Emerging trends in 2013

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

2012 was a challenging year for the infrastructure sector. Many governments around the world struggled to bring projects to market and, as a result, pipelines were thin. Financing markets continued to be tight, economic stability remained allusive and activity subdued. Looking ahead, the foundations for future growth are being laid and – for many markets – the prospects are exciting.

In this special edition of Foresight, three of KPMG's infrastructure leaders (Nick Chism, James Stewart and Stephen Beatty) look back at 2012 and share their views on the ten trends that are expected to change the way infrastructure will be delivered in the future.

A year of continued uncertainty

Governments have remained under pressure this year, facing financial uncertainty and mounting demands for infrastructure renewal and expansion. Many are also still trying to reconcile the need for long-term planning against short-term electoral priorities. One outcome of this struggle has been the beginning of the transfer of cost from taxpayer to consumer, forcing consumers to come to terms with the need to pay for the infrastructure they use.

We saw a continued prioritization of economic infrastructure over social as countries target economic growth. Those projects that have strong consumer tariffs or private funding will see the greatest success. Ports, power and mining infrastructure all continued to see solid activity throughout 2012.

The past year also showed that the sector is starting to evolve. For one, infrastructure planners are starting to take a more holistic view of the value of their assets in order to understand the productive potential of their projects and understand the full benefits of their investment. At the same time, technology is allowing owners to manage their assets differently and operators to gain significant efficiencies from their existing assets, better long-term performance, longer lifespan and less downtime.

The foundations for growth

The future is beginning to look brighter. There is a mountain of new projects currently on the planning table that – as conditions continue to improve – will start to hit the market. It is telling that KPMG's Infrastructure practice enjoyed a record year in 2012, which is a good indicator that renewed deal flows will soon enter the pipeline.

Infrastructure participants should also be encouraged by governments' increased willingness to take steps to catalyze the market through direct incentives, regulation and financial backing (such as credit enhancement). This should help drive the market over the coming years and – if managed properly – is expected to improve market confidence and lay the foundation for a large pipeline of future projects.

Those looking for more immediate opportunities should take solace from the sudden flurry of infrastructure activity in markets that – to many – are 'off the beaten track'. Places like Mongolia, Mozambique, Turkey and Vietnam have new plans for massive investment into infrastructure, creating significant opportunities for those willing and able to operate in less established environments.

A global viewpoint

We believe that we can play an active role in developing the global infrastructure sector by sharing our insights and experiences from around the globe. Having advised infrastructure organizations in more than 130 countries in the past year, our infrastructure professionals are ideally positioned to deliver practical advice and actionable insights to support the full range of infrastructure activity across the asset life-cycle.

We hope that these insights provide a new perspective on key trends and opportunities facing the sector in 2013 and beyond. To discuss these trends and their impacts in more detail, we encourage you to contact your local KPMG infrastructure team.

Nick Chism
Global Head of Infrastructure

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10 trends that are **changing the world** of infrastructure

Trend 1 The cost burden shifts to the consumer

All around the world, consumers are feeling the pinch of infrastructure-related costs. Governments – strapped for cash and keen to unload long-term expenses – are increasingly starting to consider how they can shift their infrastructure spend from the taxpayer to the consumer.

In some cases, this may mean developing more toll-funded infrastructure or charging business levies to support development. But it will also require consumers to start paying the real costs of the infrastructure they use. This will invariably be political; rising energy costs or water bills are always sensitive topics. The reality is that hidden subsidies or cross-subsidies distort the market; sometimes positively, sometimes negatively. Regardless, one thing is clear: we have shifted onto a path of increased transparency and true user pay pricing.

Transparency will be key. Users are beginning to demand to know exactly what they are paying for and where that money is going. Governments will want to know that returns aren't being unfairly inflated. And infrastructure planners will expect to see replacement and operational costs being accrued.

While achieving this will be tough for most governments, it is the inevitable answer to infrastructure funding. More realistic pricing and user-pay services will lead to clearer price/consumption signals to users (thereby reducing the need for increased investment in the future), and allow governments to channel funds into higher priority or higher risk projects.

