Industry Agenda

Infrastructure & Urban Development Governors Meeting 2014

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Foreword

Infrastructure & Urban Development Industries Team

Pedro Rodrigues de Almeida
Director, Head of Infrastructure & Urban Development Industries

Hanseul Kim
Associate Director, Head of Engineering & Construction Industry

Michael Max Bühler
Associate Director, Head of Real Estate Industry

Robin Ried
Associate Director, Head of Urban Development

Marie Lam Frendo
Associate Director, Head of Infrastructure Initiatives

Guido Battaglia
Senior Manager, Africa Infrastructure Initiative

Christoph Rothballer
Project Manager, Strategic Infrastructure Initiative

Fabian Barthel
Project Manager, Africa Infrastructure Initiative

Hao Xu
Project Manager, Future of Urban Development Initiative

Carla Sequeira
Senior Team Coordinator, Infrastructure & Urban Development Industries

Katerina Korcakova
Team Coordinator, Basic & Infrastructure Industries

Muriel Skaf
Intern, Future of Urban Development Initiative

Alex Wong
Senior Director, Head of the Centre for Global Industries and Head of Basic & Infrastructure Industries

Today's global infrastructure demand is estimated at approximately US$ 4 trillion in annual expenditure with a gap – or missed opportunity – of at least US$ 1 trillion every year. However, countries are often faced with the paradox of a dry pipeline of projects. While government leaders must appropriately select and prioritize their infrastructure needs beyond the constrained logic of political cycles, they are nevertheless partly incapable of closing the financing gap, which the private sector must fill. It will not be possible to meet the demand without innovative financing models, new models of collaboration and the creation of private companies best suited to execute the much-needed infrastructure and resultant urban development.

At the World Economic Forum Annual Meeting 2014 in Davos- Klosters, Switzerland, an unparalleled number of world leaders from industry, government, academia and civil society convened under the theme of "The Reshaping of the World: Consequences for Society, Politics and Business". The Infrastructure & Urban Development Governors' discussions and related private events in Davos provided a fertile ground to reflect on some of the most pressing economic issues related to the sector and on aligning the community's goals for the future. Many of the ideas and solutions envisioned at the World Economic Forum Annual Meeting 2014 will serve as stepping stones, enabling the agenda to move forward swiftly:

- Key challenges for engineering and construction sector companies include a lack of skilled staff, low transparency standards, stricter local content requirements and newly emerging technologies. To successfully reap the benefits from public-private partnerships (PPPs), governments should develop long-term project pipelines, prepare rigorous feasibility studies and incorporate lessons learned from other countries.

- Development of real asset bubbles is predominantly driven by psychological factors. Groupthink and positive feedback loops lead to an exuberant increase in property prices. No clear indicators exist for where and when a real asset bubble will burst. Low spreads between the returns on real estate markets and the return on a risk-free investment might signal a bubble, as do increases in leveraging levels. Central banking instruments and stricter regulation are potential ways to avoid the development of bubbles.

- The oilfield services and equipment (OFSE) industry is facing a multitude of challenges, including increasing project complexity and escalating costs, a shortage of talent, stricter local content requirements and increasing environmental and community engagement needs. To secure and advance their essential role in the oil and gas value chain, OFSE players need to transition to the next level of operational excellence, and collaborate more with each other – with national oil companies (NOCs), international oil companies (IOCs) and local governments.

- The "solution" for cities is a range of practices, not a single best practice. The challenges faced by cities in emerging markets often differ dramatically from those in mature economies, but nonetheless lessons can be learned between them. Cross-regional exchange is needed, particularly between the global North and South.

- Initiatives approved or to be continued for 2014 are: the Partnering Against Corruption Initiative (PACI) in the context of real estate and engineering and construction; real asset bubbles and early warning systems; oilfield services; the Future of Urban Development; Global Strategic Infrastructure; and Disaster Resource Partnership (DRP), now in operational phase (secretariat hosted at Amec).

- Additionally, two important cross-industry institutional initiatives on anti-corruption and climate change were highlighted at the Annual Meeting 2014:

    - A new, cross-industry chief-executive-officer community was launched under PACI. The Forum's most committed industry leaders – the PACI Vanguard – pledged their support to design corruption out of the system. The Vanguard will work with governments, civil society and other industry leaders to bring about fair market conditions, and level the playing field against corruption. A collaboration with the Organisation for Economic Co-operation and Development (OECD) was launched to extend a more harmonized legal and regulatory framework throughout the world.

– Climate change formed another cornerstone of the 2014 programme. In 10 private sessions, over 500 participants (including over 100 chief executives, heads of state and civil society leaders) explored concrete public-private cooperation on key areas of climate change that will also deliver quantifiable growth benefits by 2020. These include initiatives on ending deforestation, phasing out short-lived climate pollutants, enhancing energy efficiency and greening investment in preparation for the United Nations Secretary-General's Climate Summit 2014, New York, USA in September, and beyond.

The Forum's Infrastructure & Urban Development community can report another year of accomplishment under its Governors' leadership. The community now consists of 44 Partners covering a broad range of professional interests, needs and activities across the entire value chain, from real estate and urban development to construction and heavy-industry engineering services, to name just a few. Its objectives are to leverage the strengths of this value-chain approach while ensuring the highest level of servicing of the specific sectors' priorities. The community grew sustainably, with several new Partners joining from the areas of engineering, procurement and construction (EPC); specialty EPC contracting in up-stream extractive industries (including oilfield services and equipment); and the real estate development and investment sectors. This year's new Governors for 2014 are:

Teruo Asada, Chairman of the Board, Marubeni Corporation
Luis Castilla, President and Chief Executive Officer, Acciona Infraestructuras
Niels B. Christiansen, President and Chief Executive Officer, Danfoss
Geraud Darnis, President and Chief Executive Officer, UTC Building & Industrial Systems
Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies
Gregory Hodkinson, Chairman-Elect, Arup Group
Paal Kibsgaard, Chief Executive Officer, Schlumberger
Uwe Krüger, Chief Executive Officer, WS Atkins
Hiroaki Nakanishi, President, Hitachi
G.M. Rao, Group Chairman, GMR Group
Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad
Ulrich Spiesshofer, Chief Executive Officer, ABB
Kapil Wadhawan, Chairman, Rajesh Wadhawan Group

The Forum will strive to make 2014 an even more successful year than 2013, as the Infrastructure & Urban Development community pans out a number of results directly related to its initiatives, while making use of the vast experience and knowledge of new Partners. The Forum looks forward to working with all members of the community in 2014 to advance the industry agenda while contributing to improving the state of the world. In this regard, recognition for their leadership and commitment go to the Governors Steering Committee Chair for 2013, David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, and to the Governors Steering Committee members of 2013.

The community welcomes the new Co-Chairs of the Governors Steering Committee 2014: **Douglas Frye**, Global President and Chief Executive Officer, Colliers International, USA; and **Samer S. Khoury**, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece. The Co-Chairs will be supported by the following additional members of the Governors Steering Committee during 2014:

Samir Brikho, Chief Executive Officer, Amec
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company
Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies
Uwe Krüger, Chief Executive Officer, WS Atkins
Mouhtaz El Sawaf, Chief Executive Officer, Construction Products Holding Company (CPC)
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation; Past-Chair (2013)
Ulrich Spiesshofer, Chief Executive Officer, ABB
Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings
Kapil Wadhawan, Chairman, Rajesh Wadhawan Group
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo

The Forum also thanks all the Governors for their extraordinary support and advice throughout the past year. The Infrastructure & Urban Development Industries aim to serve as a forward-thinking, valuable and internationally recognized partner for all stakeholders involved in infrastructure and urban development. In addition, it seeks to shape the sector's agenda, creating unparalleled opportunities to convene leaders, raise global awareness, conceive frameworks and prepare workable recommendations in the context of improving the state of the world.

Infrastructure & Urban Development Governors Sessions

Governors Lunch and Community Update

Hotel InterContinental, Turmalin Room
Friday 24 January, 12.00 – 13.00

The Governors Steering Committee (hereafter the Steering Committee) is the ultimate decision-making body and defines the future endeavours of the Infrastructure & Urban Development industries at the World Economic Forum. The community's recognition and unique role in shaping the global agenda critically depends on the advice of the Steering Committee members who, individually, might decide to spend more time interacting with the Forum beyond the regular meetings convened by the Chair.

The Infrastructure & Urban Development community update was preceded by the first gathering of the newly formed Steering Committee for 2014, called by David T. Seaton, Chair for 2013, which included the following Partners:

New Co-Chairs of the Steering Committee for 2014:
Douglas Frye, Global President and Chief Executive Officer, Colliers International
Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC)

Governors Steering Committee 2014 Members:[1]
Samir Brikho, Chief Executive Officer, Amec
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company
Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies
Uwe Krüger, Chief Executive Officer, WS Atkins
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Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings
Kapil Wadhawan, Chairman, Rajesh Wadhawan Group
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo

The Steering Committee outlines the community focus at the World Economic Forum on an annual basis. Its members provide general guidance and help the Chair set the mandate, while monitoring and evaluating geographical areas of interest and the outcomes of initiatives, activities and meetings. The Steering Committee confirmed the mandate of the Infrastructure & Urban Development initiatives for 2014 as follows:

- **Global Strategic Infrastructure**
- **Future of Urban Development**
- **Disaster Resource Partnership** (DRP) – hosted by AMEC during 2013 and extended to 2014, after which Fluor Corporation and Hindustan Construction Company will continue the secretariat in 2015 and 2016.

The Steering Committee also approved three proposed initiatives for 2014:

- **PACI**, in the context of the real estate, and engineering and construction industries
- **Real estate**, on real asset bubbles and early warning systems
- **Oilfield services**

The community grew sustainably, with several new Partners joining from the areas of engineering, procurement and construction (EPC); specialty EPC contracting in upstream extractive industries (including oil and gas); and real estate development and investment sectors. It now consists of 44 Partners covering a broad number of professional interests, needs and activities across the entire value chain, from real estate and urban development to construction and heavy-industry engineering services.

01: David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; 2014 Chair of the Governors Meeting for the Infrastructure & Urban Development Industries
02: Jacqueline Hinman, Chief Executive Officer, CH2M Hill Companies, USA
03: Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
04: Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan

Transformation map for the real estate sector

Transformation map for the engineering and construction sector

The new Governors for 2014 are:

Teruo Asada, Chairman of the Board, Marubeni Corporation
Luis Castilla, President and Chief Executive Officer, Acciona Infraestructuras
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Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies
Gregory Hodkinson, Chairman-Elect, Arup Group
Paal Kibsgaard, Chief Executive Officer, Schlumberger[2]
Uwe Krüger, Chief Executive Officer, WS Atkins
Hiroaki Nakanishi, President, Hitachi
G.M. Rao, Group Chairman, GMR Group
Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad
Ulrich Spiesshofer, Chief Executive Officer, ABB
Kapil Wadhawan, Chairman, Rajesh Wadhawan Group[3]

To provide a broader context of the two breakout sessions (real estate, and engineering and construction), Seaton introduced the concept of "transformation mapping" as the Forum's new collaborative process and tool to explore the changing context of industries, regions and global issues. By means of two transformation maps, the key questions and objectives of the breakout sessions were briefly reviewed and presented.


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01: David Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; and Douglas Frye, Global President and Chief Executive Officer, Colliers International, USA
02: G.M. Rao, Group Chairman, GMR Group, India
03: Niels B. Christiansen, President and Chief Executive Officer, Danfoss, Denmark
04: Hiroaki Nakanishi, President, Hitachi, Japan
05: Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland
06: Uwe Krüger, Chief Executive Officer, WS Atkins, United Kingdom
07: Roland Koch, Chairman of the Executive Board, Bilfinger, Germany; and Teruo Asada, Chairman of the Board, Marubeni Corporation, Japan
08: Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan; Atsutoshi Nishida, Chairman of the Board, Toshiba Corporation, Japan; and Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland
09: John Beck, Chairman and Chief Executive Officer, Aecon Group, Canada

Real Estate Transformations

Hotel InterContinental, Quarz Room
Friday 24 January, 13.00 – 14.45

Around the world, real estate and infrastructure markets are experiencing major shifts through regulatory and political movements, demographic trends and disruptive innovation in other industries. This year, the Governors Meeting was split in two parallel breakout sessions: one focusing on real estate/urban development, and the other on engineering and construction/infrastructure. In each session, Governors, experts and guests from outside the industry exchanged their perspectives on disruptive trends and potential major drivers of change in their industry in the years ahead.

