

10 Emerging Trends for 2015

Trends that will change the world of infrastructure over the next 5 years

FORESIGHT

A Global Infrastructure Perspective



Infrastructure is a story of evolution. It drives social and economic development. It enables us to renew our public services and physical surroundings. It allows societies, economies, companies and individuals the opportunity to live to their full potential.

At the same time, the way we approach infrastructure itself is also evolving. Some of the shifts in the sector are sudden and disruptive. Others evolve slowly, ebbing and flowing in and out of political consciousness as governments and businesses react to changing circumstances.

For the past 3 years, KPMG's Global Infrastructure practice has tracked the annual tides and trends driving the world's infrastructure markets. And each year, we have published our perspective of the top 10 trends that will likely impact the infrastructure market over the coming year. Welcome to our short report on Emerging Trends in 2015.



A number of the trends that we identified last year remain key issues today. Many have themselves evolved. In 2014, we argued that projects were stuck in pipelines; this year we have noted significant moves by governments, multilaterals and development banks to ‘unclog’ the pipeline. Cities were also a big topic in 2014 and continue to be so in 2015, but with a larger emphasis on urban mobility. Asset sales and improved asset management played a significant role in our trends report last year and again this year.

Other trends from last year continue to simmer. Affordability of infrastructure remains a key challenge, as does the need for greater transparency and control against corruption. Worryingly, technical skills continue to be underdeveloped and the international demand for infrastructure professionals and capabilities will only continue to grow.

Not surprisingly, we have seen a number of new trends rise up the agenda as societies struggle to balance necessity against opportunity in prioritizing their infrastructure spend. Political uncertainty and regulatory reform are becoming key risk factors influencing global investment decisions. Water scarcity, security of supply and the silent battle to control resources are already starting to impact infrastructure decision-making. Development banks and multilaterals are recalibrating their targets to focus on leveraging private finance in order to improve the flow of capital towards developing world projects.

Once again, we hope that this year’s insights provide a worthwhile perspective on key trends and opportunities facing the sector in 2015. To discuss these trends and their impacts in more detail, we encourage you to contact your local KPMG infrastructure team.



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Trend 1

Governments take action to unclog the pipeline

Infrastructure has never been higher profile. The G20 Summit in Brisbane in November 2014 put the topic of infrastructure squarely on the global agenda with governments around the world recommitting themselves to helping bridge the infrastructure gap by implementing more efficient approval processes and reducing barriers to private investment.

The G20 Summit also saw the formation of a Global Infrastructure Hub which – if armed with the right staff, scope and

priorities – could help unlock trillions of dollars in private infrastructure spending. It remains to be seen, however, whether the Hub will also take on the much more difficult and complex task of targeting the underlying enablers that many less-developed markets will need in order to sustain investment.

At the national and local level, we have also seen a growing number of governments starting to take a more interventionist approach, the most extreme example of which is probably the UK's US\$60bn guarantee facility. Public authorities are being driven to intervene less by a desire to fill the capacity gap, and more by a lack of trust in private sector financing markets and a deep desire to accelerate delivery.

Taken on balance, the move towards greater government intervention – at

the multilateral and the national level – indicates that the public discourse has started to shift away from merely admiring the problem of infrastructure delivery to taking action to solve it.

“...the public discourse has started to shift away from merely admiring the problem of infrastructure delivery to taking action to solve it.”

Trend tracker: Evolving

This is a continuation of a trend we identified in 2014 (*Release the projects*); however, this year focus has shifted from awareness to action.



Trend 2

Political and regulatory risks rise up the agenda

The infrastructure community is no stranger to managing risk. But over the past year, many within the wider community – particularly investors and developers – have become increasingly concerned about the potential risks associated with political and regulatory uncertainty. The reality is that – compared to private equity – infrastructure provides relatively low returns but requires equally low risk. This is, after all, a large part of the attraction for institutional investors.