Trend 2 Governments having to become more active

Governments are recognizing the need to take a more significant role if they hope to meet their citizens' infrastructure demands. The simple truth is that not every infrastructure project can attract private investment – particularly in today's market – meaning that governments are being forced to take a leadership role; to step up and fill the gap.

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With direct public investment quickly becoming an option of last resort, many governments are finding more indirect – yet equally powerful – ways to influence the private sector development and financing market. In some cases, governments are directly intervening by structuring credit enhancements for riskier projects or offering guarantees to investors. In other markets – particularly in the developing world – we are seeing a rise in the role of multilateral-backed funding.

At the same time, governments are also looking at how they can create a more positive environment for investment through better regulation. Where the user can pay, at least in part, enhanced regulation is as close as one can come to a silver bullet.

With the need for increased transparency, governments, particularly at the local and municipal level, are becoming more active in educating the public about the real costs and economic benefits of the infrastructure they use. This will be critical in not only transitioning costs to consumers, but also in gaining broad-based public support for further infrastructure investment.

Trend 3 Pipelines are subdued but will return

With few exceptions around the world (most notably China), the past year has seen a dearth of infrastructure deals moving through the pipeline. Given the current environment, this is hardly surprising: politicians are firmly focused on the short-term horizon, financial markets are subdued, affordability is challenging and development budgets are constrained.

This does not mean there is a lack of projects ready and waiting to move into the pipeline. Planners and project owners have been active over the past year thinking through their programs, preparing to take their projects to market while waiting for the right economic, financing, political and social conditions to emerge to support project success.

The upside of this, clearly, is that projects are spending much more time in the planning phase. As a result, we anticipate the next crop of projects to pop out of the pipeline will – for the most part – be better thought out and ultimately more successful.

In some markets, governments have taken a different approach by 'outsourcing' the development responsibility to the private sector and seeking unsolicited bids. In markets like Brazil, this has proven to be a good way of addressing the lack of development capacity and capability in the public sector.

We believe that deal flow will improve in 2013 and that we will start to see a welcome increase in numbers of new projects hitting deal tables. One need only look at the US market where – just a few years ago – developers were decrying the lack of deals. Today, the market is one of the most active with a range of well-planned and financed projects on the go. Other markets expected to lead the way are Brazil, South Africa, China and India.

Trend 4 Focus moves onto cities

Cities have become the crucibles of a nation's economic activity. No wonder: according to a range of sources the world's cities are home to more than half of the global population; emit more than 70 percent of the world's greenhouse gasses; use 80 percent of the world's energy; and drive the vast majority of the world's economic output.

As a result, all levels of government – municipal, state/provincial, national and even international – are increasingly focused on creating the right mix of urban infrastructure to drive and support economic growth, and cities are leading the charge. Over the past decade the world has seen cities rise in prominence to a point where city leaders are essentially driving the development agenda for their region or even country.

Out of cities, a new trend is starting to emerge that ties infrastructure investment to economic growth. Rather than being driven by investment in individual projects or sectors (an occupational hazard for siloed local governments), a growing number of cities now realize they can maximize their investment and enhance long-run economic returns by carefully considering what project or more importantly combination of projects will provide the best bang for their buck.

In Greater Manchester, for example, city leaders focused on improving connectivity with the suburbs, revitalizing the downtown core and attracting tourists through infrastructure development which, in turn, has increased economic activity and tax revenues collectable by government across the region.

Trend 5 Making the most of existing assets

Much of the attention over the last twenty years has been focused on Greenfield projects – building gleaming new assets. As project owners struggle to get new projects off the ground and the number of operational assets increases exponentially, more focus is being given to existing assets. We believe this trend will increasingly dominate the infrastructure agenda in the coming decade. This has led asset owners and infrastructure planners to reconsider how they are managing their existing assets. In some cases, project owners are looking to extend the lifespan of their assets to the limits, well beyond their original design lives. This will require owners and operators to put a renewed focus on operational management to ensure that maintenance and investments are being properly deployed to keep the asset in tip-top shape.
In other cases, asset owners are exploring ways to 'bolt on' new technologies and innovations that either enhance the asset's long-term value, expand capacity or make it more resilient for the future. Others are investing in technologies to enhance the overall efficiency of their assets, meaning fewer new assets need to be developed in the future.

