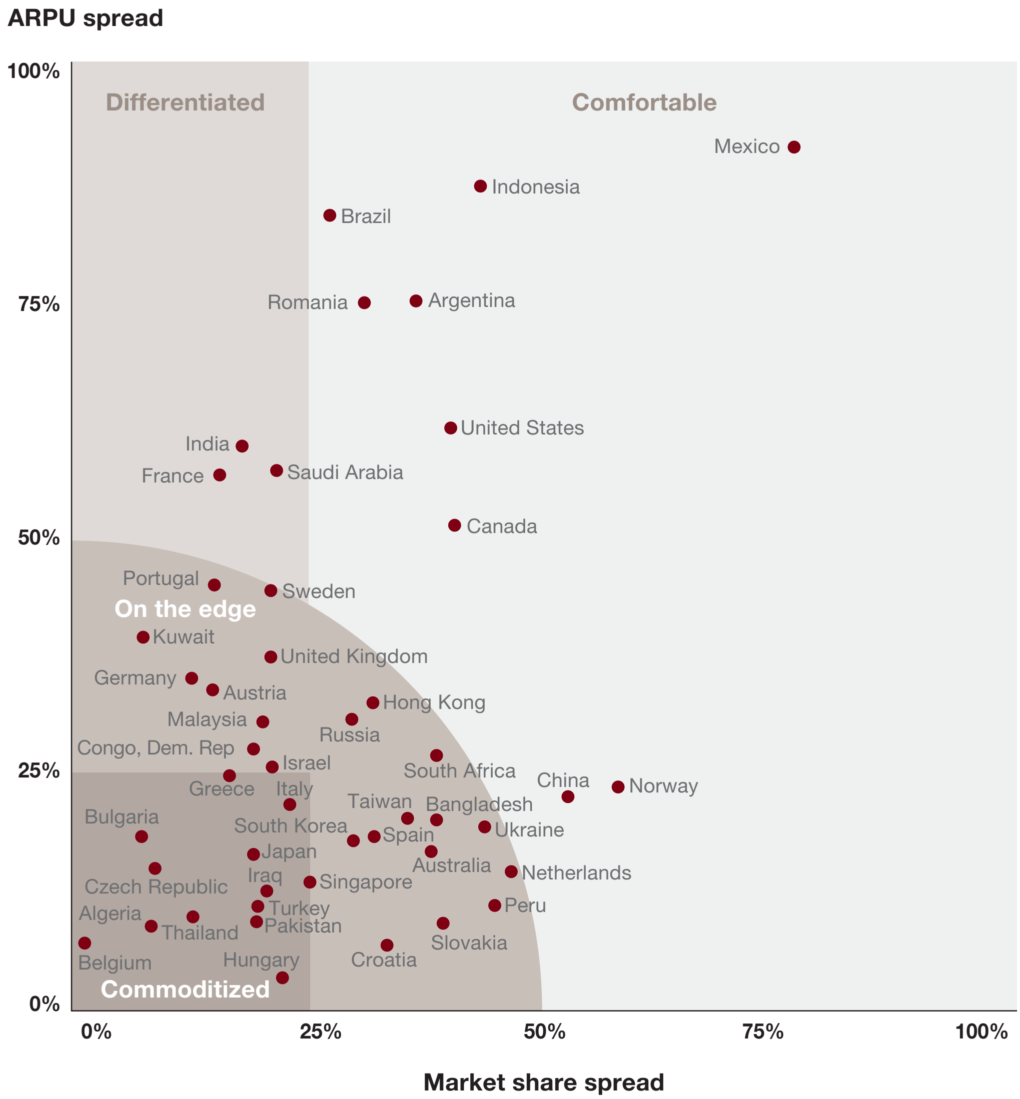
Exhibit 1

Change in average revenue per user, 2006–16



Source: Strategy& research and analysis

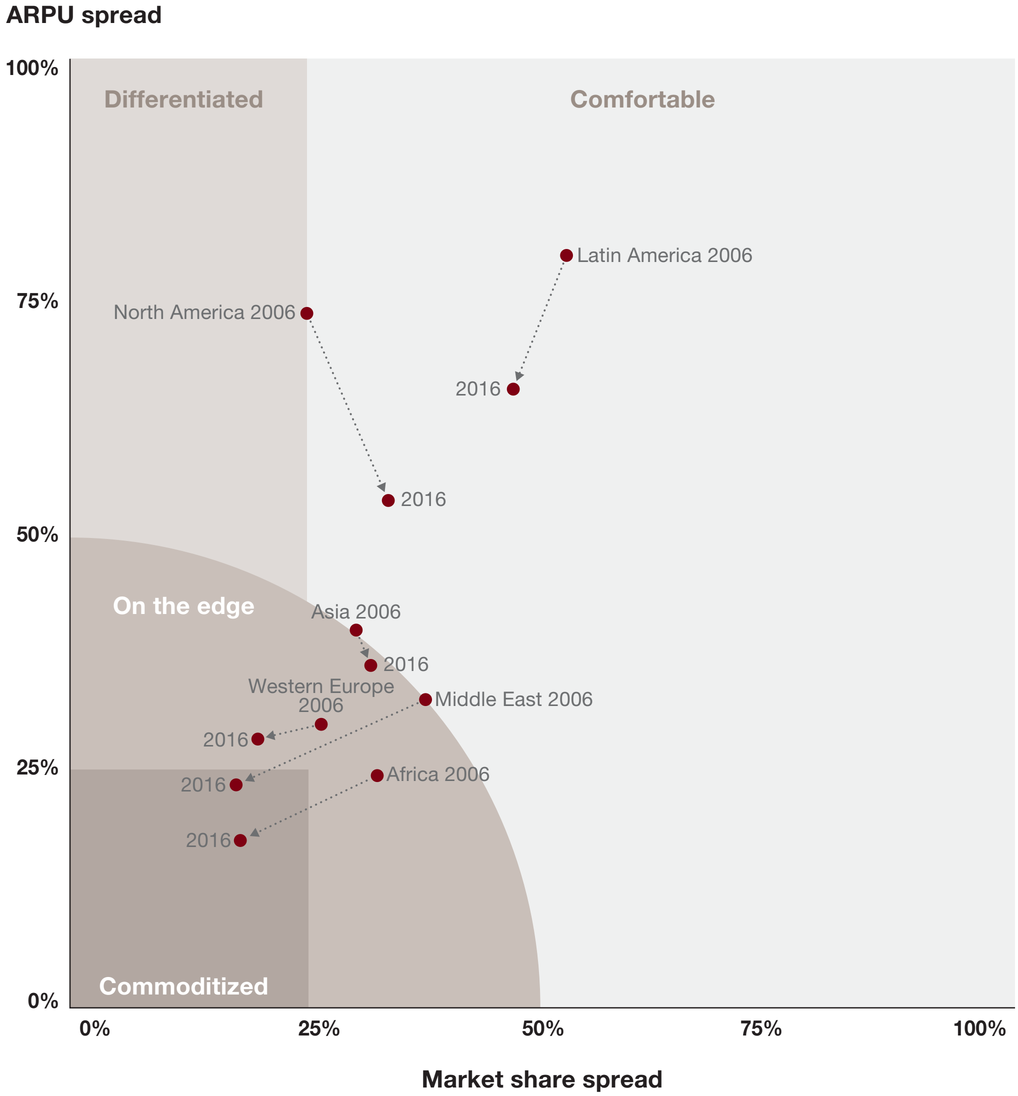
Exhibit 2
Degree of commoditization in specific markets around the world, 2016



Source: Strategy& research and analysis, strategyand.pwc.com/wirelesscommoditization

As Exhibit 3 (*next page*) illustrates, the majority of geographic regions are on the edge — they have been trending toward commoditization from 2006 to 2016, for a variety of reasons. In Western European markets, for example, consolidation has led to the decline of market share spread during the period. In contrast, the market share spread has increased in the U.S., driven by ongoing consolidation and resulting shifts in market share, while increased price competition has narrowed the ARPU spread. But the combined effect has not yet been enough to keep the markets from being comfortably free from commoditization. The rest of the Americas, including Mexico, have seen a drastic drop in ARPU spreads, thanks primarily to regulatory efforts to promote competition throughout the region, and to allow new challengers to grow market share and begin leveling the playing field somewhat with the dominant incumbents.

Exhibit 3
Variations in degree of commoditization among major regional wireless markets, 2016



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Market dynamics

Although commoditization in virtually every individual national market has been on the increase over time, each has its own often widely different dynamics, which are heavily dependent on relative maturity, number of players, speed of consolidation, and regulatory schemes. Of the mature markets we studied closely, only the U.S. and Canada fall in the comfortable range; Germany and South Korea are on the edge; and the developing markets vary widely, from very comfortable to highly commoditized.