This is not just a problem affecting developing countries; it applies equally to the developed world. One need only look at the long list of much-needed infrastructure projects that have stalled as a result of election results over the last 12 months – such as India's proposed Navi Mumbai International Airport (which, after sitting idle for more than a year, is happily back underway). Investors are understandably concerned that they might pour millions of dollars into a project, only to watch it die at the ballot box.

It's not just elections that are causing infrastructure providers and investors to sweat these days. So, too, is the uncertainty surrounding regulation. In many markets, we have seen a significant shift in mindset that seems to favor consumer protection over investor protection. But while this may appeal to the electorate, it can also deflate investor confidence and undermine contract certainty.

Clearly, governments must strive to depoliticize the infrastructure agenda. Many are already taking valiant steps by developing national infrastructure plans



and robust processes for evaluating needs and prioritizing projects, but more must be done.

A politically-charged and fractious infrastructure agenda hurts in many ways; it can slow economic growth, drive away interested investors and damage the potential credit ratings of any future projects. It's time for some long-term thinking about meeting the present and future needs of society and a better appreciation of the risk/reward dynamics for investors in order

to ensure a steady flow of capital to finance worthy projects.

Trend tracker: New and emerging

While political risk and uncertainty have always been present, it is now threatening to impact global infrastructure investment in both developed and developing economies.

Major interdependencies: Politics

Infrastructure is – and always will be – a fundamentally political field of endeavor. Yet over the past few years, we have seen a significant increase in the influence of politics over the hard realities of infrastructure development. The challenge often comes down to long lead times and a lack of patience – infrastructure projects can be slow to develop and challenging to build. Politicians want to show positive impacts within their term of office but can't always rely on projects to correspond to election cycles, nor to their budget and financing expectations.

This year's report Emerging Trends report contains a number of issues that – in large part – are driven by politics and political issues. Market reforms, political risk, government intervention in financing markets, investment prioritization, public sector asset sales and urban mobility are all the stuff of political platforms and electioneering. The challenge is separating political rhetoric from the cold, hard needs of society.

Trend 3

Market reforms: status quo is not fit for purpose

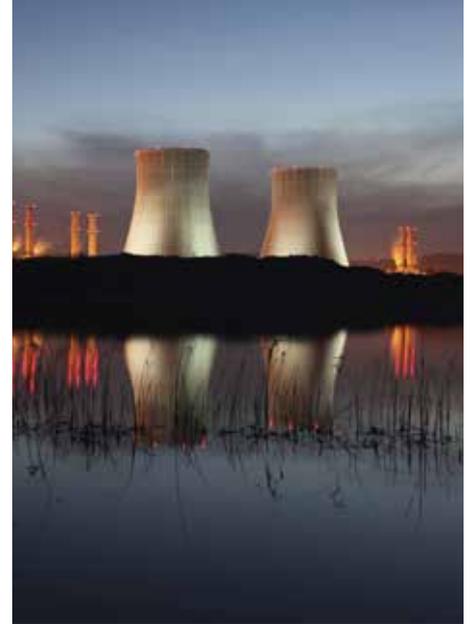
Over the past year, we have seen significant moves on the part of governments to reform the market structure across a number of infrastructure sectors. This is, in large part, due to a recognition that current market systems may not deliver the investment and efficiencies needed.

Many infrastructure and regulatory leaders are starting to recognize that traditional price-cap regulation – while popular with consumers – may be insufficient to enable utilities and other regulated sectors to meet the growing demand for additional capacity. It's also because the dynamics of infrastructure

and utility markets are changing with the introduction of new generation sources and technology; gaining efficiencies from smart grids and metering, for example, often requires change to regulation.

Reform in Japan's electricity market and the UK's water sector are two of the clearest examples of government action, but many other markets are also starting to change. Regulators and politicians need to balance two key responsibilities as they consider new regulation and market reforms. The first

is to provide certainty to investors that the regulatory regime will remain stable, consistent and supportive of ongoing investment. The second is to create mechanisms that balance the need to protect consumers with the need to ensure that investors receive sufficient returns to allow them to continue to invest in assets.