The real estate industry is under transformation. It is increasingly susceptible to a vast set of drivers such as changing demographics, the way people work and live, new pieces of regulation, disruptive technologies and anticipated macroeconomic impacts such as interest rate spikes. In this session, the real estate community discussed with experts from central banks, government and academia about where the industry sees disruptions of real estate markets in the near or medium term. The discussion focused on real asset bubbles, but also addressed other issues brought up by the Governors:

– What drives the development of a real asset bubble?
– Why is it difficult or impossible to predict speculative bubbles forming and bursting?
– In which city, region or country can a real estate bubble currently be observed?
– How can an initiative be designed that is able to tackle the issues raised in the discussion?

Key Takeaways

– The development of real asset bubbles is predominantly driven by psychological factors and can be best described as a social epidemic of enthusiasm.[4] The growth of a speculative bubble is fuelled by news of price increases and word-of-mouth stories of success. The underlying mechanisms are groupthink and self-reinforcing feedback loops, which might lead to a dramatic increase in property prices. Other drivers, including low interest rates and a lenient regulatory and/or political environment, might provide the necessary setting for speculative bubbles.

– No clear indicators reveal where and when real asset bubbles will burst. Decreasing spreads between the investment returns in real estate markets and the return on a risk-free investment might signal the development of a speculative bubble,[5] as do increasing levels of leverage.[6]

– The bursting of a real asset bubble can have severe consequences on public budgets if tax revenues are collected on property value and construction sector activity. The extent of wealth destruction can be significant, and has repeatedly been substantially underestimated.

– In the past, central banks frequently warned governments when real asset bubbles developed. In these circumstances, central banks increased interest rates and advised governments to change the regulatory environment by deleveraging the real asset market or cutting mortgage tax benefits. However, these measures are highly unpopular among governments and the public in a phase of speculative euphoria. Therefore, in most cases, government did not follow central bankers' advice due to competing political interests.[7]

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01: Breakout session on real estate transformations

– Early intervention, using suitable central banking instruments and a stricter regulation such as deleveraging measures, provides potential ways to avoid the development of speculative bubbles. It has been proposed that "macroprudential"[8] and not only "microprudential" central-banking instruments should be applied, which requires improved international central-bank coordination.

Synopsis

Real estate markets have become more international, particularly with respect to commercial real estate, which accounts for 60-70% of the total market. The global flows of foreign investment make local markets more susceptible to real asset bubbles. Even though speculative bubbles show certain commonalities, no single definition and no unanimously accepted single-root-cause of their development exist. However, it is commonly agreed that underlying mechanisms such as self-reinforcing feedback loops and groupthink dynamics lead to property prices well above economically justified levels. The development of a speculative bubble can be described as a "social epidemic of enthusiasm" in which increasing property prices create further excitement, which in turn attracts more investors.

Potential fostering environments for real asset bubbles are low interest rates over a long period of time, as well as lenient monetary[9] and fiscal regulations. External shocks and the development of herding behaviour can be potential root causes of speculative bubbles. While low interest rates make alternative investments less attractive, they also decrease the cost of debt financing. This enables private and institutional investors to predominantly invest in real assets, but leaves them vulnerable to interest rate increases.

In addition, lenient financial and tax regulations, particularly high ceilings for loan-to-value (LTV) ratios and loan tax incentives, encourage real estate investment and, as a result, lead to increasing property price and leverage levels.

In the Netherlands, for instance, no regulations for LTV ratios existed. The common practice to borrow up to 120% of the property value contributed to extreme price increases[10] in the second half of the 1990s. Also, savings rates on regular income were high due to mandatory contributions to pension funds. Overborrowing when buying property, and using the excess money for consumption, provided a way for many private investors to circumvent these savings restrictions.

External shocks contributed to the development of a real estate bubble in Spain. After Spain joined the eurozone, interest rates dropped significantly and fuelled the property markets with hot money. Success stories, and the fear to miss an upward race, caused herding behaviour among private and institutional investors. As a consequence, this created speculative price bubbles and an inflated construction market.

No distinct measurable indicators substantiate the existence of a bubble or allow predictions on when a bubble will burst. However, the following "common sense" patterns might indicate an overheated real asset market:

– Rapidly rising real-asset price levels substantially exceeding their underlying fundamental valuations

01: From left to right: Henry Ross Perot Jr, Chairman of the Board, The Perot Companies, USA; Huw van Steenis, Global Strategist, Morgan Stanley, USA; Srinath Sridharan, Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India
02: From left to right: Srinath Sridharan, Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India; Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom; Robert J. Shiller, Sterling Professor of Economics, Yale University, USA; and Atsutoshi Nishida, Chairman of the Board, Toshiba Corporation, Japan

- Increasing levels of leverage, measured in average LTV ratios
- Decreasing spreads between the investment returns in real estate markets and the return on a risk-free investment
- Having a large share of financial investors in residential property as compared to homeowners (the demand for owner-occupied property being limited by nature, thus an increased number of financial investors indicating that the market is not solely driven by demand for living space)
- The propagating and evolution of word-of-mouth success stories and ever-new reasons why higher price levels are still justified

Given the lack of distinct indicators and the abundance of qualitative symptoms, the only way to assess the presence of a bubble is by applying common sense. And even after the burst of a speculative bubble, it is not always clear whether it was actually a bubble or whether prices merely adjusted to a new equilibrium level.

Despite the absence of objective indicators, central banks were regularly able to successfully spot real asset bubbles. The Spanish central bank published a report in 2003[11] indicating a 25% overvaluation in the Spanish property market. Similarly, the Dutch central bank warned against the existence of a speculative bubble in the late 1990s. However, if intervention measures are not implemented early on, substantial political resilience exists to enact more restrictive measures, as both countries experienced. The Spanish assessments in 2003 and 2005 had no response, and prices continued to increase until the bubble burst in 2008; and, in the Netherlands, the central bank warnings were not listened to.

01: From left to right: Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA; Henry Ross Perot Jr, Chairman of the Board, The Perot Companies, USA; Huw van Steenis, Global Strategist, Morgan Stanley, USA; Srinath Sridharan, Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India; Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom; Robert J. Shiller, Sterling Professor of Economics, Yale University, USA; Atsutoshi Nishida, Chairman of the Board, Toshiba Corporation, Japan; Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa

02: Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom; Robert J. Shiller, Sterling Professor of Economics, Yale University, USA

03: Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA; Jaime Caruana, General Manager, Bank for International Settlements (BIS), Basel

To avoid the development of speculative price bubbles or at least to mitigate their consequences, central banks and governments can take a number of measures. In the United Kingdom (UK), the maximum LTV for secondary homes was capped. The same approach was taken in the Netherlands, were the statutory LTV ceiling decreased by 1 percentage point annually until property prices levelled out.

Additionally, property tax incentives have to be eliminated if so required. Finally, since low interest rates are a main catalyst for real estate bubbles, increasing interest levels can counteract excessive price increases. The measures should be flexible over time to react to changing market conditions. However, a number of problems curtail the effectiveness of these measures:

- In a globalized financial world, central banks' leeway to increase interest rates for deflating real asset bubbles is limited. This applies in particular to large heterogeneous currency areas such as the eurozone.
- Real asset markets by definition are regionally heterogeneous, and speculative bubbles often occur in specific regions or cities.
- The data quality, particularly in developing and emerging markets, is low and does not allow for a clear measurement of real asset prices. In India, for example, around half of the real estate transactions are estimated to be made in cash, and no prices are recorded.[12]
- Political support for unpopular measures is low during speculative euphoria.

Given the lack of political support in the midst of a speculative bubble, automatic rather than discretionary measures might be the better approach. However, against the backdrop of missing clear quantitative indicators for a bubble, the implementation of such instruments is difficult.

Early intervention, using suitable central banking instruments and stricter regulation such as deleveraging, offers potential ways to avoid the development of speculative bubbles. Applying "macroprudential" instead of "microprudential" central banking instruments has been proposed, requiring improved international central-bank coordination. Many observers have argued that the regulatory framework in place prior to the global financial crisis was deficient because it was largely "microprudential" in nature.

As the experience of Johannesburg, Spain and Ireland shows, the bursting of a real asset bubble can have a severe impact on public financing. In all three cases, tax revenues were levied on property values. As a consequence, collapsing property prices led to severely lower tax revenues and to public budget deficits. For Ireland, this coincided with increased capital requirements to bail out national banks. In Spain, it is estimated that about one-third of the deterioration of the budget surplus to a budget deficit can be attributed to a decrease in property tax revenues.

For large global investors, the impact of bubbles might be less severe, as long as they are invested for the long term, are able to balance their

01: Geraud Darnis, President and Chief Executive Officer, UTC Building & Industrial Systems, USA; Klaas Knot, Governor of the Central Bank of the Netherlands

portfolio globally and mitigate risk by diversification. Even if real asset prices plummet in specific markets, the price valuation of the real asset portfolio depends on robust cash flows.

Currently, no signs of a bubble exist in the Netherlands. Germany witnessed a strong increase in property prices, particularly in high-end markets, without an increase in leverage levels. In emerging markets, while some signs of overheating are apparent, they cannot be seen as a general trend. Although price-to-income ratios remained flat in most markets over the last years, the ratio increased by up to 20% in individual markets such as Hong Kong SAR and Brazil. Some cities in the People's Republic of China (China) also show strong indications of a bubble.

During the Governors session, the Forum was mandated to launch two real estate initiatives in 2014. These were part of the initiatives proposed and approved on the Governors Steering Committee call of 9 December 2013, and are as follows:

– An initiative on real asset bubbles and early warning systems: How can speculative bubbles in real estate investment be effectively detected, monitored, contained and mitigated?
– An initiative including the infrastructure and real estate industries, as well as PACI: Designing corruption out of the system – infrastructure and real estate value chains, with focus on common denominators such as procurement practices, land ownership and transparency issues.

Chaired by
Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA

Special Guest
Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa

Discussion Leaders
Jaime Caruana, General Manager, Bank for International Settlements (BIS), Basel
Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom
Klaas Knot, Governor of the Central Bank of the Netherlands
Robert J. Shiller, Sterling Professor of Economics, Yale University, USA
Huw van Steenis, Global Strategist, Morgan Stanley, USA
Theresa Whitmarsh, Executive Director, Washington State Investment Board, USA

01: Theresa Whitmarsh, Executive Director, Washington State Investment Board, USA

02: From left to right: Klaas Knot, Governor of the Central Bank of the Netherlands; Douglas Frye, Global President and Chief Executive Officer, Colliers International, USA; Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA; Jaime Caruana, General Manager, Bank for International Settlements (BIS), Basel; Henry Ross Perot Jr, Chairman of the Board, The Perot Companies, USA; Huw van Steenis, Global Strategist, Morgan Stanley, USA; Srinath Sridharan, Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India; Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom; Robert J. Shiller, Sterling Professor of Economics, Yale University, USA

Engineering and Construction Transformations

Hotel InterContinental, Adular Room
Friday 24 January, 13.00 – 14.45

Compared to other industries, engineering and construction (E&C) has been under slow technological development and has not yet faced mentionable socio-economic disruptions in past decades. Traditionally, the industry tends to be risk-averse and, as a result, lags in many aspects. Hence, there are still numerous opportunities to grow by adopting best practices from other industries and better understanding the visions of countries with strong infrastructure development plans for decades to come.

This session's objective was threefold: to gather insights for more clarity on where the industry is heading; to explore potential disruptions that might affect the industry in the near future; and to share thoughts on how the industry can better serve the infrastructure needs of countries and regions. Dimensions discussed included:

1. What are the key developments in the Latin America, Africa and Asia regions concerning the E&C industry?
2. What economic factors or technological disruptions will affect the industry in the next 5-10 years?
3. What are potential key areas for better collaboration between public and private sectors? What would a
1. high-level action plan look like?
4. What will be the role of the World Economic Forum?

Key Takeaways

– Significant opportunities for infrastructure investment exist around the world, driven by a backlog of investments in dynamic markets and mineral resources, as well as the need to rehabilitate ageing infrastructure.

