McKinsey&Company

Regaining mobile's grip on connectivity

Telecommunications, Media, and Technology August 2017

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While mobile operators struggle to tap into adjacent pools of value, they could be overlooking real threats to their core business.

Consumers on the go may soon no longer need mobile operators to stay connected with the wider world. Wi-Fi networks, frequently offered free, are becoming much more commonplace, and emerging low-power and satellite systems could provide other ways for users to bypass traditional mobile networks entirely.

Recently, many mobile operators have shifted their strategic focus towards capturing value in adjacent revenue streams, such as mobile payments and advertising, with limited success (see textbox "Adjacencies deliver limited results"). But in pursuing these elusive cash flows, operators risk overlooking a growing threat to their core connectivity business. Left unchecked, this trend could relegate mobile networks to the option of last choice – the one used only when others aren't available.

New connectivity threats emerging

For decades, mobile operators have been the sole option for connecting to the world wirelessly, but new technologies have rapidly demolished this monopoly. Over the past two years over-the-top applications have captured a large share of the voice and messaging businesses, offering better quality in many developing countries than traditional mobile networks.

Beyond these applications, which piggyback on fixed and mobile data networks, other threats to the mobile industry's core offering – the "network" – are also emerging as potentially significant contenders in the connectivity market. For example, Wi-Fi networks have become widely available and already carry about 70 percent of the traffic generated on mobile devices. Developments still in the pipeline will likely make these networks even more pervasive. Furthermore, many municipalities worldwide have launched "smart city" programs that often include publicly available Wi-Fi.

These and other developments will likely expand Wi-Fi coverage through new network roll-outs, increased spectrum, and better technology standards. As one example of the threat to mobile operators, video streaming – the fastest growing use for mobile data – will probably rely most heavily on Wi-Fi since the bulk of viewing takes place in stationary settings.

Adjacencies deliver limited results

Mobile operators have tried to expand their business models to capture adjacent revenue streams, such as those generated by mobile banking, payments, and advertising, but many have stumbled in this new strategic focus. The central problem: these innovative products and services are a bad fit for the ways operators traditionally create value.

Businesses that succeed in these adjacencies are typically powerhouses when it comes to rapid innovation at scale and are adept in managing complex ecosystems with many partners. Traditionally, mobile operators have not cultivated either of these capabilities. While some operators have established leading positions in adjacencies in specific regions, the industry generally has not dominated any of these opportunities.

What's more, low-power networks will soon compete with traditional mobile operators in connectivity. Companies outside the telecommunications industry, as well as some operators, are developing these low-cost networks that, for instance, allow users to tailor their configurations for Internet of Things (IoT) applications. These networks can radically reduce the energy consumption of IoT systems, providing a lower cost, easy-to-integrate alternative to mobile service (see textbox "Mobile's bleak IoT opportunity"). More radical technology solutions such as balloons, drones, and satellites are also emerging that could take traffic away from mobile networks.

Avoiding "last choice" status

Because of these emerging alternatives, mobile operators risk being downgraded to the channel of last choice, the one used only on those rare occasions when Wi-Fi, low-power networks, satellite coverage, or other options are not available. Among the developments that could signal this shift are the launch of new Wi-Fi standards that provide higher speeds, longer ranges, and additional management options or a breakthrough in newly announced satellite initiatives.

The eclipse of mobile telephone numbers, however, would be the clearest indication that mobile operators have lost their hold on connectivity. These numbers constitute a direct link between customers and mobile operators, but many over-the-top applications bypass them in favor of individual user names and passwords. If mobile customers no longer need telephone numbers, mobile operators will have lost a crucial link to their markets.

Ironically, mobile operators that have invested heavily in building blanket coverage in major markets will now have to take aggressive action to remain relevant in connecting the mobile market.

To prevail in this changing market environment, mobile operators should begin by addressing three critical questions.

1. How can the value of connectivity be increased?

Operators can put a price on universal mobile connectivity by assessing fees to access the network instead of charging for usage. They can also take steps to combat small bundle arbitrage moves from third parties. This strategy requires a shift in thinking – the product is less about "megabytes" and more about the ability to connect anywhere, anytime. Key measures include:

Position mobile as the premium connectivity option. Promote an industry-wide campaign to position the mobile network as the premium wireless access channel, based on quality of service and functionality, especially in terms of its superior end-to-end cybersecurity compared with current Wi-Fi networks. Potential targets involve applications such

Mobile's bleak IoT opportunity

Many mobile operators are eying burgeoning IoT applications such as self-driving cars and trucks to generate a significant volume of low-latency, high-margin traffic in real time. While such applications will probably produce high data traffic flows, these terabytes will likely bypass mobile operators.

Current designs for autonomous cars, for example, concentrate processing within the car itself. At the same time, future IoT channels will likely lean heavily on low-power networks rather than mobile operators for their connectivity needs. And finally, large manufacturers seem likely to build in-house, hyper-local networks to connect their systems, many of which will play mission-critical roles and thus demand such additional protection.

as self-driving cars that put a premium on having secure macro network coverage. This move should also placate regulators, providing greater assurances regarding potential cyberattacks.