Trend tracker: New and evolving

Market reform is nothing new. What is new however, is the breadth and scale and the willingness of governments to use market reform to respond to infrastructure demand.

Once again, governments and regulators will need to take a long-term view of their infrastructure needs, growth projections and demographic forecasts to make sure they are creating a sustainable and encouraging environment for infrastructure investment.

Trend 4 The shifting role of multilaterals and development banks



With renewed focus on enhancing the flow of long-term capital for infrastructure development – particularly into developing markets – we have seen a significant shift in the operating models and performance targets of many of the world's multilateral and development banks.

In last year's *Emerging Trends* report, we noted moves by the Asian Development Bank to shift its engagement model and place more focus on assistance during the development stage of a project. In the past year, we have seen the trend shift further. Rather than measuring themselves purely on their quantum of lending, a number of today's development banks and multilateral institutions are increasingly moving towards targets related to the amount

of private sector capital they are able to leverage.

This is a welcome development. We believe that development banks and multilaterals have a vital role to play in shaping the development of infrastructure markets. However, concerns have also been raised that 'subsidized' development loans can distort local infrastructure debt markets by crowding out bank financing and other private debt solutions. Yet we also firmly believe that the public and private sector can happily co-exist. Governments who offer subsidized lending should consider directing their subsidies through other channels. These issues could be effectively mitigated if governments were to concentrate on acting as catalysts for private sector investment.

Trend tracker: Evolving

A development of the trend we identified in 2014 (*Release the projects*); expect this trend to continue into 2015 and beyond.

“Governments who offer subsidized lending should consider directing their subsidies through other channels.”

Evidence suggests that there continues to be an expansion in the market in terms of products and capacity. Over the coming year, expect to see the establishment of new development banks (most notably the formation of the US\$100 billion Asian Infrastructure Investment Bank, led by China). We also expect to see Export Credit Agencies, particularly from Asia, become even more influential and aggressive as they seek to support their domestic suppliers win international business.

Major interdependencies: Long-term capital

While some markets (particularly in Asia, Africa and South America) continue to struggle with a lack of long-term capital for infrastructure development, there is now a growing pool of debt and equity available for investment into infrastructure. The challenge is in matching capital to worthy projects.

In the US and Canada, for example, long-term debt and equity capital can be secured with comparatively few restrictions. The much-anticipated entry into the market of Asian institutional investors (such as insurance companies, pension funds and sovereign wealth funds) promises to add even more capital to the mix. Access to long-term capital is a necessity for infrastructure investment and renewal. More must be done to ensure capital can flow to the regions and projects that can deliver the greatest returns.

Trend 5

Big complexities start to impede big projects



As we pointed out in last year's Insight magazine, one cannot help but be awestruck by megaprojects. When huge budgets, massive footprints, unanticipated transformative benefits and all the thrills and spills of a theme

park ride come together in one exhilarating project, it's hard not to be enthralled.

Not surprisingly, the world is full of large ambitious projects aimed at solving major infrastructure challenges. Dozens of important megaprojects that hold the potential to change the way people interact with their infrastructure and their surroundings are either in planning or development.

But it's not just enthusiasm for megaprojects that runs high; so too does the complexity. Over the past year, we have seen a number of much-needed mega and cross-border projects delayed (some indefinitely) as project managers, investors, developers and owners grapple with the massive complexity of moving larger projects from the drawing board to the field and across the finish line.

Some of the challenges are fairly easy to identify. Some projects are unaffordable and struggle to secure appropriate financing (much of which is

currently provided through development and export credit banks). Others are frequently tied up in red tape and approvals.

Likely the more persistent and pernicious issue, however, relates to skills (a challenge certainly not limited to megaprojects). The reality is that navigating megaprojects through these massive complexities requires a level of experience that simply can't be taught in a classroom. Given that many of the more experienced project managers are now on the verge of retirement, we expect the competition for skilled talent to continue to be a trend for many years to come.

Trend tracker: New and emerging

With a large number of megaprojects announced in the past few years, there are expressed concerns that the complexity of these projects may be overwhelming and, as such, may render them undeliverable.