Regulation in the U.S., for example, is such that operators are able to charge higher prices than those in most markets in hopes of raising the capital needed to further network upgrades and innovation. That has allowed operators there to remain comfortably not commoditized. However, lack of differentiation in terms of network coverage and quality have forced operators to compete on price, putting downward pressure on the ARPU spread and moving the market closer to commoditization (*see "United States," page 14*).

Other advanced markets face different dynamics. In Germany, for example, consolidation has led to narrowing market share spreads even as it has stabilized ARPU spreads as players become less differentiated and low-cost providers become acquisition targets (*see "Germany," page 15*).

Less mature wireless markets, though often no less saturated than developed markets, tend to be in much greater flux, and their competitive environment changes more rapidly, thanks largely to regulators' efforts to boost competition. That's because in many emerging markets, one or two incumbent providers still control the majority of market share and can offer faster speeds or greater reliability than the competition. Still, technology adoption usually lags that of more mature markets.

Mexico, for example, is taking regulatory measures to encourage competition and reduce the América Móvil (Telcel) monopoly. It recently took bids from companies willing to build a nationwide, wholesale LTE network over which others can offer services under their own brand names. Altán, a consortium of telecom companies and investors, was awarded a license to develop a network to cover more than 90 percent of Mexico's population in seven years, potentially expanding coverage significantly (*see "Mexico," page 16*).

The Indonesian market, on the other hand, consists primarily of prepaid phones, with customers often having more than one SIM card at a time. But operators there are promoting much more expensive data packages as more users buy smartphones — in contrast to mature markets, where data is becoming less and less expensive. Still, with several major players in the market, competition is intensifying and the ARPU spread is declining (*see "Indonesia," page 17*).

For full access to country-level data, as well as additional profiles of the wireless markets in Brazil, Canada, France, and South Korea, visit strategyand.pwc.com/wirelesscommoditization.

United States

The mature wireless market has been relatively unaffected by commoditization so far, although competitive pressures are bringing down ARPUs.

Commoditization Index score

Market value (2015)	US$191.9 billion	Market penetration rate (2015)	116%
Market growth CAGR (2011–15, US$)	3.1%	Market ARPU (2015, US$)	$45.02
Number of subscriptions (2015)	377.9 million	Market ARPU CAGR (2011–15, US$)	–1.6%

Major players: AT&T, Sprint, T-Mobile USA, U.S. Cellular, Verizon

Market overview

The U.S. is the second-largest wireless telephony market in the world by total market value, after China.

Overall network quality is high, and carriers increasingly compete through price-based tactics and aggressive marketing campaigns. As a result, prices are declining and ARPU spread is narrowing.

Though Verizon's and AT&T's networks have traditionally boasted broader coverage and higher quality than those of their smaller domestic rivals, Sprint's and T-Mobile's network modernization initiatives have made their networks increasingly competitive with those of the larger players. Sprint reported $5.4 billion of wireless capital expenses in fiscal 2015, and T-Mobile reported $4.7 billion over the same period.

Low-priced virtual operators such as TracFone and Republic Wireless provide an option for consumers less willing to pay a premium for network coverage and quality.

Market share

Verizon and AT&T together serve nearly 70 percent of U.S. subscribers, with Sprint and T-Mobile splitting most of the remainder, and working hard to make share gains. In 2015, T-Mobile passed Sprint to become the third-largest operator by share of subscribers.