– Areas with particular challenges for the E&C industry include the regulatory and legal environment, the establishment of a robust project pipeline, financing and risk sharing, capacity building, stricter local content requirements and improved stakeholder engagement.

– Developing and emerging countries need to build a long-term infrastructure vision and plan, increase transparency and professionalize public-private partnership (PPP) management to attract investment and qualified E&C contractors.

– To collect and distribute leading practices for PPP, a knowledge database facilitated and administered by the Forum should support national and international institutions.

Synopsis

Substantial opportunities for infrastructure investment exist around the world, some driven by a backlog of investments in dynamic markets, mineral resources and the need to rehabilitate ageing infrastructure. In Latin America, for example, one of the key impediments to economic growth is infrastructure. The infrastructure investment level of 3% of gross domestic product is low compared to the 8-9% level in Asia. The region's governments are committed to doubling their investment, and consider PPPs as key for implementation. Guinea, for example, has a large potential in mineral resources which has not been tapped so far. To export iron ore from the Simandou mine, located in the south-east of Guinea, a US$ 10 billion investment in a new 650 kilometre railroad and a port will be required. The government is currently seeking to finance the project and is open to PPP delivery, even though the experience with this delivery model so far is limited.

After years of war, Iraq's infrastructure is in great need of rehabilitation. Many foreign companies are already active in the country, particularly in the oilfield services sector. Financing is not a bottleneck due to the wealth of oil and gas, and the security situation is expected to further improve after this year's elections.

01: Breakout session on engineering and construction transformations
02: Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia; Saleh Muhammed Al Mutlaq, Deputy Prime Minister of Iraq

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The participants identified a number of challenges for the E&C industry in different areas. With regard to regulation, the legal and regulatory framework is often underdeveloped or even missing, and not only in emerging countries. This is particularly true for PPP structures. Also, the bidding process needs more transparency, as does the decision-making after bidding. A fair and transparent allocation of risk is crucial to promote PPPs. Currently, a precarious trend exists: promoters of PPPs increasingly have no long-term stake in the project. This provides them with an incentive to overestimate the revenue side while underestimating capital expenditure requirements. Joint-venture models might provide a solution to share risk and financing, as well as to ensure government commitment in PPPs across government cycles. Multilateral development banks could also play a catalytic role in transactions and provide support by buffering political risks.

Building up a pipeline of attractive projects is crucial but challenging; this is the case particularly in phases of economic downturn, as witnessed by India. While the long-term prospect for the infrastructure markets is good, short-term bottlenecks in the political decision processes block the project pipeline. This leads to a large number of projects being started as concepts, but many of them are delayed or even put on hold.

Another challenge is the lack of adequate human resources. Companies find it difficult to attract young and talented engineers to the locations of major projects, both in emerging and developed countries. Often, very demanding local employment requirements exist, even though the capabilities are not available in the host country. A local strategy is critical for E&C companies to satisfy these demands. One potential solution could be to hire and train local engineers or to establish educational partnerships with local companies. Increasingly, the engineers also need to understand the main concepts of financials and economics.

The E&C industry has hardly changed over the last 40 years, but needs to embrace innovation in its business model and increase research and development (R&D) spending to reverse decades of low productivity. For example, it still takes 80 hours to do a civil drawing despite technological progress. Productivity gains and faster processes could also be achieved

01: Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland; Enrique García Rodríguez, President and Chief Executive Officer, CAF – Development Bank of Latin America, Venezuela; Lee C. Tashjian, Special Assistant to the Chairman and Chief Executive Officer, Fluor Corporation, USA

02: Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada; Lee A. McIntire, Executive Chairman, CH2M HILL Companies, USA

03: Uwe Krüger, Chief Executive Officer, WS Atkins, United Kingdom; Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies, USA

04: Gregory Hodkinson, Chairman-Elect, Arup Group, Italy; David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece if governments would employ more efficient permitting processes. While the industry is constrained by its "low-margin" business, the companies should nevertheless actively seek ways to apply new technologies and allocate resources in R&D for the industry's long-term sustainability. Applying big data, for example, could significantly impact and move the industry forward.

To attract investment and qualified E&C contractors, countries like Guinea and Iraq should take a long-term view and develop national infrastructure plans rather than assessing only individual projects. Other needs are to further strengthen governance and ensure transparency, particularly in the tendering process. Where the respective capabilities are missing, qualified advisers such as contractors, consultants, bankers, lawyers and engineers should be involved. A broad stakeholder engagement is particularly important in the early phase of a project. Rigorous feasibility studies are an additional success factor to attract investment and to clearly lay out and evaluate the business case. Currently, the private sector spends around US$ 5-10 million to bid for a US$ 1 billion PPP project. At this cost level, private companies will only submit a bid if an equitable compensation for the tendering expenditure or a high likelihood of success exists. This limits competition and might lead to excessive prices being paid for PPP projects.

The participants developed a number of recommendations to make the PPP model work. In each country, an independent institution should be established to develop a long-term pipeline and procure PPPs without a political bias. Knowledge on PPP is at hand, but it needs to be distributed and made available to all key stakeholders. This could be done through the creation of a knowledge bank within the Forum, which could collect and disseminate best practices for PPPs in the E&C industry, both from the private as well as the public sector, and thus serve as a main point of contact for governments and the industry. Also, the Group of Twenty (G20)/Business Twenty (B20) process could be leveraged to market PPP best practices. In addition to the national PPP units, which are recommended not only for emerging markets, an international body of PPPs should be formed to spread best practices.

Chaired by
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Chair of the Governors Meeting for Infrastructure & Urban Development 2014; Chair of the PACI Governors Meeting 2014; Global Agenda Council on Anti-Corruption & Transparency

Special Guests
Alpha Condé, President of Guinea
Saleh Muhammed Al Mutlaq, Deputy Prime Minister of Iraq

01: Aleh Muhammed Al Mutlaq, Deputy Prime Minister of Iraq; Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India; Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
02: John M. Beck, Chairman and Chief Executive Officer, Aecon Group, Canada; Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland
03: Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia
04: Alpha Condé, President of Guinea
05: Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies, USA; Gregory Hodkinson, Chairman-Elect, Arup Group, Italy


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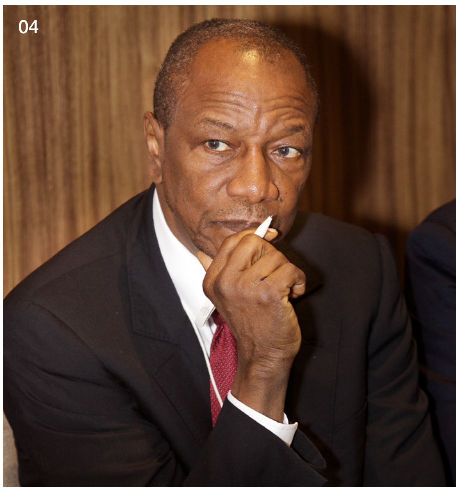
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New Models in Oilfield Services

Hilton Garden Inn Davos, Parsenn-Madrisa Room
Friday 24 January, 08.00 – 10.00

In the "New Frameworks for the Oilfield Services Industry" session held at the Infrastructure & Urban Development Governors Meeting 2013 and the New York Strategy Meeting 2013, participants from the oilfield services and equipment (OFSE) industry and oil companies identified the key issues facing the industry – the rising complexity in project management, human capital deficit and sustainable business models – and expressed interest in exploring these in 2014.

At the session, leaders from the oilfield services and oil and gas industries, as well as from government and civil society, shared their perspectives on these issues, and mandated and committed to take action at the community level in 2014, as the main outcomes will be developed into a cross-industry initiative at the Forum.

Key Takeaways

- The OFSE industry is facing a multitude of challenges: increasing project complexity and escalating costs, a shortage of talent, stricter requirements on local content, and more demanding environmental standards and community-engagement needs.
- To secure and advance their essential role in the oil and gas value chain, OFSE companies need to upgrade to the next level of operational excellence, pioneer new contracting models and collaborate more with one another, as well as with NOCs/IOCs and local governments.

Synopsis

The OFSE industry has come a long way from its origins in the 1980s. The industry's growth has regularly outpaced the increase in oil production, and OFSE companies now constitute an essential element in the oil and gas value chain, accounting for US$ 531 billion of US$ 764 billion in total upstream spending. OFSE companies have invested continuously in R&D and technology, and have become essential outsourcing partners to the IOCs; currently, they also directly service NOCs, and are starting to become equity partners in some assets.

The demand for oil is high and rising, underpinned by solid growth in populations and economies throughout the world. However, the supply side has increasing constraints: the time of "easy" oil is gone, and existing basins are depleting, so the size and complexity of projects is increasing. In addition, a shortage of skilled staff has adverse effects on delivering new projects and managing existing reservoirs. Finally, stricter local content requirements and environmental standards, as well as demands for more stakeholder engagement, now exist.

In the face of all these challenges, industry performance has deteriorated. Over 60% of large projects are over-budget, and over 70% are behind schedule; uptime performance is only 60%, costs are escalating, and capital expenditure is rising constantly – with severe impacts on profits. In the past, the industry was saved by high oil prices. However, according to forecasts, those prices are due to remain flat for some time, so the current cost squeeze could become more severe. Efficiency improvements are therefore crucial – and are demanded by stock markets.

To advance to the next level of efficiency, OFSE companies need to transform their way of doing business. Instead of developing new designs for new oil fields as in the past, engineers could apply standardization more broadly and reuse existing designs more often, thus lowering costs. Companies should also review specifications, and cease the tradition of overapplying safety factors and neglecting economics. As a whole, the industry needs to improve its project management, and leverage technology and innovation even more systematically. In addition, it should learn from the experiences of other engineering and capital-intensive sectors: the mining sector, for instance, is facing similar skills gaps and automation challenges. Currently, the OFSE industry is operating at four-sigma standards, but it could improve reliability by emulating the best practices pioneered in the automotive and aerospace industries, which operate at five- and six-sigma, respectively.

The required step change in efficiency would also be facilitated by new contracting models. Current procurement practices at NOCs/IOCs tend to focus too sharply on the lowest initial cost; they should place more emphasis on whole life-cycle costs. Greater use of incentivized service contracts, as in Mexico, might result in better risk sharing

01: Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom
02: Giuseppe Recchi, Chairman, Eni, Italy
03: Alison Redford, Premier of Alberta, Canada

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and alignment of interests. The use of integrated contracts, rather than piecemeal contracting, would allow OFSE companies to take more risks and develop innovative systemic solutions. The power sector serves as a model for this: it already makes extensive use of incentive-based maintenance contracts and long-term service agreements. Another imperative is to improve the flow of information from resource owners to contractors, enabling better planning and scheduling of resources and workforces. In addition, better alignment between companies is needed; this would lead to reduction in duplicated risk and investment, and to an increase in predictability.

The OFSE industry is facing a major talent crisis, with severe consequences for the quality of project delivery. This issue affects not just developing countries, but also developed countries which are challenged by an ageing oilfield workforce. The industry is losing its appeal for employees; although salaries have risen strongly over recent decades, staff is now less willing to work long hours. For example, in the UK, the traditional model of two weeks on the platform and one week off has been replaced by a two-weeks-on/three-weeks-off model. The skills relevant for OFSE companies cannot be developed quickly (they take ten years). As a consequence, new ways of filling the experience gap are needed. Schlumberger has changed its staff deployment model in Mexico, realizing that it cannot fulfil demand from the recruiting market; experienced staff now drill "from the office" instead of at the well site, and can thereby operate multiple wells at the same time.

New forms of collaboration would benefit the industry in areas such as R&D and human capacity building. And, by partnering with governments, companies could considerably increase efficiency. Governments can offer R&D support and provide training, with an emphasis on apprentices and not just on engineers. With its various challenges (long distance to markets and difficult climate), Alberta, Canada has been a pioneer in this regard by setting up "Productivity Alberta" and creating a single industry regulator to streamline approval processes and minimize delays.