Trend 6

Striking the right balance between necessity and opportunity

Evaluating which infrastructure projects will deliver the greatest good for the capital available is not an easy task; difficult choices and concerns about affordability will be pervasive as governments try to prioritize limited infrastructure spend.

The good news is that more and more countries are now starting to develop

and implement national infrastructure plans aimed at 'depoliticizing' infrastructure decision-making, creating a long-term vision and improving the investment climate. The challenge, however, is that many of these plans tend to place a disproportionate value on economic infrastructure (not wholly surprising given most markets' single-

minded focus on encouraging growth) versus social infrastructure.

Ultimately, this is a question of long-term versus short-term priorities. Yes, economic infrastructure (when developed properly) can deliver a much-needed shot in the arm to national and local economies. But over the long-term, social infrastructure is also needed

to encourage the economic inclusion of people moving out of poverty which, in turn, should increase the tax base and improve the population's ability to pay for infrastructure. Those with rapidly-aging populations will also want to focus on ensuring they invest in the right social infrastructure to support a demographic that – arguably – will struggle to pay for the services they will ultimately need.

How then should governments and infrastructure planners balance economic benefit against social need given constrained financial resources? Ultimately, it will take a national consensus that brings together economic and social imperatives as well as more effective methodologies for evaluating those benefits. But planners will also need to remember that it's not a choice of one over the other, but rather a well-planned and executed combination that overlays long-term objectives on top of the realities of immediate need.

Trend tracker: New and emerging

While political risk and uncertainty have always been present, it has now reached a point where these are directly impacting global infrastructure investment.



Major interdependencies: The skills and capabilities gap

In 2014, we noted that the war for experienced infrastructure talent was heating up. The lack of skills and talent, we said, would remain one of the greatest drags on the world's ability to fulfil the aspirations of its youth and meet growing infrastructure challenges.

Unfortunately, little progress has been made in the past year. Indeed, one of the greatest barriers holding back today's infrastructure pipelines is not lack of capital or resources, but rather a dearth of appropriately-skilled project managers and engineers.

Training programs such as those in Europe and Asia will help fill some of the gap, but the reality is that today's complex projects require real experience and on-the-job insight, neither of which can be taught but must be learned. Infrastructure providers, developers and owners will want to think about how they might be able to retain their more experienced professionals while ensuring they are taking the time to share their insights with newly-trained peers.

Trend 7 Striving for better asset performance

As governments aim to improve public services, many are starting to benchmark the performance of public utilities against best practice and explore alternative delivery and ownership structures. Not surprisingly, a growing number are looking to the private sector to help.

As a first step, many public utilities around the world are undertaking a

Trend tracker: Evolving

This is a continuation of a trend that we identified in both 2013 and 2014. However, the trend remains as relevant today as in years past and will continue to appear on the agenda for some time to come.

business transformation process – looking to evolve the way they operate and focus more closely on improving asset efficiency. This may involve introducing private operators and leveraging commercial models in order to improve performance and customer experience.

By now, it is also widely recognized that privatized assets or – to use the politically correct term – 'asset sales' can perform better in terms of efficiency, cost and customer experience than their state-owned counterparts. Governments are also keen on asset privatization for financial reasons: partly because privatization means that future investment can be moved off of the public books; but also because returns from asset sales

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can be ploughed back into developing new infrastructure (which, in turn can be privatized in a virtuous cycle of investment recycling).

While we expect to see an increase in asset sales globally, it is clear that deal flow may always be restricted in situations where privatization or restructuring of government assets

remains a politically-charged topic. Success will require politicians, regulators and the private sector to work together to ensure that deals and regulation are structured appropriately to balance the needs of consumers and investors, while still gaining the support of voters.



Trend 8 Resource scarcity drives investment



All governments want to improve their energy, water and resource security. Many recognize that scarcity of these key elements will hobble growth and – very possibly – lead to significant political conflict in the future.

