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Flashpoint
Small cells

Big impact on
seamless connectivity



Small cells: Big impact on seamless connectivity

A telecommunications technology that has long been a behind-the-scenes star for discrete applications is becoming a more prominent and more pervasive player across all geographies. The technology—small cells—is having an increasingly big impact on how we connect today.

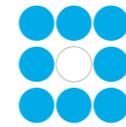
Consumers' unrelenting thirst for more content—and for deadspot-free connectivity—has left wireless telecommunications carriers with a critical challenge: How do you navigate spectrum and radio-technology obstacles to give consumers the pervasive, seamless connectivity that they're demanding?

Small cell technology has quickly emerged as an answer to that question. In sports and entertainment venues, on campuses, and in other limited environments, small cells have long served as a

solution to deliver wireless voice and data communications efficiently and effectively. With small-footprint hardware attached discreetly to fixtures such as lamp posts, signs, and other simple structures, small cells have offered a way to rapidly deploy the power of a network with precision and customization.

While small cells offer promise and excitement for the industry, they come with some new considerations that carriers, communication service providers, and other players in the telecommunications ecosystem will have to weigh as they move forward. Knowing the issues, as well as the possibilities, will remain essential.

Key observations



Why small cells now?

Some carriers are viewing small cells as the next big thing for patching coverage holes with surgical precision and for optimizing signal strength, creating denser network footprints.



A strategic play

The migration of small cells from targeted venues to the world at large presents both strategic challenges and opportunities for key players.



Smart network design

Shifting from a tower mindset to a mindset focused on small cells will require organizations to look beyond their conventional ways of thinking about design and engineering.



The importance of organizational capabilities

The processes and tools for overseeing conventional network deployment and rollout might not work so effectively in the new era of small cells. The industry will require a diverse and potentially new set of capabilities—from process automation to reporting.



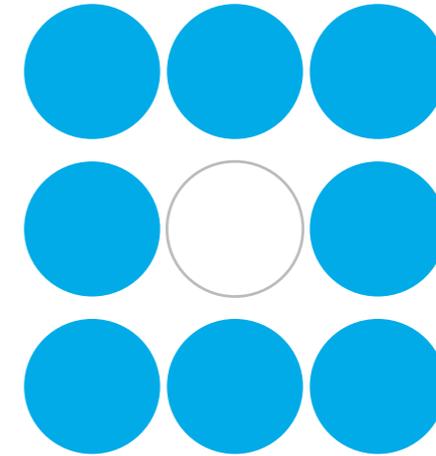
Opportunities for innovation

The rise of small cells gives rise to new technologies and innovative new models—in the ecosystem for building and maintaining networks as well as in the services delivered via those networks.

Why small cells now?

Some carriers are viewing small cells as the next big thing for patching coverage holes with surgical precision and for optimizing signal strength, creating denser networks. The broader deployment of small cells has become a more attractive strategy because the technology is nimble, quick to install, and in many ways are more affordable than constructing large conventional towers. The “install anywhere” aspect of the technology also can help carriers deal with limitations on available spectrum by leveraging higher frequencies for focused coverage and capacity requirements. And ultimately small cells—by virtue of their pervasiveness—can provide much needed infrastructure to support the emerging Internet of Things (IoT), in which more sensor-enabled wireless devices create a rich new world of connectivity and interactivity.

Helping to drive the shift to small cells: highly mobile consumers, who continue to gobble up a rich blend of media coming at them through a variety of formats. Consumers want that content made available to them via telecommunications networks as they shop, dine, exercise, run errands, or travel. And they want it literally everywhere—in the deepest urban canyons, on the street corners of tiny towns far off the beaten path, in tucked-away corners of commercial buildings, on their front porches, and in the middle of sprawling public spaces. These are areas in which small cells can excel.



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A strategic play

Small cells traditionally have offered a truly tactical solution—pinpoint applications for pinpoint needs. But as small cells move from targeted deployments to more outward-facing applications that allow carriers to densify their networks and plug coverage holes, the word “tactical” fades away.

Carriers that embrace small cells should move quickly beyond dabbling, instead viewing the technology as a strategic enabler rather than a tactical fix. For the larger players, small cells can offer a strategic path to market solidification while helping to reduce or eliminate costs associated with services such as roaming (and the need to pay competitors for such services). For smaller carriers, small cells offer a rapid and potentially cost-effective way to grow networks efficiently and strategically.

Business leaders who recognize the growing importance of small cells should take proactive and forward-thinking steps to position their organizations for the future. Key activities will include identifying priority markets in which bandwidth could become an issue, deploying small cells prudently within those markets, and proactively assessing emerging deployment opportunities rather than reacting to coverage holes as they occur.



