

## Seizing the 4G opportunity

*The rollout of 4G networks gives operators a chance to change the rules and craft spectrum auction and go-to-market strategies that ensure that massive investments pay off.*

*By Alexandre Ménard, Andrea Travasoni, Duarte Bacelar Begonha, and Mirko Gropp*

If we build it, will they come? This is a question many mobile operators asked about their significant investments in long term evolution (LTE) technology. Based on recent company actions, there's little doubt that most major mobile operators will invest in 4G networks – as staying out of the game would be too risky, from a competitive standpoint. As a result, leaders should now pose a different question: *When* we build it, which spectrum auction and go-to-market strategies will capture the most value possible from 4G and generate the greatest returns from these massive investments? A significant number of operators worldwide have already committed to LTE, and the first networks were rolled out commercially in 2011. By the end of 2011, 285 mobile operators were investing in LTE. Of those operators, 49 have already commercially deployed LTE networks in 29 countries.

These early 4G launches reveal that successful players prepare for spectrum auctions well in advance in order to secure the best spectrum at the best prices. These winners also act quickly to reshape mobile broadband marketing rules and tactics in order to seize a fair share of the value offered by 4G. Leading operators can also use this opportunity to strengthen their market positions (perhaps by eliminating one or more competitors in the future) while new entrants and small players can take advantage of 4G to attack market leaders and quickly increase market shares.

### DEMAND FOR 4G EXISTS

Currently, LTE offers a range of significant customer experience improvements over wireless technologies:

- **Higher user speeds:** LTE enables users to download more content than 3G in the same amount of time. This makes data-intensive, on-the-go downloads such as music or high-definition video streaming a reality.
- **Faster connection times:** LTE requires 95 percent less time to connect than evolved high-speed packet access (HSPA+), assuring an “always-on” service experience.
- **Less round-trip latency:** LTE offers a 50 percent reduction in round-trip latency compared to HSPA+, making real-time applications such as VoIP, video calls, and online gaming possible.

The advantages of 4G are clear to industry insiders, but do customers fully understand them? And if so, are they willing to switch to 4G to reap the benefits? To better understand the customer's point of view, in 2011 a proprietary consumer survey was conducted in five countries: the United States, the United Kingdom, France, Germany, and Sweden. In each market, the interviews were conducted with 200 to 500 smartphone-only users; 200 mobile broadband-only users; 100 smartphone and mobile broadband users; and 100 consumers who did not use either smartphones or mobile broadband, but who were interested in doing so.

The surveys confirmed that, for the most part, demand for 4G is latent at this stage (Exhibit 1). In other words, consumers want the benefits of 4G, but haven't yet been able to obtain them because few such networks exist. Our research shows that more than 30 percent of smartphone users and 37 percent of non-users would upgrade to a 4G smartphone package if one were available. Likewise, 37 percent of current mobile broadband users and 41 percent of non-users would opt for 4G service. In all of the markets we surveyed, price was the single most important criteria from a smartphone perspective, ranking significantly higher than either coverage or speed. In mobile broadband, price was also the leading purchase-related criteria, but quality of service (QoS) elements such as speed and coverage were also considered important.

**EXHIBIT 1**

**Market research confirms a latent interest in 4G with price as the main buying criteria**

	Smartphones	Mobile Broadband
<b>Customer demand</b>	<ul style="list-style-type: none"> <li>31% of smartphone users and 37% of non-users would upgrade to a 4G smartphone package</li> </ul>	<ul style="list-style-type: none"> <li>37% of current mobile broadband users and 41% of non-users are willing to opt for a 4G dongle/card</li> </ul>
<b>Willingness to pay</b>	<ul style="list-style-type: none"> <li>Existing smartphone users would agree to pay a premium of EUR 8-10 for a 4G plan</li> </ul>	<ul style="list-style-type: none"> <li>Also in mobile broadband current users would pay a premium of EUR 8-10</li> </ul>
<b>Key buying criteria</b>	<ul style="list-style-type: none"> <li>In all markets price is the single most important criteria</li> <li>Only in Sweden coverage is also of high concern</li> </ul>	<ul style="list-style-type: none"> <li>Price is the leading buying criteria but QoS parameter such as speed and coverage are more important than for smartphones</li> </ul>
<b>Fixed net substitution</b>		<ul style="list-style-type: none"> <li>QoS close to fixed broadband is the main differentiator of 4G offers</li> <li>Hence, 9% of potential users would consider cancelling fixed broadband</li> </ul>