Ensure superior customer experience. Operators need to understand their customers' perceived experience and ensure superior connectivity and network quality. By taking a broader role in monitoring and optimizing connectivity options, companies can maintain a central customer service position. For example, many operators now measure individual customer experience regarding handsets across both applications and geographical locations. Doing so allows them to react to network errors quickly and adapt their network planning at more granular levels.

Provide enhanced functionality. Operators can assume a more advanced role in shaping customer experience by offering greater functionality to users and content providers. One example would be to optimize video streams for individual users based on better compression technologies. Operators can also focus on situating content delivery networks (CDN) at the edge of the network to provide a wide variety of services cost-effectively, from video streaming and software downloads to services that measure CDN performance.

Several prominent mobile operators are already experimenting with unlimited data offers, tapping the power of video codec software, which compresses and decompresses digital video to deliver unlimited digital services at a lower cost. Another example: some US operators are working with content partners to offer customers unlimited video streaming that does not count against the limits of their data plans.

The question is, why stop here? Intelligent policy control could do much more to create an excellent user experience – from prioritizing VOIP/video call connections to, for example, stopping larger background apps or content downloads in busy cells. Several regulators have shifted their position on net neutrality to allow for such policy control – e.g., the Dutch regulator ACM decided not to appeal the court ruling that stated that zero rating is allowed.

2. How can other connectivity technologies like Wi-Fi be beaten?

Mobile operators have several ways to close the gap with new connectivity players, ranging from innovative cost-down techniques to big data analytics to asset sharing. Effective approaches are, for example:

Reduce costs. Operators need to reduce their cost per megabyte to a tenth of current costs, among other reasons, to support new market plays such as unlimited data plans. To meet this difficult goal, companies should aggressively pursue spectrum licensing to create a stronger cost position and rework their network design by exploring alternatives such as microcells or Femtocells. For example, Femtocell features a portable mobile device that connects users directly to a standard broadband DSL or cable service and connects handsets to 3G networks indoors, such as in businesses or homes. Operators can also lower operating costs using software-defined networking and network function virtualization.

Ultimately, operators can drive a radical simplification of their network operations through initiatives such as optimizing operations support systems and business support systems and collapsing the radio access network and transmission systems to reduce costs while retaining quality and reliability performance. Other actions include simplifying products and productivity improvements.

Increase granularity and bolster data analytics. Operators can improve their cost efficiency by planning and operating their networks based on deeper insights obtained from advanced analytics. Instead of homogeneous "carpet coverage," operators can adapt network planning to individual locations. One US operator used small cells to address quality issues in specific areas instead of broadly expanding capacity throughout the network.

Pursue network-sharing models. Many operators already share parts of their passive – and in some cases, active – equipment with others. Network sharing allows operators to strengthen cost efficiency significantly, while also improving network quality. Passive sharing, e.g., sharing towers, is the most widespread arrangement, but by extending the concept to active network sharing, including base stations, transmission, and even spectrum, operators can further increase efficiency greatly.

3. Which regulatory issues are vital?

Regulations play a crucial role in shaping the telecommunications sector. Areas that are especially vital include industry structure (e.g., fiber wholesale regimes, tower and spectrum sharing) and competition, spectrum allocation (especially low band spectrum allocation principals and the emerging spectrum sharing options) and net neutrality. As a result, operators should put more effort into proactively shaping the regulatory agenda. While priorities will vary across geographies, the overall sector struggles with many of the same core issues. For example, whether operators should be able to use customer data to create experiences, similar to methods used by over-the-top players, or whether operators can gain additional support for accessing and potentially sharing new spectrum. Current regulatory themes that have the potential to impact operators substantially include:

Wireless spectrum. Operators should thoroughly understand 5G spectrum policy, both in the US and globally, as well as future high-priority spectrum bands, to sustain wireless and satellite industry growth, including millimeter wave and mid-band. Other areas to watch include international spectrum coordination and allocation in the ITU/WRC process, especially concerning competing uses for satellite and terrestrial services.

Spectrum auctions. Operators should seek lessons from the world's first incentive auction, recently completed in the US, including its applicability to future spectrum bands. Reviewing other, innovative auction methods used for regulatory allocation, including reverse and clock auctions, would also be worthwhile. Operators should additionally investigate best practices in governments' use of auctions.

Consolidation and M&A. Antitrust and competition authority approval are among the most sensitive regulatory issues. Other challenging trends and innovations include pro competitive horizontal consolidation arguments in areas such as wireless, wireline, and cable services.

Net neutrality. Given the renewed levels of uncertainty surrounding net neutrality, operators must understand their options in terms of the US and global outlook. The active US regulatory and legislative discussions on net neutrality are especially relevant. Operators should also work through the potential impact and interplay of regulatory decisions on business models and the mobile industry's structure, especially in terms of their impact on broadband and wireless over-the-top video distribution.

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With other technologies and solutions nibbling at its core business, the mobile industry faces a tipping point for which it may be unprepared. The companies that position themselves to maintain the primacy of their networks today will benefit from stronger brands and improved cost positions tomorrow.

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