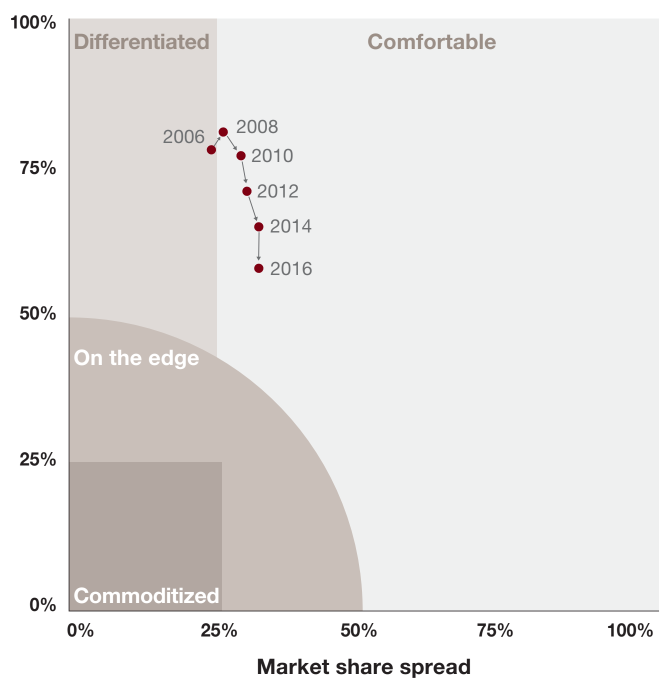
Recent industry consolidation, including the T-Mobile–MetroPCS and AT&T–Leap Wireless deals, is intended to add value offerings to these operators' portfolios (and remove competition from the low end of the market). This helped T-Mobile lay the foundation to dig out of its fourth-place position, while ensuring that market share among the four major operators, especially AT&T and Verizon, remains steady.

ARPU spread

Differences in service levels in the U.S. market are declining as competition escalates, with major providers competing intensely on price, quality, brand awareness, and functionality.

The presence of low-cost operators has historically kept the ARPU spread between the top and bottom of the market above 70 percent, but recently, fierce competition and price promotions have led to price convergence.

ARPU spread



This country profile was prepared by Florian Groene (florian.groene@pwc.com) and Udayan Gupt.

Source: Strategy& research and analysis, strategyand.pwc.com/wirelesscommoditization

Germany

Consolidation among operators has increased ARPU spread but reduced market share spread to just 11 percent.

Commoditization Index score

Market value (2015) .... €26.5 billion (US$29.4 billion)

Market growth CAGR (2011–15, €) 1.8%

Number of subscriptions (2015) ....117 million

Market penetration rate (2015)..145%

Market ARPU (2015, US$) $14.58

Market ARPU CAGR (2011–15, US$)...............................–2.7%

Major players: Deutsche Telekom, Telefónica Deutschland, Vodafone

Market overview

The German wireless market's value is the largest in Europe but has declined due to stiff competition and price wars.

The market has seen considerable consolidation in recent years.

Telefónica Deutschland's 2014 acquisition of E-Plus Group, KPN's German operation, reduced the number of major players from four to two, with relative parity in market share among them. This reduction in competition is expected to stabilize the market's ARPU and put the sector in a better position for revenue growth.

It remains to be seen if fixed–mobile convergence will provide a spark for the next round of consolidation. Recent deal activity includes Vodafone's acquisition of Kabel Deutschland, one of two major cable operators, while merger rumors continue to swirl around Liberty Global's Unitymedia, the other large cable operator.

Market share

Prior to Telefónica's acquisition of E-Plus, T-Mobile and Vodafone were the largest players, controlling 37 and 27 percent of the market, respectively.

The takeover of E-Plus secures Telefónica's place as Germany's largest operator with a 39 percent share in 2016, while T-Mobile's and Vodafone's market shares have remained steady at pre-acquisition levels.

The E-Plus deal has narrowed Germany's market share spread to just 11 percent.

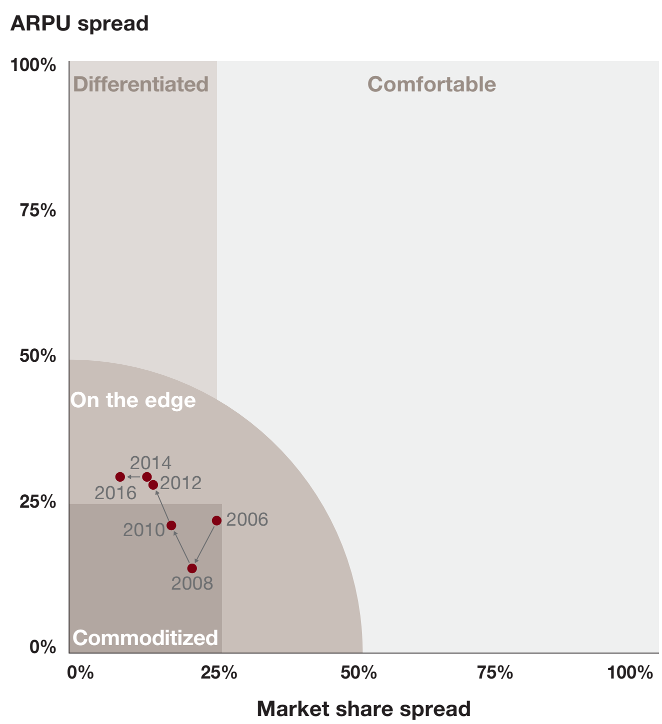
ARPU spread

Although the ARPU of the three largest operators has decreased by nearly 40 percent overall since 2006, the ARPU spread has increased since 2008.