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01: Participants in the session
02: Giuseppe Recchi, Chairman, Eni, Italy; David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; and Peter Oosterveer, Group President, Energy and Chemicals, Fluor Daniel, Netherlands
03: Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada; Emilio Lozoya Austin, Chief Executive Officer, Pemex (Petróleos Mexicanos), Mexico; James Mackey, Senior Executive Vice-President and Head, Power Business Division, Samsung Engineering, Republic of Korea
04: Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad, Malaysia; Nicholas Gee, Executive Vice-President, Strategy and Development, Weatherford International, Switzerland


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OFSE companies also need to adapt to new operating constraints. First, stakeholder engagement is increasingly important; broad community approval is crucial for delivering large-scale projects such as pipelines. In the United States (US) and many other markets, such engagement is already undertaken, but other countries are lagging behind. Second, there is an ongoing trend towards stricter local content requirements in many countries, ranging from Saudi Arabia to Brazil and across Africa.

The challenges outlined in this session affect not only OFSE companies, but the oil and gas industry at large. The World Economic Forum is committed to taking action in 2014, and launching the oilfield services initiative to tackle these issues. The chief executive officers (CEOs) attending the session agreed to nominate key executives, such as a chief of strategy, to work with the Forum team and provide input to the initiative, with the aim of contributing strongly to the successful transformation of the OFSE industry.


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Co-Chaired by
Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom
Giuseppe Recchi, Chairman, Eni, Italy

Special Guest
Alison Redford, Premier of Alberta, Canada


06

01: Amin H. Nasser, Senior Vice-President, Upstream Operations, Saudi Aramco, Saudi Arabia; Jean-Francois Poupeau, Executive Vice-President, Corporate Development and Communications, Schlumberger, USA
02: David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Boyd Merrett, Chief Executive Officer, Leighton Offshore, Malaysia
03: Samir Brikho, Chief Executive Officer, AMEC, United Kingdom; Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada; Emilio Lozoya Austin, Chief Executive Officer, Pemex (Petroleos Mexicanos), Mexico
04: Fabrizio Di Amato, Chairman, Maire Tecnimont, Italy; Amin H. Nasser, Senior Vice-President, Upstream Operations, Saudi Aramco, Saudi Arabia
05: Amjad Bseisu, Chief Executive Officer, EnQuest, United Kingdom
06: Jorma Ollila, Chairman, Royal Dutch Shell, Netherlands

Industry Partnership Sessions

Infrastructure Investment and Financing

Joint Session between the Infrastructure, Investors and Financial Services Industries

Hotel InterContinental, Turmalin/Adular Rooms
Friday 24 January, 15.15 – 17.00

Strategic infrastructure is crucial for economic growth, competitiveness and social development. Due to public budget constraints, a global infrastructure investment gap of about US$ 1 trillion per year persists. Channelling more private-sector capital into infrastructure could effectively contribute to reducing the gap, as institutional investors are increasingly interested in the infrastructure asset class.

Building on discussions at the World Economic Forum Annual Meeting 2013 on global infrastructure financing, this session highlighted leading practices and key levers developed in the Forum's work on infrastructure during 2013 to unlock more systematic private investment in infrastructure. Participants discussed how the Forum should shape its infrastructure and related financing activities in 2014.

Key Takeaways

- The infrastructure gap is a pressing issue; narrowing or closing it would have a powerful positive effect on global growth and social progress.
- Various initiatives have recommended action plans for governments, yet progress in implementing them has been limited. Make 2014 the year of action on infrastructure.
- To foster private investment, governments need to create a conducive infrastructure investment framework, develop and employ various risk mitigation tools, and assure funding of rigorous feasibility studies to enhance the bankability of individual projects.
- The World Economic Forum will advance the issues of project preparation financing, investment frameworks and knowledge sharing, and will promote the key recommendations via the G20/B20.

Synopsis

Addressing abundant unmet infrastructure needs could generate huge benefits in economic growth, social progress, jobs and poverty reduction. Given that the global infrastructure investment gap is about US$ 1 trillion annually, the traditional public-delivery model cannot cope on its own, and new approaches are required as well. Public tax budgets are increasingly constrained in the world after the global financial crisis. Consequently, narrowing the gap will require more public-private collaboration to leverage the private sector's skills and financial resources in delivering infrastructure efficiently and effectively.

The Forum received a mandate at its Annual Meeting 2013 to advance the agenda on infrastructure investment. Much work has been done since then, both within the Forum (the Global Strategic Infrastructure Initiative and the Infrastructure Investment Policy Blueprint) and outside it (e.g. the World Bank's new Global Infrastructure

01: Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative; United Nations Special Envoy for Global Education; Prime Minister of the United Kingdom (2007-2010); Global Agenda Council on Infrastructure, moderating the session and presenting the proposed Global Strategic Infrastructure Initiative roadmap for 2014
02: Alpha Condé, President of Guinea

01: Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia
02: Thomas Maier, Managing Director, Infrastructure, European Bank for Reconstruction and Development (EBRD), London
03: Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan; Stephen Dobbs, Senior Group President, Fluor Corporation, USA

Facility and the coming BRICS Development Bank (BRICS including Brazil, Russian Federation, India, China and South Africa).

To help governments formulate a strategy for attracting more private investment in infrastructure, the Forum's Global Agenda Council on Long-term Investing developed a blueprint for creating a conducive infrastructure investment framework. First, governments should develop a strategic vision and a credible and continuous project pipeline, initiate discussions with investors on their role and communicate the infrastructure strategy to all stakeholders. Second, they should put in place the policy and regulatory enablers for mitigating renegotiation risk, develop clear procurement processes, streamline permitting processes and create clear tax policies. Third, governments should develop an appealing investor value proposition, with clear financial returns matched to risks for each project stage, and an efficient risk allocation. A further important factor in attracting investors is stable government policy; disruptive policy change, as in the renewables sector, will discourage investors for the long term. Further requirements, according to the 2013 B20 recommendations, are common cross-border investment frameworks, improved risk-mitigation tools and more sharing of best practices.

Investors are easily deterred by the numerous difficult-to-manage risks that infrastructure projects face, involving interest rates, currency, and political and regulatory changes. While high demand for infrastructure investments exists in OECD countries, the risk-return profile in developing countries is typically less attractive. Multilateral development banks (MDBs) have a major role to play in developing countries as catalysts for creating the infrastructure asset class. MDBs should provide financial risk-management products to hedge interest rate and currency risks, or they should further develop the Multilateral Investment Guarantee Agency (MIGA) platform to mitigate political risk. They should also leverage their balance sheets to mobilize additional private capital – for example, by developing new types of products such as guarantees, credit enhancement or financing facilities. Although risk mitigation instruments provide a good solution in the medium term by attracting foreign investment, the long-term solution to the infrastructure financing gap is for governments to develop local capital markets. Many attractive infrastructure opportunities exist in emerging and developing countries, particularly those tied to resources, but the private sector often remains unaware of those opportunities and their returns. Thus, providing sound empirical evidence on the returns is required in order to demystify risks and improve risk perception. In China, for instance, a virtuous circle was created from a few early, successful projects that fostered trust between the public and private sectors.

The infrastructure shortfall is not merely a financing problem, however; the associated problem is that simply too few well-prepared project proposals exist. Projects need a bankable feasibility study with evidence of robust, underlying cash flows (through user fees or public-sector payments, land value capture and ancillary businesses). Another prerequisite for making projects bankable is to deregulate industries and reduce tariff and non-tariff barriers to enable trade and traffic, as initiated in East Africa. Governments are often too risk-averse to invest millions of dollars in feasibility studies, so MDBs could help by providing more resources for these studies. Ideally, one-stop shops will be created – either by central government agencies or by the MDBs – where project managers can apply for funds for their feasibility studies. An alternative, as in Brazil and India, would be the creation of project preparation facilities (like seed or venture capital funds in other industries), which would recycle funds from successful projects.

Africa is one of the regions with the highest need for infrastructure development and increased private-sector involvement. The Programme for Infrastructure Development in Africa (PIDA) created a common infrastructure vision for the continent, and identified the most important cross-border projects for fostering regional integration. Meanwhile, new

01: Macky Sall, President of Senegal
02: Mahendra Siregar, Chairman, Indonesia Investment Coordinating Board (BKPM), Indonesia
03: Philip Dilley, Chairman, Arup Group, United Kingdom

financing and delivery models such as PPPs need to be refined and scaled up, and can benefit from lessons learned from other countries. However, considerable concern still exists among foreign private investors about investing in Africa, despite many successful examples there of PPPs across all sectors. The enabling environment is now better than ever in many African countries; governance has improved, the business environment is stable, and various government initiatives to ease infrastructure financing are under way, such as the Africa50 Fund. The main problem is the lack of well-structured and well-prepared projects, and that in turn is due to a lack of capacity. To overcome the capacity constraint, Guinea, for example, is trying to lure back its diaspora by bridging the salary gap with MDB support.

Infrastructure is an atomized business, with different approaches and strategies taken by different sectors and countries, and with insufficient dissemination of lessons learned and success stories across those traditional boundaries. A new global knowledge-sharing platform is required, though each country needs to retain responsibility for its own infrastructure.

To make 2014 the year of infrastructure action, the World Economic Forum is committed to further advancing the global agenda on infrastructure – with respect to project-preparation funding, the infrastructure investment blueprint and a global knowledge-sharing platform. More MDBs should get involved, and the G20/B20 in Australia, with its focused and action-oriented approach, should pursue the previous recommendations vigorously.

Moderated by
Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative; United Nations Special Envoy for Global Education; Prime Minister of the United Kingdom (2007-2010); Global Agenda Council on Infrastructure

Special Guests
Alpha Condé, President of Guinea
Macky Sall, President of Senegal


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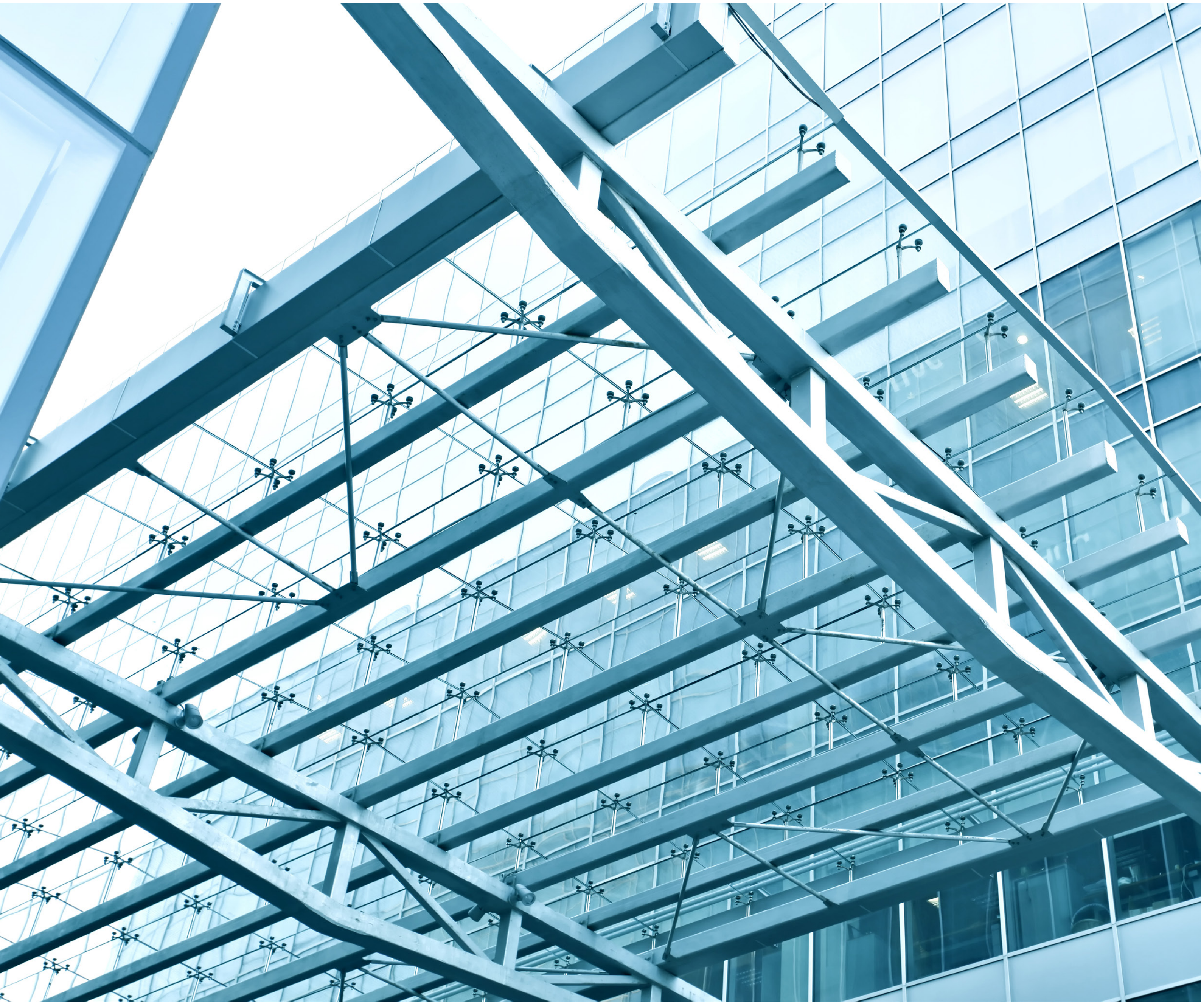
01: Danny Truell, Chief Investment Officer, Wellcome Trust, United Kingdom
02: Kirill Dmitriev, Chief Executive Officer, Russian Direct Investment Fund, Russian Federation
03: Bertrand Badre, Managing Director and Chief Financial Officer, World Bank, Washington DC
04: Claver Gatete, Minister of Finance and Economic Planning of Rwanda
05: Peter Terium, Chief Executive Officer, RWE, Germany
06: Gao Jifan, Chairman and Chief Executive Officer, Trina Solar, People's Republic of China
07: Gavin E. R. Wilson, Chief Executive Officer, IFC Asset Management Company, USA