This year's *Infrastructure 100* report underscores the issue: more than a third of the listed projects are directly related to harnessing, transporting or using resources. Whether it's the UK's Hinkley Point C Nuclear Power Station (which should help improve energy security) or the Ring of Fire Mining Project in Canada, significant investment is now being funneled towards securing and extracting resources. However, many of these projects are reliant on high energy prices, and the new reality of a much lower oil price threatens to undermine investor confidence, disrupt the market and slow development of major projects like North America's Keystone Pipeline.

Water projects are not driven by price, but scarcity has (justifiably) become

a particular point of concern in many markets which, in turn, has driven increased investment into desalination plants, water treatment, sewage and water distribution assets. Water efficiency has also become a key objective for infrastructure assets, particularly given that the majority of the world's water is used for industrial and agricultural purposes, with irrigation and coal-fired power stations proving particularly thirsty customers.

The development of new and more efficient infrastructure will be key to reducing the impact of resource scarcity, but it is only one component. More valuable still would be the removal of existing subsidies on water and energy (a practice prevalent in both developing and mature markets) which

Trend tracker: New and emerging

The number of major projects that – seemingly – are focused more on securing key resources than filling an urgent need is rising dramatically.

will effectively both drive conservation and better align costs and revenues to the asset life-cycle.

Here, too, progress is being made. For example, China, which suffers significant water shortages in a number of regions, is trialing the trading of water rights between municipalities, with water-rich areas entitled to charge a truer, unsubsidized price.

Major interdependencies: Technology

One would be hard-pressed to deny the transformative power of technology. Just look at how technology has changed the telecoms, banking or retail sectors. Yet the infrastructure sector has – to date – seemed unable to embrace technology to deliver fundamental improvements in order to keep up with the pace of change in the world around it.

Electric vehicles still speed along highways built almost 100-years ago. Energy and power continues to be delivered across distribution grids. Much of the world's internet traffic still moves over traditional copper wire.

This is a lost opportunity. Technology may very well hold the answer to many of the biggest problems facing the infrastructure sector today: efficiency, productivity, safety, longevity and costs can all be enhanced by leveraging new and available technologies.

We should aspire to more than simply incremental improvements. Rather than doing more of the same, infrastructure developers and owners should be asking how they might take a different or new approach to solve age-old problems. Given the critical role infrastructure plays in society, we should be the leaders of innovation, not the laggards.

Trend 9

Infrastructure players go global

While most infrastructure is decidedly local by nature, it is also quickly becoming a global game where investors, operators and developers transcend their national borders to take advantage of new and emerging opportunities where ever they exist.

Investors have long taken a more global view of infrastructure. And now, with the supply of capital often exceeding the available projects and competition heating up in the core established infrastructure markets, many investors are starting to look to emerging markets for investment opportunities that can offer more attractive risk-adjusted return expectations.

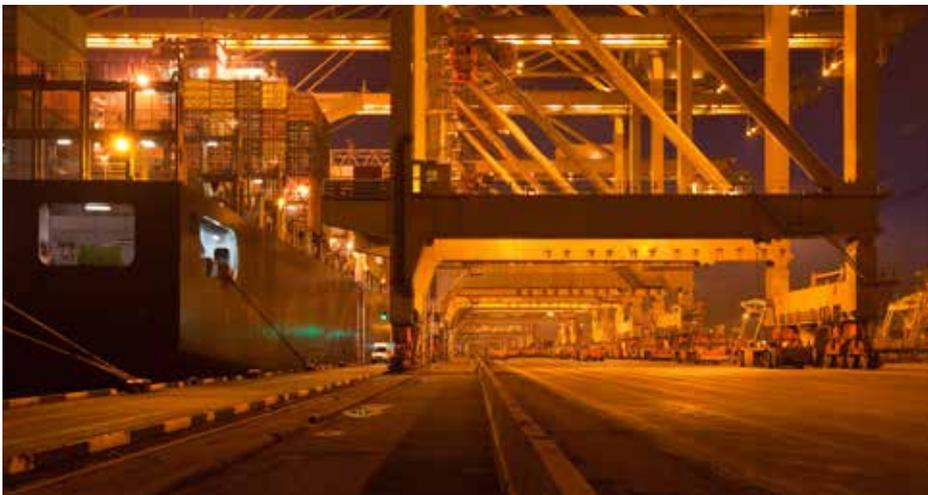
The last decade has also seen the emergence of 'global developers' such as Japanese trading houses, fast arriving Chinese firms or Spanish contractors forced to seek new opportunities outside their domestic market. All of these have successfully deployed capital and resources into dozens of projects outside of their home country.