SOURCE: McKinsey

This overwhelming focus on price could be bad news for operators hoping to recoup their massive investments in 4G. However, we also found evidence that consumers who understand the advantages provided by LTE are willing to pay more for it. For example, existing smartphone customers were more willing to pay extra for 4G than new users, probably because current smartphone subscribers better understand the benefits they would receive from moving to 4G.

In most European markets, however, new smartphone users expected to pay from 28 to 31 percent *less* than the amount existing subscribers said they were willing to pay, which was typically less than the current average market price for 3G service. Clearly, the mobile industry needs to make a stronger effort to educate consumers on the advantages of 4G.

The feature many respondents liked most about 4G was the potential to surf the web at the same speeds on par with fixed broadband. In fact, nearly 10 percent of respondents said they would be willing to buy a 4G mobile broadband subscription and consider cancelling their fixed broadband service because of this feature. Again, among those unwilling to do this, price was the deciding factor.

All in all, when making strategic marketing decisions, operators should consider three key dimensions:

- **Pricing** - The benefits of 4G (e.g., speed, latency) should be leveraged to introduce QoS differentiation and achieve price uplift vs. 3G mobile broadband offers, or market share should be increased through first mover advantage
- **Education** – The advantages of 4G should be clearly communicated so that customers understand the benefits vs. 3G technology and to incentivize migration from 3G to 4G
- **Fixed-Mobile substitution** – The benefits/risks related to fixed-mobile substitution must be understood, and the decision to possibly introduce a fixed broadband offer based on 4G technology evaluated

## KEY STRATEGIC ACTIONS TO PROPERLY ADDRESS THE OPPORTUNITY

Given the challenges revealed by the research, as 4G inches closer to broad commercial rollout, an operator's go-to-market approach will be pivotal to its success. The approach will require making two critical, interdependent decisions:

- A) Following a clear spectrum strategy
- B) Adopting a proper go-to-market strategy

Both actions tackle complex issues, and executing them successfully will be critical if an operator is to recoup its 4G investment. Operators should, therefore, carefully prepare both their auction and marketing strategies well in advance to avoid any potential delays or pitfalls when making 4G a reality.

## Following a clear spectrum strategy

Participating in a spectrum auction is the first critical step an operator takes toward establishing a 4G network. Auctions are often competitive, can require huge investments and usually shape an operator's future competitive position (e.g., spending too much for spectrum can saddle an operator with an uncompetitive network). Auctions can particularly affect an operator's positioning in the mid to long term, and allow them to strengthen their competitive posture in mobile data business or, alternatively, force them out of the game. As a result, companies must prepare for spectrum auctions well in advance and develop their strategy comprehensively – down to the smallest detail. Doing so will enable them to avoid missing out on the 4G game entirely, or overpaying for a spectrum license, which could put the financial sustainability of the investment at risk (Exhibit 2). Some key elements to craft a successful auction strategy emerge from McKinsey's experience with key telecom players supported recently:

- **Start early:** Craft strategies and determine the best possible outcomes as early as possible in order to influence the regulator regarding the most significant auction themes. Doing so enables companies to use the auction setup to their advantage.
- **Know what you want:** Be very clear upfront about the ideal spectrum outcome, and create realistic fallback scenarios.
- **Understand competitor positioning and probable goals:** Avoid a self-centered strategy, since competitor actions can influence your own position.
- **Quantify your willingness to pay:** Carefully evaluate the long-term spectrum value for the company, and assess the impact of 4G both in terms of market positioning and cost.
- **Understand the best spectrum mix and its implications on the company's go-to-market strategy:** Carefully evaluate the company's starting spectrum position and the optimal mix of frequencies needed to compete in the long run. Target the low frequency (e.g., 800 MHz) spectrum to ensure nationwide coverage and to build penetration. Go after the high frequency spectrum (e.g., 2.6 GHz) for capacity and urban hotspot coverage, and try to secure large slots to guarantee the LTE speeds promised (i.e., 2x10 MHz at a minimum, 2x20 MHz ideally).
- **Be factual:** Complete the strategic evaluation analysis using hard numbers to make sure all assumptions are correct, and be sure to take into account all of the key variables (from revenues to capital expenditures). Leaders also need to understand the potential impact of auction rules on spectrum value and to investigate any potential alternatives to 4G.
- **Practice:** Run auction simulations to ensure that your team is at ease with the auction setup and format and to limit emotional factors and unprepared decision making during the bidding.
- **Leave no room for improvisation:** Before the auction starts, companies need to define their *modus operandi*, governance process, and bidding envelope for every possible situation.

**Getting prepared for an auction requires significant preparation from market projection to running the auction**

Module		Key activities
1 Evaluation of LTE spectrum value	A Overall market projection	<ul style="list-style-type: none"> <li>Estimate long term market reference scenario for high speed mobile broadband (i.e. demand forecasting, revenue pool, data traffic)</li> </ul>
	B Client LTE Business Plan	<ul style="list-style-type: none"> <li>Develop a full business case with different spectrum configurations (e.g. No new spectrum, full spectrum acquisition) to assess value of LTE frequencies for Client</li> </ul>
	C Competitors LTE valuation	<ul style="list-style-type: none"> <li>Assess Business case for competitors in different key spectrum configurations to assess their valuation of LTE frequencies</li> </ul>
	D Shareholders validation	<ul style="list-style-type: none"> <li>Prepare the supporting documentation to communicate to Client's shareholders / Board value of LTE spectrum and get approval on budget for the auction</li> </ul>
2 Strategy preparation and support auction	E Spectrum strategy outline	<ul style="list-style-type: none"> <li>Prioritize spectrum scenarios both for Client and Competitors based on economic evaluation (scenario value creation vs. "no spectrum acquisition" case) based on allowed spending (i.e. financial constraints)</li> <li>Evaluate Client maximum willingness to pay for LTE frequencies</li> <li>Outline auction strategy guidelines</li> </ul>
	F Auction strategy development	<ul style="list-style-type: none"> <li>Test / fine tune auction strategy using mock – auction simulations</li> <li>Develop bid tracking tool to be used during the auction to monitor auction dynamics and support decisions</li> </ul>
	G Auction operations support	<ul style="list-style-type: none"> <li>Define and set up operating guidelines for the war room</li> </ul>
	H Regulatory support	<ul style="list-style-type: none"> <li>Assist client in possible interactions with Regulator (e.g. Q&amp;A sessions)</li> </ul>

It is important to note that operators may take different spectrum strategies based on their starting competitive position and market dynamics. Spectrum strategy, in particular, is influenced by several variables:

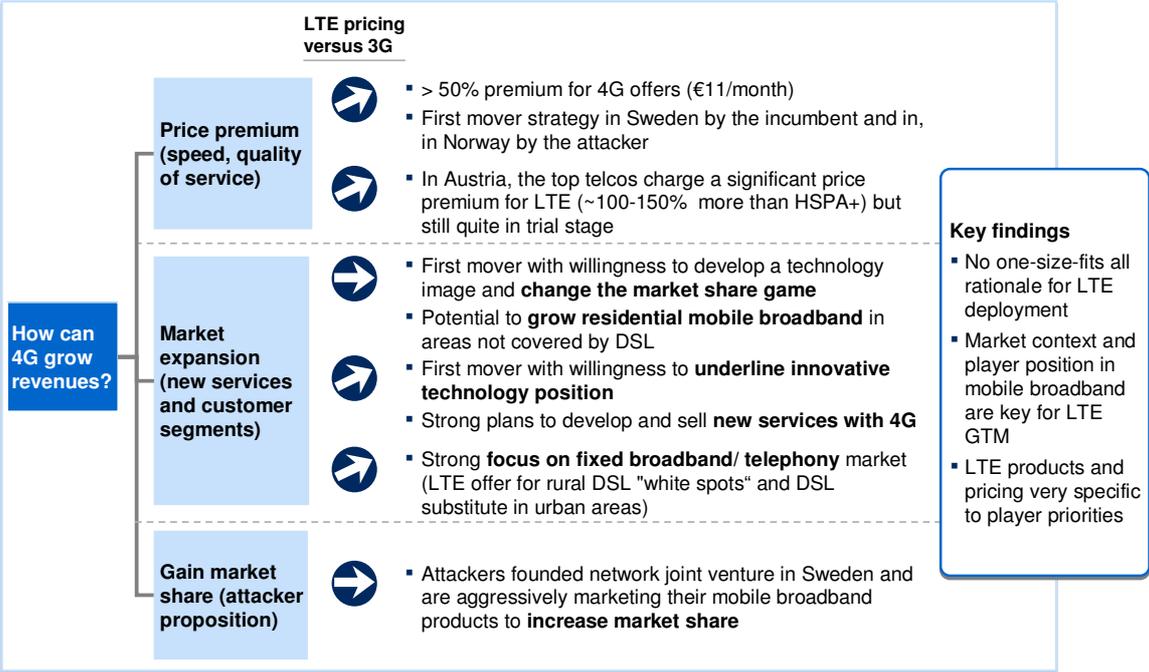
- **Overall expected future market dynamics** regarding technology adoption and data usage (e.g., future projection of required capacity to meet customer requirements)
- **Operator market positioning** (e.g., technology leader, market leader, attacker) and **future growth aspirations** in terms of market/value share
- Actual **asset portfolio** (i.e., available frequencies, fixed line availability) and possible refarming of spectrum bands
- A **regulatory framework** that allows network sharing and roaming among different operators
- **Financial constraints** that could limit auction strategy and objectives

# Adopting a proper go-to-market strategy

Approaches to marketing strategy vary widely depending on an operator’s commercial goals, the market context, and the operator's individual competitive position (Exhibit 3). Some players use LTE launches to introduce price premiums for better QoS, to gain market share, and to expand into new markets such as fixed-mobile substitution.