The ARPU of low-cost operator E-Plus fell steadily from 2008 to 2014 as its portfolio of mobile virtual network operators focused on growing its value-conscious customer base.

Because Telefónica has maintained E-Plus's low-cost play, its ARPU has continued to decline steadily, while T-Mobile's and Vodafone's have remained relatively constant.

With fewer large competitors in the market, the overall decline in ARPU has halted since the fourth quarter of 2014.



This country profile was prepared by Florian Groene (florian.groene@pwc.com) and Patrick Moynihan.

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Mexico

The country's Telcel serves nearly 70 percent of the market, but regulatory initiatives are creating an opportunity for competitors.

Commoditization Index score

Market value (2015)	US$15.5 billion	Market penetration rate (2015)	84%
Market growth CAGR (2011–15, US$)	0.5%	Market ARPU (2015, US$)	$14.63
Number of subscriptions (2015)	107 million	Market ARPU CAGR (2011–15, US$)	–6.9%

Major players: AT&T Mexico (combination of Iusacell and Nextel Mexico), Movistar (Telefónica), Telcel (América Móvil)

Market overview

Despite strong growth in subscriber numbers, the value of Mexico's wireless market has grown slowly in recent years, due to decreasing prices, the predominant use of voice services, and relatively low data consumption.

For years, América Móvil (AM), through its Telcel subsidiary, has served nearly 70 percent of the wireless market. In March 2014, however, Mexico's Federal Institute of Telecommunications declared AM and its subsidiaries "preponderant" players, and restricted the company's market share. As a result, AM has sold assets and spun off the management of its wireless towers into a new entity called Telesites, with the stated goal of reducing its market share to less than 50 percent.

In January 2015, AT&T completed its acquisition of Nextel Mexico and combined it with Iusacell, which it purchased in 2014, to create AT&T Mexico. The deals added coverage of 76 million potential subscribers and scaled up AT&T's wireless presence in Mexico to an 8.5 percent share of the market, helping to reduce the country's market share spread.

Mexico's regulatory authorities are determined to introduce further price competition in the Mexican market by lowering the barriers to entry for virtual operators. As a result, in November 2016, Altán, a consortium of telecom companies and investors, was awarded a license to develop a wholesale 4G LTE network to cover more than 90 percent of Mexico's population in seven years.

Market share

As of June 2015, Telcel accounted for nearly 70 percent of Mexico's wireless subscribers, while Telefónica's Movistar subsidiary (with 21.5 percent) and AT&T Mexico (with 8.5 percent) shared most of the rest.

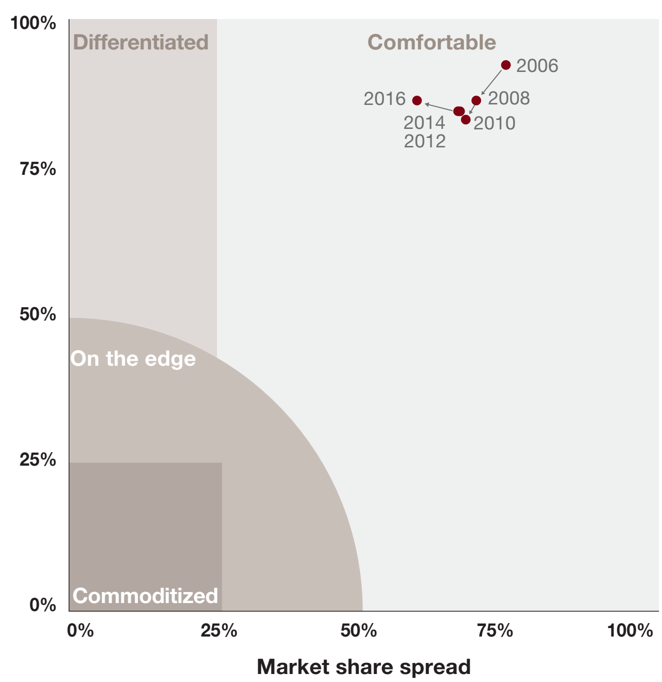
Recently, Telcel's market share has declined as rivals begin to compete more fiercely for share.

