

# Bold ideas to transform infrastructure

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There's much more to be done to ensure we can deliver against 21st-century demands, according to participants in McKinsey's Global Infrastructure Initiative.

**Infrastructure provides the foundation** for our global society to operate and thrive. Yet our research suggests that nearly 40 percent of the \$9 trillion invested in infrastructure annually is poorly spent because of bottlenecks, lack of innovation, and market failures. In late 2015, our third Global Infrastructure Initiative (GII) summit explored how innovation and technology can both improve the delivery of critical infrastructure and get more out of existing infrastructure. After three days of discussion, we concluded that, while there's been some progress, the speed and scale of efforts to address infrastructure issues have varied. We then identified more than a dozen themes that can be applied when planning, financing, building, and operating infrastructure.

## **Plan: The public-sector role**

It's essential to develop a sound infrastructure-investment plan—one that serves current and future user needs, drives improved economic growth, and minimizes socioeconomic disparities. But doing so requires translating bold ideas into feasible projects that are politically durable and adaptable when dynamics change. Several elements are critical: working with decision makers at a local level to bring projects to life; engaging stakeholders and potential partners from the outset, cocreating a vision of what is possible and the potential benefits; working with governments to engender public support and manage expectations for megaprojects; and encouraging experimentation and parallel processing in design, engineering, environmental reviews, and procurement to reduce time and allow for much-needed innovation.

## **Finance: New strategies for bankable projects**

Despite annual global spending of about \$9 trillion on infrastructure assets across all classes, an additional \$15 trillion to \$20 trillion will be required over the next 15 years. To achieve projected global economic growth, GII participants believe it's crucial to develop innovative financing approaches. Among the priorities with regard to financing: collaborating with governments, development-finance institutions, and the private sector to develop a pipeline of projects that meet investor expectations; establishing public-sector infrastructure-delivery

organizations to help reduce political risks; looking beyond traditional funding sources to get better risk-adjusted returns; and, when political support for privatization is lacking, pursuing long-term leases and operating agreements instead.

#### **Build: Smarter, faster, cheaper, better**

Innovative management practices, tools, and materials are creating opportunities to disrupt and improve infrastructure delivery—in fact, our research finds that such increased productivity offers potential savings of \$400 billion a year. Some of the approaches that could be used: adapting business models and technologies from outside the traditional construction sector; creating institutional memory by using technologies such as building-information modeling; and anticipating and managing the impact of disruption on people from forces such as urbanization, aging, and global interconnectivity.

#### **Operate: Maximizing the value from existing infrastructure**

Applying innovative approaches to optimize the use of existing infrastructure while minimizing the cost is a high-value strategic investment. The McKinsey Global Institute, for example, estimates that almost \$500 billion in infrastructure costs could be saved annually through better use of disruptive market models, smart management, and technology. GII participants cited several forces here: using real-time data and virtual technologies to improve operational efficiency; accepting that the sharing economy and autonomous vehicles will be part of the future, driving rapid and dramatic shifts in consumer choices; and using big data and analytics to increase capacity, reduce maintenance and operating costs, and improve the reliability and safety of infrastructure assets.



The infrastructure sector has improved the way infrastructure is delivered and operated since GII was launched in 2012. But there is still much to be done. By embracing innovation, collaborating more effectively, and taking the bold steps necessary to deliver 21st-century infrastructure, we're hopeful that we can continue to improve and extend the foundation on which the global economy functions. □

[Download the full report on which this article is based, \*GII 2015: Post-event summary\*, from McKinsey.com. Learn more about McKinsey's Global Infrastructure Initiative and explore its latest content, on \[globalinfrastructureinitiative.com\]\(http://globalinfrastructureinitiative.com\).](#)