EXHIBIT 3

## Go-To-Market approaches vary widely, depending on the market context and individual competitive position



SOURCE: McKinsey

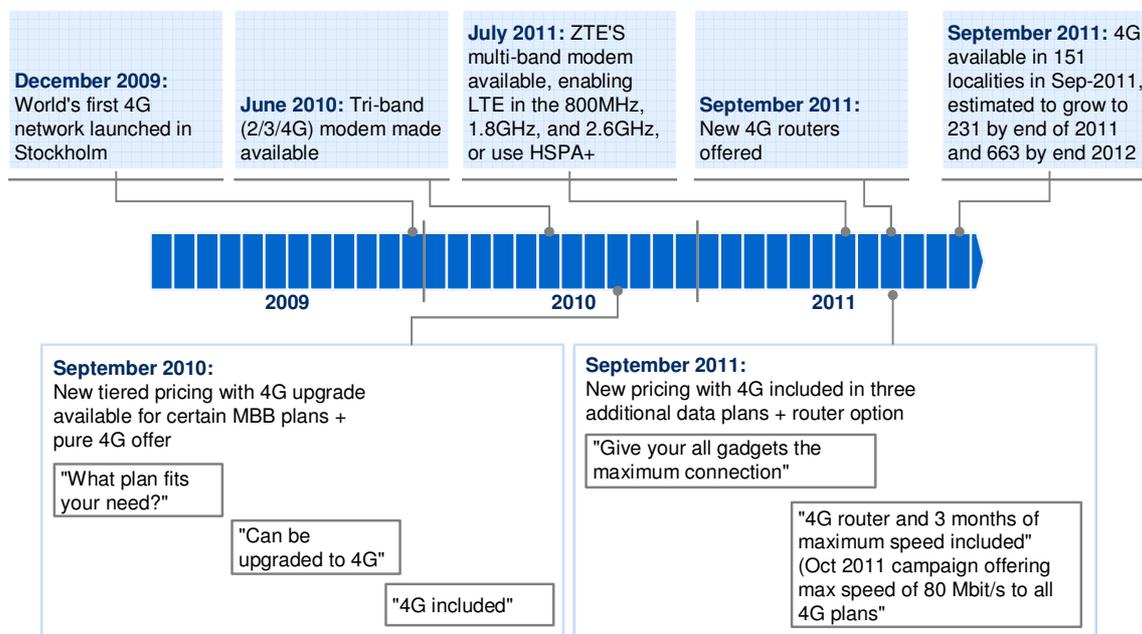
What follows are three brief overviews of 4G rollout progress in key markets around the globe.

**Sweden** is an example that illustrates how 4G was used to introduce price premiums via QoS differentiation and how attackers try to gain market share in the mobile data arena. A Swedish incumbent introduced LTE quite early, in order to establish itself as a technology leader, and 4G carried a price premium due to its superior speeds (Exhibit 4). The company offers a variety of mobile broadband pricing plans, and all but the entry level deal include LTE. Meanwhile, the two attackers are leveraging the favorable cost position made possible by their shared LTE network to offer 4G service at no premium. Their objective is to use price competition to gain market share. While sharing the infrastructure assets, the companies are attempting to differentiate their 4G offerings by using pricing and, recently, service packaging.

## EXHIBIT 4

### The Swedish incumbent telco was a first mover, introducing tiered pricing based on data volume and speed

Examples of 4G releases in Sweden



SOURCE: Press search, McKinsey analysis

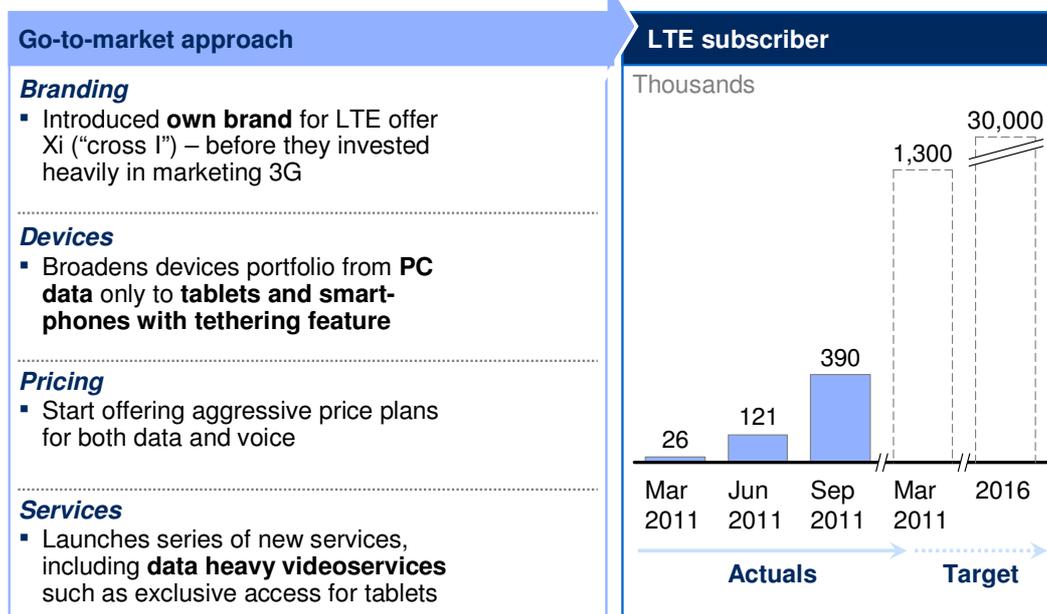
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**In the United States**, attackers set out to gain market share through first-mover advantage and the use of very aggressive offers. With 3G capacity scarce and facing strong competition, mobile players offered consumers incentives to switch to 4G. These incentives included subsidizing user equipment and charging virtually no price premium for data plans compared to 3G. The market was jolted when a major telco began to aggressively promote its LTE offer in order to gain market share in the high-end segments (the company offers its 3G and 4G mobile broadband services at the same price point). As a result, other players such as AT&T have begun to speed up their own LTE deployments to defend their market positioning.