ARPU spread

AT&T Mexico commands an ARPU that is around twice Telcel's and about four times Movistar's because it does not target low-spending, prepaid customers.

Overall, ARPU spread has remained relatively steady over the past decade, but many anticipate that the recent regulatory initiatives will begin to change this.

ARPU spread



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Indonesia

Although Indonesia is primarily a prepaid market, its burgeoning demand for data and a transition to 4G are likely to increase ARPU over the next few years.

Commoditization Index score

▼ 38%

Commoditized | On the edge | Comfortable

Market value (2015)	US$11 billion	Market penetration rate (2015)	131%
Market growth CAGR (2011–15)	N/A	Market ARPU (2015, US$)	$2.60
Number of subscriptions (2015)	325 million	Market ARPU CAGR (2011–15, US$)	4.6%

Major players: Indosat Ooredoo, Smartfren, Telkomsel (PT Telekomunikasi Indonesia), Tri (Hutchinson), XL Axiata

Market overview

Indonesia's mobile market is highly saturated in terms of subscriptions, with 131 percent penetration at the end of 2015. It is also predominantly a prepaid market, with more than 98 percent of customers purchasing SIM cards and prepaying for mobile service. Long-term contracts are rare, and switching costs are very low. Consumers have an average of 1.6 active SIM cards and often two or three phones as they look for the best signal or cheapest price. This contributes to the market's relatively high comfort level.

Indonesia has five mobile operators with a market share of 3 percent or more, making the market quite competitive. The "Big Three" (Telkomsel, Indosat, and XL Axiata) will soon become the "Big Four," as Hutchinson's Tri continues to gain market share.

Market share

Indonesia's largest operator — the state-owned Telkomsel and its prepaid brands Kartu As, Loop, and SimPati — leads the market with a 44 percent share of subscriptions. Indosat, the second-largest operator, serves 22 percent of the market.

Offering more limited 3G and 4G coverage than the larger players and with service targeted at large city centers, Tri has used a low-price position (25 percent of market average ARPU in 2016) to drive share gains over the past decade.

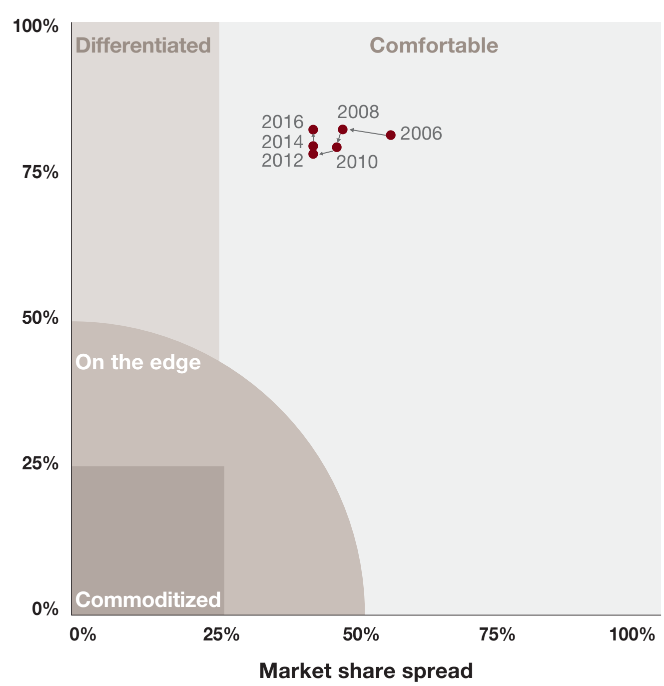
ARPU spread

Although average ARPUs in Indonesia have declined at an average rate of 8 percent a year since 2006, the ARPU spread has remained steady over the past decade, ranging from 78 percent to 82 percent.

Despite the availability of multiple branded prepaid options from various competitors, Telkomsel continues to earn an ARPU premium to the market average of 138 percent, which has steadily increased since 2010, based on its broad network coverage, service quality, and brand equity.