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Governments are also looking at how they can make the most of their existing financial assets by conducting asset sales – particularly for assets that tie up fiscal capacity – in order to recoup their investment which, in turn, can be 'recycled' into new projects and assets. The UK's High Speed One (HS1) clearly demonstrates a leading practice in how governments can transfer ownership to the private sector while maintaining service levels and quality commitments.

A new paradigm is emerging where every ownership decision is being given fresh scrutiny. "Why do I need to own if…?" is the new refrain and tied with enhanced regulation, we believe this will become a fertile ground for governments the world over.

Trend 6 Resilience rises up the agenda

Over the past few years, infrastructure participants, governments and the private sector have become painfully aware of the importance of resilience planning. Network outages have wreaked havoc in many markets while Japan's earthquake had long-term repercussions far beyond its borders. The US East Coast's experience with Hurricane Sandy demonstrated that even the most mature markets can be severely impacted by crippled infrastructure.

Modern infrastructure is much more susceptible to such risks. In large part, because there is more interconnectivity among elements of society's infrastructure (just consider the increasing reliance of cities on a single source of power and the implications of failure – think Super Bowl XLVIII). Clearly, a failure of one piece of infrastructure may have significant knock on effects across the system.

Protecting valuable assets from the impact of disasters – natural or otherwise – is therefore key to economic and political stability. But so too is recovery time. Consider the experience this past year of Hong Kong and New York, both of which were hit by equally violent storm systems. New York took almost a week to restore power and bilge out subways and road tunnels; Hong Kong was back to 'business as usual' within 24 hours.

Another critical resilience issue that has rocketed up the agenda is the risk of cyber-attack. All around the world, we have seen increasing incidence of critical infrastructure systems being hacked and hijacked by state-sponsored actors, 'hacktivists', and even teenaged ne'er-do-wells. The repercussions of security failure in the face of a well-planned attack could be disastrous, and so governments around the world are putting pressure on infrastructure designers and planners to ensure that every precaution is taken to secure against cyber-attack.

Trend 7 New infrastructure models emerge

As perceptions of infrastructure start to shift and the market matures, many project owners and infrastructure planners are starting to rethink how their development and operational models are structured. How can the cost of renewal and operation be recouped across the life-cycle? How can investment models be adapted to better share, manage and price risk? How can projects be tendered to ensure value is maximized across multiple assets?

Others are considering how traditional infrastructure models will need to evolve if the dual pressures of economic growth and environmental stewardship are to be met. Many countries are now carefully considering how infrastructure models will need to change in order to deliver their 'green agendas' and make them affordable for the taxpayers and users.

In part, this shift in thinking is being driven by a renewed focus on achieving infrastructure's long-term objectives and value. This requires asset owners, investors, operators and planners to consider how value can be driven across the full asset life-cycle from planning to end-of-life and how the asset should be optimally structured in each stage. Of course, an important part of this is the green agenda which is here to stay as a key part of project development.

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The desire for greater operational efficiency is also catalyzing a shift in infrastructure models. Recognizing that some aspects of operations and management are more efficiently and effectively managed by private enterprise or sub-contractors, many asset owners (particularly from the public sector) are now increasingly focused on embedding commercial models and approaches into their infrastructure plans.

Trend 8 The pace of technology quickens

Never before has technological change had such a dramatic impact on infrastructure. From efficiency-driving technologies (such as cloud computing) to the emergence of entirely new infrastructure sectors (such as the renewable power sector), we have witnessed a decade of technological advancement that makes the industrial revolution look like child's play. But while modern infrastructure systems are generating a wealth of real time data, we seem to have limited ability to analyze that data and turn it into improved decision making.

