“Where will the money come from?” would seem to be the question of the day in infrastructure circles. Governments from India to Ireland are under pressure to find new sources of funding, preferably at cheaper pricing and longer tenors. Basel III hems in infrastructure development on one side and Solvency II on another. Shrinking economies don’t have money; growing ones face a swelling bill for new infrastructure.

There is no shortage of projects being proposed, some with price tags running into several billion dollars. But when investors are presented with a project, they do not always find it investable. Even where private finance is available, not every project can be made attractive for all parties; it may require expensive wrangling and restructuring to do so. Capital is left parked at a time when it is needed more than ever.

Infrastructure investors and builders do not have far to look for suggestions for addressing the funding crunch, from public- and private-sector project-bond initiatives to government-guarantee schemes and infrastructure-debt funds. These are important and valuable solutions to a problem of liquidity, but in reality the industry faces a greater problem of growth.

**Less an infrastructure gap, more a chasm**

Drawing on an extensive database of historical infrastructure spending as well as a new approach to roughly size infrastructure needs, new research from McKinsey’s Infrastructure Practice and the McKinsey Global Institute estimates that $57 trillion will need to be spent on building and maintaining infrastructure worldwide between now and 2030—just to keep up with global GDP growth.¹

If anything, this estimate is on the conservative side. It is restricted to a number of core infrastructure classes—transport, power, water, and telecommunications. It does not include the cost of addressing historic backlogs in repair and maintenance, nor of “future proofing” infrastructure against the increasingly volatile effects

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¹. For more details, please refer to the research conducted by McKinsey’s Infrastructure Practice and the McKinsey Global Institute.
of climate change, and it does not account for any efforts to accelerate development spending in the least-developed countries.

Yet the scale is daunting: fully 60 percent more than the $36 trillion spent in the same 18-year time frame just ended and greater than the estimated value of all the world’s infrastructure assets today. And this is a modest estimate.

Look at it that way, and the challenge of squeezing a few billion dollars more out of one country’s pension funds or another’s infrastructure bank—initiatives that do not always cross national borders—soon pales into insignificance. Even if institutional investors were to achieve their target allocation in infrastructure, it would mean additional funding of only around $2.5 trillion by 2030. Neither the public nor the private sector has acknowledged the scale of the infrastructure gap, much less admitted responsibility for it. Neither side can resolve this alone; both will suffer if nothing is done.

**How to save $1 trillion a year**

The solution the research proposes is as surprising as it is potentially game changing. It does not mean tearing up project finance, selling all public assets, or taking other radical approaches, because the evidence doesn’t show that they are effective. Instead, it suggests procuring and managing infrastructure more productively.

By making small but important adjustments at every step of an infrastructure project, from the outline business case to routine operation and maintenance, we estimate that 40 percent cost savings can be made on infrastructure investments across the world, the equivalent of $1 trillion a year, every year, until 2030.

This is not the result of a theoretical model but of identifying quantifiable benefits from proven best-practice methods in 400 case studies. These methods are the exception to the rule in an industry surprisingly resistant to performance enhancement. By implementing these practices globally and allowing for geographical variations, we believe that asset owners can attain the target.

The savings derive from three main levers: optimizing project identification and selection, streamlining project delivery, and getting more out of existing infrastructure. Our case studies, while focused on the actions carried out by governments, procurers, and contractors, open the door to investors to identify and call for best practices to be implemented from day one—particularly in asset-ownership models where the delivery of construction, renewal, and maintenance is often contracted out.

Streamlining project delivery can be taken up by investors from their earliest involvement. In most cases, in the absence of guidance from authorities or owners, project bidders and technical subcontractors have avoided designing and building for productivity. Design-to-cost principles, which can now prevent overspecification in project design, are just one example.

In the operational phase, project owners can take advantage of operation and maintenance efficiencies such as a total-cost-of-ownership approach, allowing them to find the sweet spot between routine maintenance and major renewal.

In addition to saving money on existing assets, productivity means not spending money on new projects when it is possible to get more out of existing infrastructure for the same, or a better, outcome. Too often, notably in the transport sector, adding capacity simply stimulates demand,
If the industry is to save $1 trillion a year, it must also stop investing in futile or badly structured projects. . . . By building less, the industry can build more of what it really needs.

leading to yet more congestion. Demand management is a cheaper option, and one of the best tools is user charging.

User charges reduce the need for costly new construction and allocate demand that would otherwise put a greater strain on infrastructure. For instance, peak charging for electricity in California has resulted in the lowest consumption in the United States, while road pricing has reduced congestion problems significantly in London and Stockholm. Imposing charges on the public is inevitably controversial. But shifting the burden of repayment from government to the end user breaks the demand-capacity feedback loop and captures the economic benefits that more productive infrastructure brings.

If the industry is to save $1 trillion a year, it must also stop investing in futile or badly structured projects. This will be a challenge, given the incentive for the public and private sectors alike to overemphasize the benefits of a project and favor eye-catching new builds over getting the most out of existing assets. The financial sector needs to engage early with government, even before an outline business case is on the table, to ensure that perverse incentives are resisted and financial structures—including a sufficient return to cover investment—are sound. Only then can capital be freed up for infrastructure renewal and construction that works and makes a difference by supporting GDP growth. By building less, the industry can build more of what it really needs.

Although some of these measures may sound like common sense, the scope for productivity gains in the infrastructure sector should not be underestimated. Indeed, while other industries have made dramatic advances in productivity over the past century, there have been no comparable gains in infrastructure investment. Many countries and project sponsors apply bits and pieces here and there, but few consistently apply all of the best-practice measures—all of which have been proved, tested, and had their impact measured in the past decade. Infrastructure productivity can be implemented in emerging as well as developed markets, irrespective of capital structures available.

Following these best practices can reap large benefits for the public sector. Better project selection as proposed above not only leads to better infrastructure but also lowers the risk premiums payable to private parties. Cheaper projects will better fit within funding envelopes and, in time, project-cost estimates should come down.
Contractors should welcome productivity savings as they increase their competitiveness and ability to budget for and win more contracts. Investors will see their rates of return increase and their capital go further. These substantial, tangible savings have profound implications for the financial modeling of new projects and accounting of existing assets. With a lower initial investment, the same revenues and coverage ratios can be achieved. Through tighter contract structures, risk profiles can be improved. Projects that were hitherto expensive or required unacceptable levels of subsidy may be transformed.

An interventionist, active approach to financing is essential. And while most investors may be less familiar with this method than private-equity players and those involved in project restructuring are, it is not necessary to exercise cure rights in order to practice active ownership.

If the infrastructure gap is to be closed through the championing of best practices, then it will require a new level of cooperation between public and private sectors: one that reflects the size of the challenge and how it puts whatever competing priorities they have in the shade. The imperative to deliver better infrastructure and meet the growing demands of the world population is a moral as well as an economic one; as global players, infrastructure investors are well placed to meet the challenge and do not need to wait for governments.  

1 For more, see "Infrastructure productivity: How to save $1 trillion a year," McKinsey Global Institute, January 2013, on mckinsey.com.

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