The Future of Urban Development: Mayors' Guide to New Models for City Problem-Solving

Joined by Mayors and Governors from Leading Cities Around the World

Congress Centre, Pischa Room
Thursday 23 January, 08.00 – 09.30

Innovative solutions to address common urban problems are emerging around the world, from mobile apps that allow for new forms of civic participation to the rise of smart-city systems and the "government as a platform" concept, where citizens, government and businesses co-create solutions.

For centuries, cities have followed a top-down model involving centralized systems for the delivery of transportation, energy, health, water and other services. Yet, extreme slums, ageing infrastructure, looming climate risks and communication at hyper speeds underscore that this traditional model no longer works, and that city governments alone cannot solve the increasingly complex challenges.

This session convened mayors, city governors and chief ministers from several world regions, as well as experts and industry leaders, to share breakthrough models in city problem-solving. In the context of the "Future of Urban Development" initiative, the facilitator prompted the mayors and chief ministers of major cities to remark on the breakthrough models for urban problem-solving that they are testing in their cities.

Key Takeaways

– The challenges faced by cities in emerging markets often differ dramatically from those in mature economies, but there are nonetheless lessons to be learned and solutions to be shared between them. Channels for cross-regional exchange are needed, particularly between the global North and South.

01: Kasim Reed, Mayor of Atlanta, USA
02: Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India
03: Chan Heng-Chee, Chairman, Lee Kuan Yew Centre for Innovative Cities, Singapore University of Technology and Design (SUTD); Ambassador-at-Large, Ministry of Foreign Affairs of Singapore; Chair, Global Agenda Council on Urbanization

– Affordability is a challenge shared by mature and developing cities, and is closely linked to long-term economic health. Development of strong public transportation networks and transit-oriented development are fundamental steps to ensuring affordability across the economic spectrum.

– Improvement in liveability and quality of life is increasingly a priority of city leaders in order to stimulate investment by citizens and businesses in urban areas and to attract talent.

– City governments can play a powerful role in fostering an innovation mindset within their cities, and should be proactive in engaging businesses and citizens to co-create and co-implement solutions.

– No single "solution set" for cities exists; instead, a range of best practices can be tailored to the local context. New solutions are not always needed, as many great practices are already available that can be adapted and replicated. A key element to successful city leadership is adopting the best ideas from other cities and applying them locally.

– New mayors would benefit from having a collection of the "50 best global practices" available at the beginning of their terms. The World Economic Forum could facilitate the creation of this collection. Additional platforms for sharing knowledge among cities, between cities and the private sector, and between cities and national government entities are needed above and beyond existing platforms.

Synopsis

The renaissance of the citizen and business in urban governance and creating solutions

Participants agreed that city governance is no longer the sole responsibility of the public sector. Cities can more effectively address challenges through the interaction and collaboration of local governments, the private sector and citizens.

– Atlanta engages the chief executives of local companies in a committee that provides input for the city on how to solve its pressing issues. This ensures that businesses are invested in Atlanta's long-term interests.

– In Africa, cities like Johannesburg are increasingly engaging in PPPs to develop urban infrastructure projects, such as bus rapid transit.

– In India, officials agree that local government is not equipped to handle fast-paced urban migration, and that PPPs are necessary to develop housing and infrastructure. The urban population is anticipated to be 400 to 600 million by 2040. To ignite a private-sector response to proliferating slums, the state of Maharashtra allows slum redevelopment projects in Mumbai, for example, whereby real estate with high-density, high-rise housing is mixed with low-cost and market-rate units. The newly built low-cost units are then given back to the original slum-community tenants.

– In Madrid, an effort to streamline the city's procurement processes will change the nature of the relationship between the public and private sectors. Future requests for proposals will ask the vendor to meet defined urban goals rather than provide products. The effort will reduce the number of contracts put out to bid, and is predicted to save the city 100 million euros annually.

– To foster a sense of community engagement, the municipal government of Calgary, Canada emphasizes the term citizen rather than taxpayer. The city actively seeks community engagement through an initiative based on the idea of "What can you do for your community?"

01: Li Tie, Director-General, China Center for Urban Development, People's Republic of China
02: Kim Metcalf-Kupres, Vice-President and Chief Marketing Officer, Johnson Controls, USA
03: Shoji Takenaka, Global Vice-President, Smart Community Division, Toshiba Corporation, Japan
04: Boris Johnson, Mayor of London, United Kingdom

Bringing the village back into the city, versus transplanting urbanity to the village

In mature cities, efforts are underway to recreate aspects associated with village life as a tool to reduce crime, rebuild a sense of community and foster investment in the urban realm by citizens and businesses. At the same time, some cities in emerging markets are trying to slow urbanization rates by putting urban facilities in villages.

- London is working to foster a sense of village life by organizing street parties in each neighbourhood; by planting trees (tree coverage has increased 25%); and by promoting pedestrian-oriented design. At the city-wide level, the 2012 Olympics helped to grow an overall sense of civic pride.

- Buenos Aires aims to "humanize" its public spaces by prohibiting automobiles in certain areas and transforming the spaces into pedestrian-oriented zones as part of its "Green Agenda". The city is also working to create concentrated areas of mixed use and high density to ensure a lively neighbourhood environment.

- In China, to curb urbanization flows to major cities, a national effort seeks to bring typically urban services to rural areas. Similar efforts are occurring in Africa, where the populations of 60 cities will surpass 1 million citizens by 2030.

- Because of its history of apartheid, Johannesburg still has many isolated, poor neighbourhoods lacking vital urban services. The city is working to knit these neighbourhoods together through major transit corridor projects and transit-oriented development, with the intent to improve equity and increase access to economic opportunity.

Affordability and the paradox of successful cities

Affordability is a rising concern in both mature and developing cities. As cities achieve economic success, they attract more residents, leading to ever higher prices, particularly in housing; it becomes difficult to avoid pricing-out citizens at the bottom of the income spectrum. This problem is particularly acute for cities like New York, London and Barcelona.

01: Participants in the session
02: Xavier Trias i Vidal de Llobatera, Mayor of Barcelona, Spain
03: Dylan E. Taylor, Chief Executive Officer, Americas, Colliers International, USA

Cities in emerging economies face similar challenges. Vast slum communities and large informal economies are symptoms of the inability of government to keep pace with the influx of rural migrants to urban areas, and to create policies that spur creation of formal, affordable housing options at scale. Residents of slum communities often face excruciating commutes of several hours each day in order to reach their jobs, due to a lack of affordable housing options near employment centres and inadequate/inefficient public transportation options.

In both mature and emerging regions, comprehensive public transportation networks, as well as dense, mixed-use development concentrated around public transportation hubs, are viewed as vital tools to help increase affordability and ensure access to economic opportunity as cities grow.

– Like many cities, Johannesburg is divided into single-use districts. Residential areas are far away from schools and commercial centres. To address this, the city is focused on promoting high-density, mixed-use development along defined "transit corridors". Transit investments will act as a double equalizer, patching a city divided by apartheid while also linking communities disconnected from basic urban services to improve affordability.
– In Mumbai, projects to overcome the challenge of exorbitant land and housing prices include the development of new townships and redevelopment of slum areas (described earlier). The political environment to implement these projects is demanding, since changes to municipal legislation are time-consuming. In the future, changes to municipal taxation will be necessary to help address the issue.
– New York City offers density and height bonuses as incentives to residential developers for the inclusion of affordable housing units.

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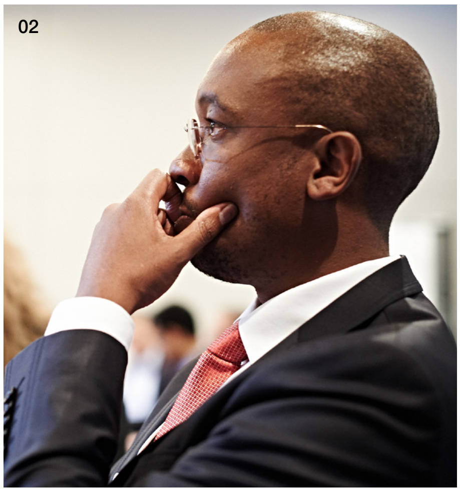


01: Kamal Nath, Minister of Urban Development and Minister of Parliamentary Affairs of India
02: Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa

Reinventing a city's cachet: a tool to overcome temporary challenges
Barcelona went through several metamorphoses and continuously changed and reinvented itself over time: from a sports and Olympic city, to a touristic, a welfare and, in recent years, an innovation city. Barcelona knows its key problems; currently, the biggest challenge is unemployment. The municipal government decided to reinvent Barcelona as the city of new technology, which included the implementation of smart-city solutions. Despite the difficult situation for many of its citizens, the city's municipal government was able to attract the non-profit sector and create businesses in the private sector.

Urban infrastructure development: variations in life cycle and need across regions
Cities around the world are in different stages of infrastructure development, and thus face varying challenges and require different responses. Developing cities in emerging economies should be careful not to follow the Western model of sprawling, low-density development typical of the 20th century. That model makes it difficult for municipalities to develop comprehensive public-transportation infrastructure and exacerbates traffic congestion by creating an over-reliance on the private automobile.

– European and North American cities face the challenge of updating and maintaining ageing infrastructure, and maximizing efficiency of existing infrastructure assets. Cities like Atlanta are now working hard to address the effects (e.g. congestion) of a city designed around the automobile.

– In Africa and India, most regions are in the early stages of infrastructure development, and both regional-level and city-level development are needed. As new African cities emerge, the challenge is to use novel technologies and leapfrog the Western model of automobile-oriented development. The PPP model has recently started being emulated on the African continent, but more needs to be done.

– China has focused on developing major regional-level infrastructure projects such as intracity rail, airports and highways with little focus on fine-grain, intracity transit that accommodates pedestrians. The challenge ahead is to develop the "last mile" connectivity infrastructure that enables citizens to efficiently move within the city, without relying on private automobiles. There is keen interest in China to understand how smart-city technologies such as traffic control software and intelligent transportation solutions can help address increasing congestion issues.

– Tokyo and Singapore are viewed as good models for emerging cities, particularly in China, in terms of last-mile infrastructure and a fine-grain public transportation system, coupled with strict regulations and disincentives for private automobile use. In Singapore, the investment, maintenance and operational costs for private automobiles are very high. The municipal government limits the number of certificates of entitlement for private automobiles and taxes them highly. To balance this, the subway system is highly subsidized.

Cross-regional learning and applicability
Though the notion of "catching up" might still be attractive to emerging cities, it would be hasty to assume that cities must follow a linear process in order to reach maturity.

Emerging cities should not necessarily replicate mature cities' recipes for success. Reciprocally, mature cities should learn from the efforts of emerging cities and not disregard practices that can be adapted and applied.