Yet the infrastructure sector faces a number of challenges when trying to adapt to this rapid pace of change. Many assets take years – sometimes decades – to move from planning to operation, which often means technology becomes obsolete before it even becomes operational. Given the lifespan expectations for assets such as dams and sewage systems, planning for technological change 30 to 100 years into the future becomes incredibly difficult.

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But a growing number of infrastructure planners and owners are starting to take a longer-term view of how technology can be integrated into their assets to enhance efficiency and sustain relevance to future users. For example, cities such as Rio de Janeiro and London are starting to harness 'Big Data' that is now flowing from their infrastructure systems to identify problems before they arise, streamline operations and even apportion budget allotments.

More must be done. The reality is that technology has the potential to solve many of the world's most critical infrastructure challenges (affordability, environmental sustainability, operational efficiency, etc.) if properly commercialized and adopted. The trick will be ensuring the right technologies – those that are economical and viable – are advanced while others are allowed to fail.

Trend 9 Cost reduction comes into focus

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Regardless of who is paying the bill, the affordability of infrastructure has become a major issue for governments around the world. Almost universally, the desire for investment far exceeds the world's ability to fund it, whether or not the money comes from tax payers or consumers.

As a result, many governments are starting to put the cost of their infrastructure under the microscope to see if there are opportunities to help make their infrastructure more affordable. KPMG's Infrastructure professionals have been involved in helping a number of governments with this process and have found that – from one market to the next – there can be major variations in the cost of infrastructure.

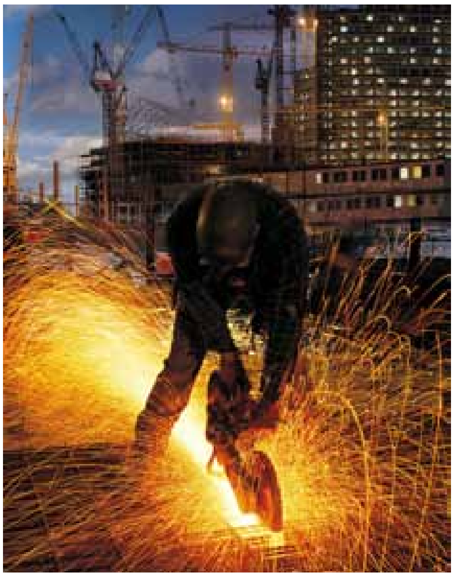
Some of the culprits for inflated infrastructure costs are rather commonplace and obvious: labor costs can vary from city to city within a single market, while the cost of materials can range significantly depending on access, prices, import tariffs and so on. However, in some cases, we have found rather preventable (albeit often institutional) factors that are driving up costs.

Recognizing the ability to drive change, governments are now beginning to focus on the issue. In the UK, for example, Infrastructure UK recently carried out a Cost Review after finding that some of the approved estimates for High Speed Rail 2 (HS2) were twice as high as European benchmarks. The review found that costs could be reduced by around 15 percent (or GBP2 to 3 billion per year) if certain issues were effectively addressed.

Given the keen focus on costs worldwide, expect to see a greater focus being placed on cost in the coming years.

Trend 10 The war for talent and skills heats up

Possibly one of the greatest and least appreciated drags on the world's ability to meet the growing infrastructure challenge is a lack of available skills and talent. Whether it is skilled infrastructure and master planners, experienced developers, talented infrastructure fund managers, or nuclear engineers, the scope and scale of the skills shortage is evident across the sector. Sadly, all signs indicate that the situation will get worse before it gets better.



Yet some progress is being made. Targeted training programs are beginning to be established in both corporate and academic campuses, governments have started to promote recruitment and education initiatives, and infrastructure companies around the world are ramping up their pool of skilled talent. The developing world is also proving to be a strong source of human capital with countries like India, China and Brazil exporting their infrastructure talent to the mature markets of Europe and North America.

But it is not just skilled boots on the ground that are lacking; so too is leadership. Today's infrastructure leaders must exhibit a new set of skills in order to bring together multiple stakeholders and execute massive projects, all while under the scrutiny of regulators, politicians, investors and the general public.