**In Japan**, the incumbent operator uses LTE to secure market shares in the high-end market segment and to explore further differentiation with proprietary services. The company is aggressively deploying LTE under its newly created Xi brand, with a focus on new advanced services such as video streaming via Hulu (Exhibit 5). Meanwhile, attackers continue to market less advanced technologies –DC-HSDPA and EV-DO Advanced – as the next service beyond 3G, and make speed promises similar to those promoted by the incumbent.

EXHIBIT 5

**The incumbent in Japan addressed devices, pricing and services to boost LTE penetration. Plans to have 30 million LTE subs until 2016**



SOURCE: McKinsey analysis, press

Due to regulatory requirements, LTE offers in **Germany** have so far been focused on enabling broadband access in areas that do not have a fixed-line alternative. One Telco’s recent announcement regarding migrating its millions of DSL customers to its LTE mobile network suggests that in the future mobile attackers will continue to seek revenue growth in **fixed-line substitution**. This commercial strategy has to be seen in the light of high fixed costs in fixed-broadband for the last mile (ULL), where both the integrated attackers could also render the same services over the newly acquired LTE spectrum.

## STRATEGIC IMPLICATIONS

The introduction of 4G opens a new chapter in the mobile industry's competitive dynamics, one that presents big opportunities for operators. To successfully seize these opportunities, operators must deal with all the dimensions of a 4G introduction, beginning with the spectrum auction and continuing on to the creation of successful go-to-market strategies. Operators should consider two points when moving into this new era:

- **Thoroughly prepare for spectrum auctions:** Begin early in order to influence the regulator on the most relevant regulatory aspects; carefully evaluate spectrum value; and define the company's aspirations and auction strategy in detail, based on expected market dynamics and competitive positioning. Operators must approach auctions using a comprehensive methodology to reduce risks and achieve a good return on their 4G investment. This requires a rigorous approach that addresses all key aspects of the initiative, such as understanding the potential impact of regulation on a 4G business plan, setting your maximum willingness to pay for the 4G spectrum, understanding competitor strategies, and preparing the auction strategy and practicing it in simulations.
- **Use LTE to revise your mobile data offer:** The introduction of LTE should be used to enhance the value offered to consumers. Operators should introduce new pricing schemes (e.g., leverage quality of service differentiation), enter new markets (e.g., fixed-broadband, services such as video streaming and calling), and gain market share (e.g., in mobile broadband and in sub-segments such as the high-end customer segment). Based on improved technical features and economics, operators can selectively utilize customers' greater willingness to pay to counter the price reduction trend. New mobile Internet customers need to be educated on the superior service quality on offer and drawn to the brand with introductory offers to counteract low willingness to pay.

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The move to 4G networks opens new opportunities for mobile players. But to capture those opportunities, operators need to prepare thoroughly – and begin doing so prior to the actual spectrum auction. Experience shows that successful 4G pioneers maintain their focus throughout the rollout period, and develop strong go-to-market strategies that inform consumers of the significant benefits 4G provides over their current service.

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