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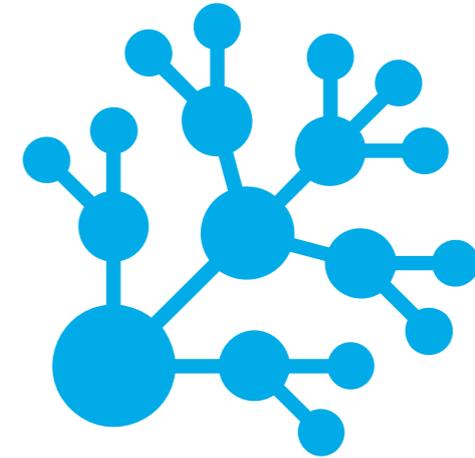
Smart network design

Small cells—typically attached to existing public utility infrastructure—represent a fundamentally different challenge compared to towers. As players shift from the traditional “tower” mindset, they’ll need to get smart and strategic about their new network designs to think beyond conventional principles for telecommunications design and wireless engineering. Deploying a small cell solution can offer an affordable alternative to deploying a new tower, but deploying many small cell networks without a strategic plan or detailed research on products, sites, and leading practices can result in waste, inefficiencies, and costly learning mistakes. Companies will want to get things right the first time.

Getting things right the first time might include equipping the network design team with the

tools and information they’ll need for identifying small cell candidate locations that have the highest chance of success when it comes to the permitting process and the physical application of the small cell itself. For example, design teams will need information on intergovernmental relationships and infrastructure usage restrictions. They’ll need specifications on the existing utility poles within jurisdictions. They’ll need information on available backhaul options and power options.

Such an approach can enable design teams to deliver very prescriptive, actionable information to field teams, allowing them to focus less on candidate identification. The end result should be a lean field verification process.



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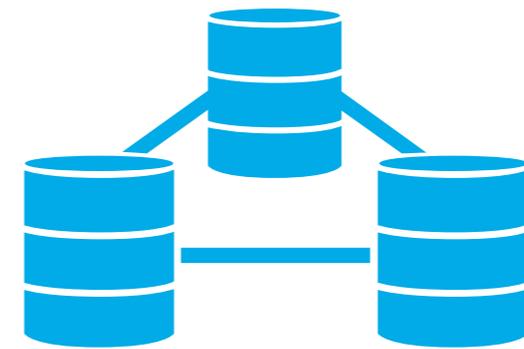
The importance of organizational capabilities

The complexity involved in undertaking thousands of small cell projects across a nation or a continent will require both a heightened level of organization and governance. Working with thousands of new municipalities, new layers of regulations, new infrastructure partners, and new technology vendors creates a new web of requirements and expectations. And as the coverage footprint grows denser, additional burdens emerge for managing equipment, logistics, and data. Operations and maintenance functions will have to work in harmony. Carriers cannot presume that their existing organizational processes, tools, and infrastructure will support the intricacies and nuances associated with a small cell explosion.

The emergence of small cell solutions requires the industry

to develop and refine a diverse and potentially new set of organizational capabilities—process automation, project cost baselines, workforce management technologies, mobile apps to support field workers, regulatory processes, vendor certification, real-time performance monitoring and analytics, and reporting frameworks, just to name a few. Reporting becomes especially critical amid the new, more complex landscape. And while real-time monitoring and analysis of networks is a strong suit for some companies today, there will be room for improvement.

Having the right tools—such as repeatable templates, blueprints, and procedures for the new small cell model—can help automate and accelerate activities, minimize manual intervention, and maximize user productivity.



The processes and tools for overseeing conventional network deployment and rollout might not work so effectively in the new era of small cells. The industry will require a diverse and potentially new set of capabilities—from process automation to reporting.

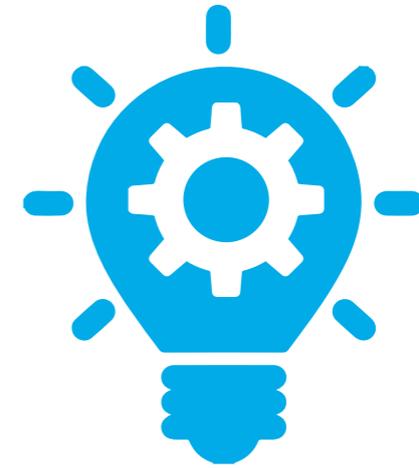
Opportunities for innovation ahead

As small cells promise denser networks, more pervasive services, and more reliable connectivity, new opportunities for innovation should begin to emerge. There is room for innovation not only when it comes to the form and the performance of the core small cell technology itself, but also in the broader network ecosystem, as well as in the services that more robust networks can enable.

As layers of new vendors begin inserting themselves between the carrier and the consumer, the industry can expect innovations in business models, vendor collaboration, and products that support deployment—from new tools and services for optimizing signal strength and hardware

placement to new advertising concepts that piggyback on the transformed network. A denser network also can support better triangulation of a user's location, opening up new opportunities for location-based features and services—as well as supporting future “connected car” applications.

Meanwhile, if data costs remain essentially the same, and users can suddenly pull down content consistently from more locations, the small cell explosion could open up more opportunities for over-the-top services, as well as new partnerships for delivering those services.



The rise of small cells gives rise to new technologies and innovative new models—in the ecosystem for building and maintaining networks as well as in the services delivered via those networks.

Let's talk

The potential for small cells is anything but small. Determining how to operate effectively amid this technology explosion requires a focus on developing new strategic mindset. Want to sharpen that focus and explore some other big ideas about small cells? We should talk.

In the meantime, be sure to check back for a [monthly dose](#) of the latest issues driving the future of technology, media, and telecommunications companies.

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