But it is the rise of global operations organizations or 'concessionaires' that have been most visible over the past twelve months with specialist airport, railway, water, port and road operators as well as energy generators and distributors vying to compete for

tenders in both mature and emerging markets.

While this is certainly a positive development, providers must ensure that – in the rush to capture new assets and tenders – they take time to seriously consider the risks and opportunities in the markets in which they hope to operate.

“Providers must take the time to seriously consider the risks and opportunities in the markets in which they hope to operate.”



Trend tracker: New and emerging

The long-awaited shift of investors towards the emerging markets has finally taken hold. As with any new market opportunity, service providers are bound to follow.

Trend 10

Cities sharpen their focus on urban mobility

While urban areas continue to serve as a crucible of economic growth and development in most countries, the agenda of the city infrastructure debate seems to have focused more clearly on the issue of urban mobility over the past year. From the US\$2.3 billion Delhi Metro expansion through to the development of the Crossrail project in the UK, trillions of dollars' worth of projects are either in design, tender or construction around the world.

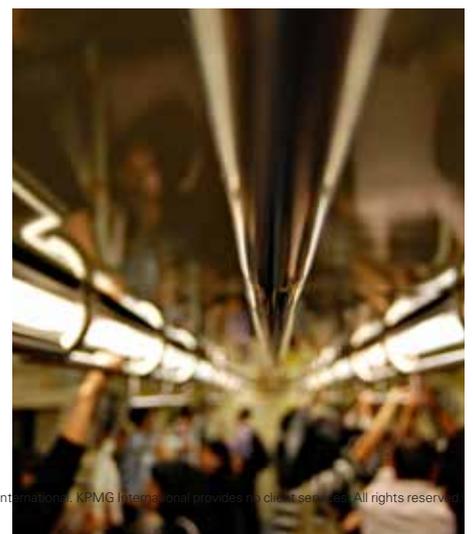
Urban mobility is critical. Not only does it allow for a freer flow of goods, capital and people within cities, it also provides a means for the world's urban poor to access jobs, social services and education opportunities. Raising the

urban poor out of poverty ultimately leads to larger tax revenues and more productive cities and urban mobility projects often deliver long-tail social and economic benefits far beyond the increased productivity and land values that form the basis of most cost/benefit analyses. The challenge is to adopt an appraisal methodology that can capture all these benefits.

Over the coming year, expect to see more urban mobility projects announced in almost every market (but particularly in those going into an election cycle). The opportunities for providers, investors and operators should be significant.

Trend tracker: Evolving

City growth was identified as a trend in both 2013 and 2014. Today, however the focus has evolved towards urban mobility and economic inclusion.



Big questions for 2025 and beyond...

How will the introduction of **driverless cars** impact infrastructure investment?

What impact will **commercial drones** have on society?

How will **3D printing** impact construction?

Will concrete and rebar still be the **dominant construction** approach in 10 years' time?

Which major cities will endure **blackouts and energy disruption**?

What impact would plummeting **oil prices** have on development and financing?

Will **China** emerge as the dominant force in the international infrastructure supply market?

Will there be a major – or even deadly – **cyber-attack** on a major infrastructure asset?

When will **India, Brazil and Africa** reach over-capacity of their ports?

Will more infrastructure executives land up in jail for **corrupt practices**?

What will the price of **oil** be in 2025?

Will '**asset recycling**' through privatization become more widespread as an approach to infrastructure funding?



cutting through complexity

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A Global Infrastructure Perspective

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