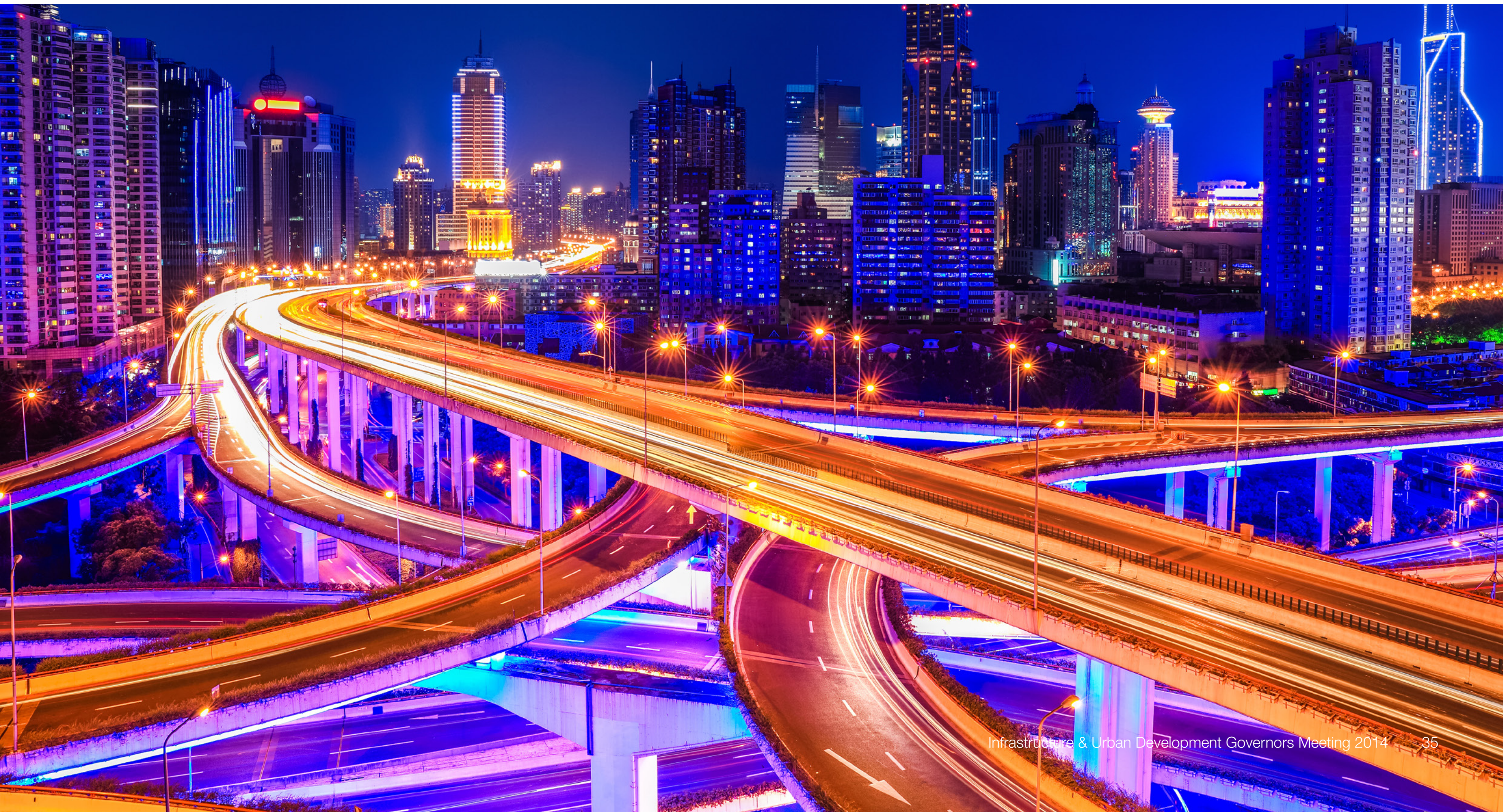
Whether across the North-South or East-West divide: sharing knowledge among cities; between cities and the private sector; and between cities and national government entities is emphasized as a vital practice to promote sustainable, healthy and responsible urban development. Despite existing initiatives, cities will benefit from additional opportunities for exchange, particularly across regional and national borders.

Chaired by
Philip Dilley, Chairman, Arup Group, United Kingdom

Facilitated by
Chan Heng-Chee, Chairman, Lee Kuan Yew Centre for Innovative Cities, Singapore University of Technology and Design (SUTD); Ambassador-at-Large, Ministry of Foreign Affairs of Singapore; Chair, Global Agenda Council on Urbanization

Special remarks and reactions by
Ana Botella Serrano, Mayor of Madrid, Spain
Prithviraj Chavan, Chief Minister of Maharashtra, India
Boris Johnson, Mayor of London, United Kingdom
Li Tie, Director-General, China Center for Urban Development, People's Republic of China
Mauricio Macri, Mayor of Buenos Aires, Argentina
Trevor Manuel, Minister of the National Planning Commission (NPC) of South Africa; Global Agenda Council on New Growth Models
Bala Abdulkadir Mohammed, Minister of the Federal Capital Territory of Nigeria
Kamal Nath, Minister of Urban Development and Minister of Parliamentary Affairs of India
Naheed Nenshi, Mayor of Calgary, Canada; Young Global Leader
Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa
Qu Xiaofei, Vice-Mayor of Dalian, People's Republic of China
Kasim Reed, Mayor of Atlanta, USA
Xavier Trias i Vidal de Llobatera, Mayor of Barcelona, Spain

Table Hosts
Patrick Khulekani Dlamini, Chief Executive Officer and Managing Director, Development Bank of Southern Africa, South Africa
Daniel Doctoroff, Chief Executive Officer, Bloomberg, USA
Pawan Goenka, Executive Director and President, Automotive and Farm Equipment Sectors, Mahindra & Mahindra, India
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India
Gregory Hodkinson, Chairman-Elect, Arup Group, United Kingdom
Dylan E. Taylor, Chief Executive Officer, Americas, Colliers International, USA; Young Global Leader



Mining and Infrastructure Collaboration Imperative

Joint Session between the Mining and Metals and the Infrastructure Industries

Sheraton Hotel Waldhuus, Jakobshorn Room B+C
Thursday 23 January, 08.30 – 10.00

The mining and metals industry, as well as the infrastructure and urban development industry, are closely interconnected and subject to numerous risks. The development of mining projects has become more complex, and both industries have begun to seek new ways to address their common challenges. Governments and other stakeholder groups are demanding new infrastructure models that are multi-use and multipurpose, as opposed to the traditional single-use, single-purpose model. These new approaches call for closer collaboration among industries to address these risks.

– How can the risk profile of infrastructure investments in the mining and metals sector be minimized?
– How can expectations for shared-use infrastructure best be managed?
– What are the common areas of interest, and how can E&C and mining and metals companies best work together to deliver infrastructure for the mining and metals sector?

Key Takeaways

– Economic development is being hindered in resource-rich regions due to insufficient transportation and utilities infrastructure.

– While multi-use and multipurpose infrastructure can provide benefits to local communities, it is also more complicated and expensive to finance, construct and manage, and can reduce the operational efficiency of mining operations compared with sole-use infrastructure assets.

– PPPs are a potential solution to financing infrastructure, but need to be supported with appropriate design, recognition of shared value, strong legislative and regulatory frameworks, reasonable expectations and local capacity building.

Synopsis

There is insufficient infrastructure, particularly for transportation and utilities, to support the growth ambitions of commodity businesses. It is becoming harder to finance infrastructure projects, as they are increasingly located in emerging countries with higher risk profiles. In these regions, companies and investors face challenges, including immature legislative and regulatory environments, commodity price volatility and unstable community relations.

Mining-and-metals-related infrastructure projects are also long-term projects, where investors may not see a return for many years. The global financial crisis has exacerbated the challenges of financing infrastructure projects. Until a solution is found to finance and develop the necessary infrastructure, natural resources that could be used to generate economic development are trapped.

The demand to develop multi-use and multipurpose infrastructure, rather than infrastructure used solely by mining companies, is growing. While multi-use/multipurpose infrastructure can provide benefits to local communities,

01: Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada; and Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece
02: Madhu Koneru, Group Executive Director, Trimex Group, United Arab Emirates

it is also more complicated and expensive to finance, construct and manage, and can reduce the operational efficiency of mining operations compared with sole-use infrastructure assets.

Sole-use mining infrastructure does not recognize local needs, which can deter economic development and lead to underutilization when the mining company leaves. This was the case in Liberia, when the commodity price dropped in the 1980s and iron ore companies exited the region, leaving behind railways that became useless. Only limited examples of successful multi-use infrastructure projects exist, however, as it is exceptionally difficult to balance access rights and operational control with financial contribution between industry and civil society.

One possible solution to financing multi-use/multipurpose infrastructure is through PPPs, which set up an entity responsible for developing the infrastructure; the government is given a clear role but with minimal equity responsibilities. Giving the government a role provides comfort to stakeholders, helping to reduce the risk – especially sovereign risk – of the project, thus making it more attractive to investors. To develop effective PPPs, it is critical for mining and construction companies as well as governments to collaborate more closely.

Participants discussed five areas that will contribute to successful PPPs:

1. **Appropriate design**: Governments, mining companies and communities need to adopt a more holistic approach to infrastructure design to meet the requirements of mining companies, governments and local communities; regional solutions should be considered to help develop industries and maximize investment returns.
2. **Shared value**: A new model is required to appropriately distribute the costs and benefits of infrastructure projects to stakeholders (mining companies, governments, local communities). A mutual understanding of the value for each successive layer of costs is needed so the financial responsibility can be linked to those receiving the greatest additional value.

01: Alpha Condé, President of Guinea; and Kerfalla Yansané, Minister of Mines of Guinea
02: Stephen Dobbs, Senior Group President, Fluor Corporation, USA; Global Agenda Council on Infrastructure
03: Shiv V. Khemka, Chief Executive Officer and Vice-Chairman, SUN Group, India; Logan Kruger, President and Chief Executive Officer, SUN Gold, India; and Alex Wong, Senior Director, Head of the Centre for Global Industries, World Economic Forum, Switzerland
04: Felipe Larraín Bascuñán, Minister of Finance of Chile; and Rafael Mateo Alcalá, Chief Executive Officer, Acciona Energia, Spain

3. **Strong legislative and regulatory frameworks**: Stable frameworks should recognize the substantial investment on exploration made by companies will help attract further investment. Similarly, robust governance will ensure that companies with licences must actively extract identified resources. Concessions, minimum demand guarantees and take-or-pay arrangements can be developed with strong frameworks to make it easier for companies and investors to finance a project and provide revenue for governments.

4. **Reasonable expectations**: Some stakeholders do not understand that it can take more than 10 to 15 years between resource identification and the first delivery, and that infrastructure requirements are not always known in advance. Greater education is required to gain the support of the local community and build trust among stakeholders.
5. **Local capacity building**: Governments need to develop greater knowledge of the natural resources in their countries, and provide their people with the skills to support the exploration and extraction of mineral resources.

The lack of infrastructure is blocking development. Mining companies have the opportunity to partner with players across the industry value chain to explore new ways to deliver infrastructure projects. The mining industry can leverage the multi-industry experiences of E&C companies for itself (e.g. licensing practice in the oil and gas sector). The World Economic Forum is available to support these conversations with regional gatherings and country-level roundtables.

Co-Chaired by
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
Madhu Koneru, Group Executive Director, Trimex Group, United Arab Emirates

Special Guests
Alpha Condé, President of Guinea
Ellen Johnson-Sirleaf, President of the Republic of Liberia
Felipe Larraín Bascuñán, Minister of Finance of Chile
Macky Sall, President of Senegal

Special Remarks by
Stephen Dobbs, Senior Group President, Fluor Corporation, USA; Global Agenda Council on Infrastructure
Gary J. Goldberg, President and Chief Executive Officer, Newmont Mining Corporation, USA
Lee A. McIntire, Executive Chairman, CH2M HILL Companies, USA

01: Gary J. Goldberg, President and Chief Executive Officer, Newmont Mining Corporation, USA; and Christopher Logan, Co-Founder and Chief Executive Officer, Silk Road Mining and Development, Canada n
02: Andrónico Luksic, Executive Director, Antofagasta Minerals, Chile; Saikhanbileg Chimed, Minister of the Cabinet Office of Mongolia; Diego Hernandez, Chief Executive Officer, Antofagasta Minerals, Chile; and Logan Kruger, President and Chief Executive Officer, SUN Gold, India
03: Neil Alexander Bruce, President, Resources, Environment and Water, SNC-Lavalin Group, United Kingdom; and Simon Naylor, Group President, Americas, AMEC, United Kingdom
04: Participants in the session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African Infrastructure

A Joint Initiative of the World Economic Forum with the African Development Bank, the African Union Commission and the New Partnership for Africa's Development (NEPAD) Planning and Coordinating Agency

Hotel Grischa, Rinerhorn Room
Friday 24 January, 08.00 – 09.00

In discussions at the 2012 World Economic Forum on Africa (Addis Ababa, Ethiopia), international and African business leaders endorsed the launch of an African-focused, business-driven initiative to accelerate the implementation of the Priority Action Plan (PIDA). The objective of this initiative is to add the private-sector perspective to the process of speeding up the implementation of the programmes in the Plan.