Growth in data consumption will continue to increase customers' willingness to pay for a faster 3G network and greater coverage for 4G network service, while voice-only customers pay rock-bottom prices for 2G or 2.5G networks. Looking ahead, this may drive an increase in market share spread in the short term, as carriers that are able to deliver higher-quality service to consumers using data-intensive applications can capture higher ARPUs.

ARPU spread



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Ways to play

The great risk for wireless operators, especially those in mature markets, is that the trend toward commoditization may lead eventually to a point where they become little more than utilities — the "dumb airwaves" of the telecom industry. Once that occurs, their pricing options will narrow until they are just generating the revenue needed to cover their cost of capital and upgrade their networks.

To avert this fate, carriers must rethink their strategies along two critical paths — cut costs further, and break out of the commoditization spiral.

- **Cut costs strategically.** As noted, most operators have already reduced their costs considerably. But their previous efforts won't be enough to maintain the cash flows that shareholders demand, or to fund their strategic investment agendas. So now they must go through a further, inevitable round of cost cutting, one that challenges the very foundations of the business. In short, they must fundamentally reconfigure their internal and external value chains, rebuild the capability systems that support them, and rethink how they deliver services.

  To this end, they must take a zero-based approach to resourcing and investment funding, looking at their entire range of capabilities and determining on a case-by-case basis whether each one serves to differentiate the company in the market, is required to maintain necessary operations, or doesn't really contribute anything at all. This *Fit for Growth** strategy should enable operators both to improve margins in the short term and to set themselves up for further growth by using some of the money saved to reinvest in new capabilities. (The book *Fit for Growth: A Guide to Strategic Cost Cutting, Restructuring, and Renewal* [Wiley, 2016] explains this process in detail.)

* *Fit for Growth* is a registered service mark of PwC Strategy& LLC in the United States.

- **Differentiate for growth.** The key to breaking out of the commoditization trap lies in reversing the two trends that operators are facing — the narrowing of both the ARPU and the market share spreads. Further, these efforts must go hand in hand.

  First, operators must reevaluate the very nature of their core connectivity business. That includes understanding clearly its current strategic assets and control points, and how new technologies such as 5G and network function virtualization (NFV), along with software-defined networks (SDN), might enable them to build new differentiating capabilities.

  Rethinking the connectivity business must lead in turn to the development of an entirely new set of connectivity-based, differentiated, value-added offerings that can provide sustained competitive advantage and that won't suffer in competition with over-the-top (OTT) players and digital device ecosystems. These might include services for the smart home, connected driving, and smart cities, as well as a means to gain some control over how content and advertising is distributed to consumers.

Together, these two moves should enable operators to move away from "metered data" and other pricing models based on commodity categories such as minutes of voice, gigabytes of data, and number of texts. Instead, they must develop value-based pricing schemes for their value-added service packages, through which customers pay for the value they attribute to the services they receive. This will depend largely on operators' ability to segment customers into different personas — the video entertainment lover, the sports fan, the business traveler — and offer each group compelling services based on its specific needs and interests.

Such pricing mechanisms will let operators generate the most revenue from each customer segment, depending on its needs and willingness to pay for specific services — and if done right can increase ARPU and slow the process of commoditization, especially at the upper end of the customer range.

One final strategic move operators might consider is consolidation, which can help reverse commoditization pressure by increasing market share and expanding the spread between the market's operators. Such a move can also lift some pricing pressure by removing a competitor from the market. Of course, the ability to take this approach depends largely on each specific market situation and the regulatory schemes governing it — the smallest number of players that will be tolerated is typically three, and several markets examined in this study have already reached that point.

What will the future bring?

No matter how diligently operators try to prepare themselves for the future, it is, of course, impossible to know what that future will hold, especially in an industry like telecommunications, in which change can happen quickly. Who knew, in 2006, how profound an effect the smartphone would have on the industry, shifting the competitive advantage — and the lion's share of the growth — from the traditional operators to new ecosystem participants that captured value through device sales and OTT content, commerce, and advertising?

Strategic scenario analysis is an important — and often overlooked — discipline that can help operators avoid the pitfalls of linear planning and thinking, and it offers a valuable way to mitigate the risk of such surprises. Done right, it can enable operators to plan for a variety of possible futures, but it requires a disciplined act of the imagination.