Regional review

While activity across many of the mature infrastructure markets has been somewhat slow over the past year, we have noted a number of relatively new markets where infrastructure investment, development and delivery are showing positive signs of growth.

US figures out how to get deals closed

The fastest maturing market in the developed world has been the United States, notwithstanding the fiscal cliff, debt ceiling or intransigence in Washington. Having suffered through a prolonged period with few projects coming into or out of the pipeline, the US now seems to be positively exploding with activity. In part, this is because some of the political and economic uncertainty in the market is gradually subsiding, creating a stronger environment for investment. But other factors have also contributed such as the discovery of shale gas, which has driven resource-related infrastructure development and reduced the overall operational costs of major assets. Barring an inability to respond to the 'fiscal cliff', we expect activity in the US to continue unabated for the foreseeable future.

Brazil emerges as an infrastructure market

Having made three major investment announcements over the past year, the government of Dilma Roussef seems committed to improving the country's key economic infrastructure and Brazil is expected to blossom as a result. According to the Brazilian Plan, ports will be refurbished and developed, roads and rails will be expanded and upgraded and airports will be modernized and created.

Brazil has also taken significant steps to encourage foreign investment and participation in the market through positive regulation and valuable incentives. Given the country will soon host the FIFA World Cup in 2014 and the Summer Olympics in 2016, Brazil should remain one of the brightest infrastructure markets in the world.

Overlooked markets get into the game

One of the most notable shifts over the past few years has been the rising level of activity in new and emerging markets. We are seeing places like Mongolia and Mozambique beginning to attract investment into their infrastructure which, in turn, is catalyzing additional development and investment opportunities. Other markets, such as Turkey, have recently developed an investment program aimed at improving access to services for underserved populations which also drives significant investment into infrastructure. Victory will be found by those who are able to find new ways to work in unfamiliar lands.

Sector review

The past year has demonstrated that it's possible to get deals done if they are either critical to economic growth or backed by independent cash flow. As a result, some sectors have seen steady growth while others have suffered diminished activity.

Booming market for economic infrastructure

Every country – mature or developing – is singularly focused on fostering economic growth. This has led to sustained investment into projects that can enhance competitiveness, create jobs or drive productivity. In particular, many politicians have been keen on 'shovel-ready' and high visibility projects such as roads, mass transit and internet connectivity. While many of these investments will certainly open doors for other projects in the future, planners will need to spend more time considering how these projects fit into the holistic vision and plan for economic growth and development. The emergence of an integrated approach to planning should pay dividends for generations.

Social infrastructure starts to simmer

A sector that has suffered considerably during the economic downturn has been social infrastructure. However, social's fortunes may change shortly. Over the past year, a growing number of social housing, education, health and welfare infrastructure projects come onto the planning table in both the developed world (where existing assets are in dire need of refurbishment) and the developing (where social infrastructure is being developed for the first time). While a flood of social projects may not see their way through the pipeline within the next five years or so, developers and investors may want to start considering how to exploit their existing expertise or grow their capabilities in this sector over the medium-term.

Independent cash flow unplugs pipelines

While reduced government spending and tight lending environments may have slowed some infrastructure sectors, those with strong consumer or private sector-based cash flow have flourished. Mining-related infrastructure developers are seeing increased demand from all around the world, as are those involved in ports and power generation.

A look at KPMG's Global Infrastructure Practice in 2012

2012 was another record year for our infrastructure advisory practice.

Australia remained our largest national market, driven by growth in work on major resources projects. The US was, yet again, our fastest growing market, driven by transport PPPs and work in asset management. Brazil and India recorded particularly strong growth.

By sector, power, Cities and mining were our fastest growing sectors, with transport growing strongly too around the world.

Our infrastructure footprint now extends to 131 countries and involves approximately 3000 advisors.

We expect strong growth to continue in 2013. As well as the markets mentioned above, we are expecting good years in Africa and Asia, while we expect to see a re-bound in Europe.

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