This is a joint initiative of the World Economic Forum with the African Development Bank, the African Union Commission and the NEPAD Planning and Coordinating Agency as the overall coordinating agencies of PIDA. It has been recognized by the African Union Commission as a key driver to increase private-sector involvement, while accelerating the project preparation process for delivering strategic infrastructure assets.

Following the 2013 World Economic Forum on Africa (Cape Town, South Africa), the World Economic Forum convened heads of state and top leaders from multilateral organizations and business to discuss the initiative's second phase and in particular:

- Progress since the 2013 World Economic Forum on Africa and the projects identified for acceleration
- Exchange on priority topics to advance African infrastructure, including project preparation, capacity building and project financing
- Next steps of the initiative

Key Takeaways

- The public and private sectors acknowledge the initiative's progress so far and are committed to support the next phase with resources.
- Early-stage project financing is the key bottleneck to building a pipeline of attractive projects and to unblocking PIDA's implementation.
- Central Corridor and Beira Corridor will be used as the initial two pilots for the acceleration concept.
- Success of the pilots is crucial to building a track record and experience.
- The initiative will report back on progress at the 2014 World Economic Forum on Africa (Abuja, Nigeria).

Synopsis

Since the 2013 World Economic Forum on Africa, the initiative has worked in three areas:

- A concept paper on Transnational Infrastructure Programme Management has been drafted, which outlines the key challenges of managing regional infrastructure programmes and provides some best practices on how to address them.
- A new model for Early-stage Project Financing has been developed. The model describes a sustainable Infrastructure Project Preparation Facility (IPPF), which is jointly operated and financed by the public and private sectors.
- The last workstream is concerned with the identification of pilot programmes for an acceleration workshop concept. Based on the methodology developed in Phase I of the initiative, a shortlist of 16 programmes from the PIDA Priority Action Plan portfolio was identified and presented in Cape Town. Since then, the initiative worked on further narrowing down the shortlist to identify the two pilot programmes with the highest potential for immediate acceleration.

The participants from both the public and private sectors acknowledge the initiative's progress so far. There was unanimous agreement that the initiative is an important way to speed up PIDA's implementation. Several parties from the public and private sectors signalled that they are committed to support the next phase with resources.

Early-stage project financing is confirmed as the crucial bottleneck to building a pipeline of attractive projects and to unblocking PIDA implementation. Existing IPPFs in Africa are currently not sufficiently endowed with both financial and human resources to shoulder the preparation of the PIDA programmes. The key difficulty for financing the preparation of projects is that returns are not immediate and risks are tremendous. Guarantees from national governments, development banks and multilateral organizations are required to engage the private sector in project preparation. A positive return on investment is also needed to attract private-sector investment. In any case, a conflict of interest has to be avoided if a private company is active in the preparation of a project and is then participating in the tendering process. It was stressed as well, however, that constraints are also opportunities – and many participants from the private sector expressed their interest to engage in project preparation, both financially as well as by providing technical assistance. The newly established Africa50 Fund will contribute as well to bridging the financing gap in Africa.

Two programmes in different regions will be used to pilot the acceleration workshop concept, and to gain experience in different regions while avoiding an overly strong focus on one country. The current concentration on two pilots is required due to a lack of human resources. It is decided that the Central Corridor and the Beira Corridor will be used as the initial two pilots for the acceleration concept. Both corridors play a crucial role in regional integration and will unlock interregional trade. The Central Corridor encompasses the three sectors of rail, road and port, and provides Dar es Salaam port with access to six landlocked countries, while the Beira Corridor connects Zimbabwe and Zambia with the port of Beira. The two main host countries of these programmes, Tanzania and Mozambique, promised support for organizing and conducting a first acceleration workshop in March/April.

While upgrading of existing facilities and construction of new pieces of infrastructure are required in both programmes, non-physical aspects are also important to increase the efficiency of the transport routes, such as by shared systems between different agencies or reducing the number of roadblocks.

All participants agreed that the success of the pilots is crucial to building a track record and experience. A successful acceleration of the two pilot programmes will prove that Africa, as a continent, is serious about implementing PIDA. The concept will provide a model for accelerating infrastructure programmes with public-private collaboration, which will then be replicated for other programmes. The experience and lessons learned in the two pilots can be transferred, and will benefit other programmes and regions. However, each PIDA programme is different, and one single model might not fit all; adaptations will need to be made to tackle its specific challenges.

The initiative will report back on the progress made at the 2014 World Economic Forum on Africa. The report will cover not only the outcomes of the acceleration workshops in Tanzania and Mozambique, but also the application of the two concept papers on Early-stage Project Financing and Transnational Infrastructure Programme Management to the Central Corridor and Beira Corridor.

Chaired by
Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative; United Nations Special Envoy for Global Education; Prime Minister of the United Kingdom (2007-2010); Global Agenda Council on Infrastructure

Special Guests
Esperança Laurinda Francisco Bias, Minister of Mineral Resources of Mozambique
Pravin Gordhan, Minister of Finance of South Africa
Maria Kiwanuka, Minister of Finance and Economic Planning of Uganda
Bala Abdulkadir Mohammed, Minister of the Federal Capital Territory of Nigeria
Harrison Mwakyembe, Minister of Transport of Tanzania
Macky Sall, President of Senegal
Kerfalla Yansané, Minister of Mines of Guinea

Discussion Leaders
Patrick Khulekani Dlamini, Chief Executive Officer and Managing Director, Development Bank of Southern Africa, South Africa
John Rice, Vice-Chairman, GE, Hong Kong SAR

Annual Meeting 2014 Official Sessions

The Infrastructure Imperative

Congress Centre, Aspen II Room
Thursday 23 January, 14.45 – 15.45

How can new financing mechanisms ensure that pressing infrastructure needs are met?
– Infrastructure investment as a new asset class
– Partnerships for financing infrastructure
– Infrastructure development projects for economic development and job creation

Synopsis

These insights were written by Thomas Maier, Managing Director, Infrastructure, European Bank for Reconstruction and Development (EBRD), London

Key public and private sector representatives from around the world discussed the challenge of delivering more infrastructure to support economic growth, job creation, quality of life and improved competitiveness.

A consensus emerged among the panellists on the main drivers of the infrastructure gap:

– At the moment, available financing from existing banks and capital-market players is broadly sufficient in both emerging and mature markets.

– The key bottleneck for more infrastructure delivery is the insufficient number of good-quality projects that reach the market. This is particularly the case in emerging markets, where the public sector may have limited institutional capacity to oversee the preparation of complex investment projects, and where important gaps remain in a conducive and stable regulatory framework.

– From a policy perspective, the public sector needs to do more to convince voters that users may need to pay more for infrastructure, as fiscal space for governments becomes increasingly tight. At the same time, more infrastructure is a key ingredient for more and better jobs and better quality of life.

01: Douglas L. Peterson, President and Chief Executive Officer, McGraw Hill Financial, USA; Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia
02: Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative

Solutions

The panel agreed on near-term actions, which were:

– *Improve knowledge exchange to avoid reinventing the wheel*
Panellists supported the set-up of a World Economic Forum knowledge platform, where solutions and best practices from around the globe can easily be accessed and understood by technical experts and decision-makers. Such a global platform currently does not exist, making it difficult to replicate successes in respective home markets.

– *Accelerate project preparation to give growth and job creation a boost*
Successful examples of systematic project preparation facilities exist in Brazil, the Philippines and elsewhere, funded from both public and private sources. More is needed around the world. Here, international finance institutions and national development banks, as well as the G20 governments, can play a role to create project preparation facilities for emerging markets and quickly deliver a higher number of mature project proposals. Such facilities should also help the public sector to build up better supervision, regulation and strategic policy capabilities, including the need to facilitate stronger project cash flows and efficient public sector support.

Moderated by
Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative; United Nations Special Envoy for Global Education; Prime Minister of the United Kingdom (2007-2010); Global Agenda Council on Infrastructure

Session Panellists
Luciano Coutinho, President, Brazilian Development Bank (BNDES), Brazil
Kirill Dmitriev, Chief Executive Officer, Russian Direct Investment Fund, Russian Federation; Young Global Leader; Global Agenda Council on Russia
Kamal Nath, Minister of Urban Development and Minister of Parliamentary Affairs of India
Douglas L. Peterson, President and Chief Executive Officer, McGraw Hill Financial, USA
Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia; Global Agenda Council on Infrastructure

Rapporteur
Thomas Maier, Managing Director, Infrastructure, European Bank for Reconstruction and Development (EBRD), London; Global Agenda Council on Infrastructure

Learning from Leading Cities

Congress Centre, Dischma Room, Workshop
Thursday 23 January, 16.45 – 18.45

What can enterprises and economies learn from high-performance cities?

- Building resilience into complex systems
- Designing finance and implementation partnerships
- Rethinking civic engagement

The Issue

Currently, there are five megacities in the world, each with more than 15 million people, and the number of megacities is expected to increase to 22 by 2025. Considering that the Asian middle classes are set to increase threefold in the same period, urban centres will be under intense pressure from migration and development. In many cities in emerging markets, a development gap exists and it will take five to ten years to catch up on, and move forward, on infrastructure. The consequences of these pressures are huge and will affect an ever-growing global urban population.

Options for Action

Although cities face many far-reaching issues, such as degradation and segregation of some urban areas, and pressure on overstretched infrastructure such as sewage, transportation, power and pollution, a great opportunity exists to learn from leading cities.

Washington DC has a unique independence, as it is governed under federal law. Early planning decisions, such as limiting the height of buildings and its history as a political centre, put pressure on many districts.

These decisions have proven to be advantageous, however, as the city diversifies away from the traditional political elite into other areas such as technology start-ups, healthcare and defence.

Lessons from New York City include activation of youth through digital engagement, employing a chief technology officer and encouraging women towards careers in science, through exposure to technologies such as robotics from a young age.

Capacity building is key to urban development in India. To advance the infrastructure at the required pace, the domestic skills base will need to increase.

Johannesburg has defined a long-term strategic plan to help it solve issues such as degradation of townships. One approach has been to build transport development corridors to provide cross-cutting communities and services, while providing efficient access to the city's services and centre.

Singapore is considered a model of how to successfully run a city. Some of the factors that have supported its development are: equal treatment of foreign and domestic investment; low taxation to attract skilled workers; strong trade facilitation with an automated shipping and customs system; a free port with zero tariffs; an electric transport and road-pricing system; and, perhaps most importantly, a small and lean government.

Helsinki has a different approach; it focuses on attracting international talent through its strong education system, culture and international links, as well as a start-up culture that is helping to drive wealth creation in the city.

When looking at scenarios for the development of cities, the key messages include:

- Creating a city brand with simple, strong messaging
- Strong, clear leadership
- Safety, law and order
- Public-private partnerships
- Focus on infrastructure development
- Strong transport systems
- World-class education
- Diversified talent
- A clear plan

Session Panellists
Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA
Caroline Ghosn, Founder and Chief Executive Officer, Levo, USA; Global Shaper
Kamal Nath, Minister of Urban Development and Minister of Parliamentary Affairs of India
Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa
Razeen Sally, Visiting Associate Professor, Lee Kuan Yew School of Public Policy, National University of Singapore; Global Agenda Council on Competitiveness
Alexander Stubb, Minister of European Affairs and Foreign Trade of Finland; Young Global Leader

Facilitated by
Tian Wei, Moderator and Host, CCTV News, China Central Television, People's Republic of China; Young Global Leader

01: Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA
02: Caroline Ghosn, Founder and Chief Executive Officer, Levo, USA; Global Shaper
03: Alexander Stubb, Minister of European Affairs and Foreign Trade of Finland; Young Global Leader

01


02


03


The Future of Extractives

Congress Centre, Dischma Room, Workshop
Wednesday 22 January, 13.45 – 15.15

With rising concerns over scarcity and environmental deprivation, how can the resource industries drive growth within planetary boundaries?