First, determine the factors that could affect your company's competitive environment along the same time line as the company's strategic investment horizon. For an industry like telecommunications, this could be anywhere from three to seven years or so. In addition to the commoditization forces already at play, these factors might include the potential for the next revolutionary shift in consumer behavior, for disruptive new technologies, for changes in your market's regulatory environment, for greater or lesser overall market growth, or for moves by competitors into new markets and business models. (And be sure to define competitors broadly, as competition from other operators may be the least of your longer-term worries.)

Look for signals and signposts that you can observe today, and combine them into the different plausible outcomes they may lead to. And do include that doomsday scenario, and quantify what your company's economics might look like in a fully commoditized endgame. What you will see will likely be sobering but should provide an impetus for you to step out of the dangerous tendency to deploy incremental tactics focused on the next quarter or year, and fundamentally rethink the direction of your business.

Then, think through what it will take to shape and thrive in any of these futures. What are the handful of capabilities that will truly matter, which ones are you already good at, and which will you need to develop? What are the strategic assets that will determine who will control customer access and, ultimately, access to value? What would be a realistic goal for your margins, and the target cost structure you would need to get there? Challenge yourself to identify the "common denominators" — the factors that really matter because they represent true differentiation, cost leadership, or barriers to entry — and formulate the different strategic identities that would enable you to win under each set of circumstances.

Finally, engage your broader leadership team — strategists, operators, innovators, and marketers — to vet your scenario thinking and make your chosen strategic identity real and executable. Be sure to push for a strategic plan that balances value proposition with bottom-line requirements, technology with organizational capabilities, financial rigor with a plan to activate your talent base and culture. Wargaming can be a powerful tool to pull your company's leaders out of day-to-day incrementalism and build a coalition for action.

A distinctive strategy

The sad irony is that the telecom industry has become a victim of its own success. Operators have saturated their markets, and new technologies, such as the smartphone, have exponentially increased demand for wireless data. As a result, the forces of commoditization have already been felt in many wireless markets around the globe. Even operators in markets that are currently positioned comfortably are at risk, as they scramble for market share and struggle to develop new, innovative services, while governments devise regulations to promote competition.

Only by choosing a strategy that plays to their strongest, most distinctive capabilities can operators hope to grow in this environment. The alternative — becoming a mere utility — is not an outcome that shareholders, business leaders, or their teams are likely to find attractive.

Methodology

To measure and better understand the scope of commoditization in the wireless industry, we developed a commoditization score based on a combination of two independent variables at both the national and regional levels:

- **Average revenue per user spread:** The difference between the highest and lowest ARPUs of the market's players. A declining difference indicates that operators are losing the ability to differentiate among their products and services, and thus are engaging in a pricing race to the bottom.
- **Market share spread:** The difference between the market shares of the largest and smallest players in the market. The smaller the spread, the more commoditized the market, as the pricing war leads to even greater interchangeability among providers, and thus less inclination on the part of consumers to change providers.

Depending on the scores on these two measures, we have placed each country and region we studied into one of four commoditization zones.

1. **Zone 1: Comfortable.** In this zone, there is a greater than 50 percent spread in market share and ARPU between highest and lowest market players, indicating that commoditization is far off. However, this can change quickly if new competitors enter the picture or a competitor launches a particularly aggressive pricing strategy.
2. **Zone 2: Differentiated.** There is a large spread in the ARPU between operators in this zone and no more than a 25 percent spread in market share. Although there is no dominant player in such markets, its operators have managed to maintain a range of pricing options.
3. **Zone 3: On the edge.** Countries in this zone have no more than a 50 percent difference in market share and ARPU between the highest and lowest players. Operators in these countries have managed to maintain some differentiation in pricing, but decreasing differences in market share are pulling the market toward commoditization.
4. **Zone 4: Commoditized.** Countries in this zone have less than a 25 percent difference in market share between the highest and lowest players in the market and less than a 25 percent difference in ARPU. Operators in these countries are fully in the grip of commoditization.

We have also assigned each country a Commoditization Index (CI) score — a single figure that provides an "at-a-glance" summary of where a country or region lies on the path from comfortable to commoditized. The CI score is an average of market share spread and ARPU spread, weighting both spread scores equally.

Although the CI score for a country or region is derived from the market share spread and ARPU spread, the score provides a complementary perspective on a market's commoditization zone — and can drive insights obscured by a country's zone position. For example, a market that is in Zone 1 (comfortable) may be identified by the CI score metric as more competitive overall or on the edge.

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