The session objectives:
- Explore drivers of change
- Map necessary industry transformations
- Redefine value in a sustainable world

These insights were written by R. Anthony Hodge, President, International Council on Mining and Metals (ICMM); Chair, Global Agenda Council on Responsible Mineral Resources Management

Seventy people engaged in a highly animated exploration of the transformation needed in the industry to bring society to a "sustainable world".

One of the panellists set out the three critical changes that have occurred in the past decade: increase in knowledge and awareness about mining and metals; increase in demands for fairness in the distribution of costs, benefits and risks; and ongoing global concern for the environment.

Inevitably, these changes are leading to more partnerships, more transparency and inclusiveness, and more dialogue and sharing.

Another participant strengthened this context by pointing out that innovative partnerships were also bringing governments together. Then, a model was outlined for a 2050 sustainable world:
- Planetary boundaries would have been reached
- The inequalities apparent today would have disappeared
- The world's population would have plateaued at 9 billion
- Massive growth within ecosystem boundaries would have occurred

For materials, zero waste would be the rule. Eco-efficiency would have increased tenfold. The closed-loop economy would be entrenched. Massive investment in research and development would have led to innovative technologies. Social issues would be addressed; health and safety would be achieved; "externalities" would be internalized as a matter of course; and a full cost perspective would be driving share value.

Participants broke up into four teams to examine the following topics:

Values
- Achieving the integration of full cost perspectives into all of society's activities will be a slow journey.
- Company governance may change; board representatives may be named from governments as a means of opening up and establishing trust, and companies may become service providers and not "owners" of resources.

Workforce
- To attract people, companies will synchronize their needs and values with workers' gifts and values, rather than "cultivating" skill sets.
- The full project life cycle will be considered; for a 30-year mine, this will often involve 100 years or five to seven generations.
- The key to workforce development may be more about economic diversification than about meeting skill needs in the short term.

Research and Development
- The connections linking companies, governments and universities are critical here; a strong partnership is needed to establish an agreed-to framework for undertaking research and development.
- The needs of infrastructure development and service providers need full consideration.

Partnerships
- New, social media-driven models will emerge, bringing transparency and quality of dialogue.
- Partnerships will be multigenerational by design.

Participants concluded that mineral resources can deliver blessings and not curses. The whole group called for a move away from a blame mentality to one of collaboration and dialogue.

Discussion Leaders
Peter Bakker, President, World Business Council for Sustainable Development (WBCSD), Switzerland; Global Agenda Council on Governance for Sustainability
Samir Brikho, Chief Executive Officer, Amec, United Kingdom
Helen E. Clark, Administrator, United Nations Development Programme (UNDP), New York
Gary J. Goldberg, President and Chief Executive Officer, Newmont Mining Corporation, USA
Neal Keny-Guyer, Chief Executive Officer, Mercy Corps, USA
Donald Lindsay, President and Chief Executive Officer, Teck Resources, Canada
Johan Rockström, Executive Director, Stockholm Resilience Centre, Sweden; Global Agenda Council on Measuring Sustainability
Jeffrey D. Sachs, Director, The Earth Institute, Columbia University, USA

Facilitated by
Andrew Steer, President and Chief Executive Officer, World Resources Institute, USA; Global Agenda Council on Biodiversity & Natural Capital

Rapporteur
R. Anthony Hodge, President, International Council on Mining and Metals (ICMM), United Kingdom; Global Agenda Council on Responsible Mineral Resources Management

Special Guests
Alpha Condé, President of Guinea
Tsakhiagiin Elbegdorj, President of Mongolia

The Future of Oil and Gas

Congress Centre, Forum Room
Saturday 25 January, 10.45 – 11.45

How is the unconventional oil and gas revolution transforming the sector and the world?

- Rising players and the future of big oil
- Environmental and climate implications
- Navigating regulatory minefields

The Issue

Shale oil and gas have proved revolutionary for the US energy position, substantially reducing the cost of energy. This is challenging the rest of the world to match US efficiencies in the oil and gas industry and "up their game" in terms of delivery. Yet shale is moving slowly in other markets, from Europe to Argentina and to China.

The Consequences

As extraction of oil and gas is becoming more complex, the oil and gas industry is lagging behind in terms of project delivery. A recent AT Kearney survey found that 66% of large projects were running over budget and 77% were behind schedule. Meanwhile, the uptime in the North Sea has dropped from 80% to 60%, despite higher spending. "If we're going to have a flat oil environment, if prices are going to be US$ 100 to US$ 120, there is no more slack in the system: we have to up our game," said Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom.

Around the world, the shale sector has been much slower to take off than in the United States. Why? In the United States, a combination of the rule of law, access to investment and clear mineral rights have helped accelerate the sector, said Kenneth A. Hersh, Founder and Chief Executive Officer, NGP Energy Capital Management, USA. Thirty-two states in the United States now produce oil and gas. "The single greatest thing about the unconventional revolution is that consumers can become producers," said Hersh.

In Europe, however, progress on shale is mired in controversy over environmental regulations. Meanwhile, Christophe de Margerie, Chairman and Chief Executive Officer, Total, France, pointed out that "there is a lot of potential" in China, but questioned why the country was moving so slowly. Argentina has the world's second-largest gas field and fourth-largest oil field in Vaca Muerta, but lacks the equipment needed to access the shale deposits, according to de Margerie. "Today there is no more peak oil but there is still peak capacity," said de Margerie. Creating the capacities to develop long-term reserves is an issue.

Marcos Bulgheroni, Executive Vice-Chairman and Board Member, Bridas Energy Corporation, Argentina, shared de Margerie's concerns but said developing Vaca Muerta was a question of when, not if. He said the industry had the expertise to develop the field but needed at least US$ 15-20 billion of investment.

A further challenge is to address the issue of climate change, in an environment where there is no more peak oil. The "dash to renewables" by Germany and the European Union failed to meet its targets, according to Majid Jafar, Managing Director of the Board, Dana Gas, United Arab Emirates. The targets have now been abandoned, he said. Shale gas is a cleaner form of energy than other fossil fuels; it is also good for energy independence, consumers and economic growth. Yet Germany – which remains opposed to fracking – is now importing lignite, "the dirtiest form of coal", from the United States at great cost, according to Jafar. De Margerie observed that Germany is now replacing nuclear with coal.

01: Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom

Options for Action

The panellists formulated a wide range of recommendations:

- *Delivering new projects on time and on budget*
  Many projects run over costs by 40-50%. The industry needs a new philosophy, "fit-for-purpose designs" and well-defined plans, especially in the North Sea, said Asfari. It is possible to learn from efficiencies in the United States.

- *Promoting strategic long-term thinking*
  "Energy policy should be like defence policy – cross-party and long-term," said Jafar, adding that experts, not politicians, should make the decisions.

- *Addressing government subsidies*
  According to the International Monetary Fund, half of the world's US$ 500 billion of energy subsidies are in the Middle East. This presents a major challenge.

- *Developing political leadership on emissions and regulations*
  "We have one duty: reducing our emissions, and we can do it," said de Margerie. But leaders have to decide on the energy mix in the context of a planet growing to 9 billion people. States need to take responsibility and frame regulations that will create a predictable environment for operators and investors. And, consumers will have to accept higher costs for cleaner energy.

– *Embracing shale in Europe*
Fracking technology is safe, clean and proven over many decades. European leaders should take hard decisions on this and embrace shale, according to Bulgheroni.

Moderated by
Daniel Yergin, Vice-Chairman, IHS, USA

Session Panellists
Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom
Marcos Bulgheroni, Executive Vice-Chairman and Board Member, Bridas Energy Corporation, Argentina
Kenneth A. Hersh, Founder and Chief Executive Officer, NGP Energy Capital Management, USA
Majid Jafar, Managing Director of the Board, Dana Gas, United Arab Emirates; Chair of the 2014 Governors Meeting for Oil & Gas Independents; Global Agenda Council on Youth Unemployment

01: Christophe de Margerie, Chairman and Chief Executive Officer, Total, France; Co-Chair of the World Economic Forum Annual Meeting 2014

Building Resilience to Natural Disasters

Congress Centre, Aspen 1 Room
Saturday 25 January, 10.45 – 11.45

Hurricanes, earthquakes, and other natural disasters are becoming an increasing threat and concern to the global economy. The devastation caused by extreme weather events, consistent with the increased risk of climate change, will continue to inflict heavy social and financial costs. How can natural disasters be better anticipated and managed?

The following perspectives were addressed in the session:

- Climate-related disasters
- Humanitarian crisis including response networks and organization
- Building a proper response system for future disasters
- How to prepare for and adapt to future natural disasters

This session was webcasted live and can be viewed at:
http://www.weforum.org/sessions/summary/building-resilience-natural-disasters-0

Moderated by
Judith Rodin, President, The Rockefeller Foundation, USA

Session Panellists
Baroness Valerie Amos, Undersecretary-General for Humanitarian Affairs; Emergency Relief Coordinator, United Nations, New York

Gregory L. Domingo, Secretary of Trade and Industry of the Philippines; Special Envoy of the President of the Philippines
Laurent Salvador Lamothe, Prime Minister of Haiti
Naheed Nenshi, Mayor of Calgary, Canada
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan

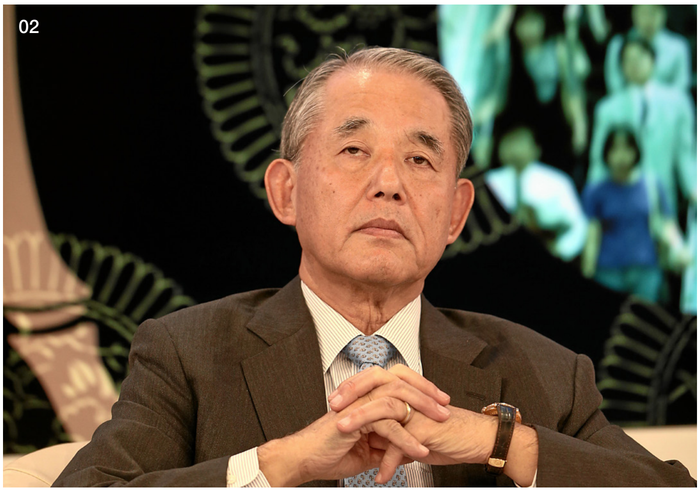
01: Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan
02: Judith Rodin, President, The Rockefeller Foundation, USA

The Reshaping of Japan: Global Consequences

Congress Centre, Sanada Room
Thursday 23 January, 11.00 – 12.00

From Abenomics to the Tokyo Olympics, Japan is back on the global stage. What are the global and regional implications?
- Reversing decades of deflation
- Embarking on structural reform
- Reinvigorating an innovation-driven economy
- Global strategy for further economic growth

This session was developed in partnership with NHK (Japan Broadcasting Corporation).



01: Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
02: Yasuchika Hasegawa, President and Chief Executive Officer, Takeda Pharmaceutical, Japan; Global Agenda Council on Japan

The Issue

For 15 years, Japan was mired in a stagnation that felt endless. But since Prime Minister Shinzo Abe assumed office in December 2012, the country has been on the rise. Besides assuming a more assertive global posture, and injecting confidence into his country, Abe's most important contribution has been his plan to improve the economy. Dubbed Abenomics, it consists of three "arrows": fiscal stimulus, more aggressive monetary easing and structural reforms. The first two arrows have already been deployed successfully – and observers have high hopes for the third. "There is great momentum," said Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan. "The key for us is not to break the good cycle."

While Japan's gross domestic product was and is growing slowly, it is at the same time faced with a declining workforce. "If you adjust for that, it's actually been at the top of the OECD," said Joseph E. Stiglitz, Professor, School of International and Public Affairs (SIPA), Columbia University, USA. "One has to recognize Japan is not the failure that many people have suggested."

Japan was the first country to realize that to solve problems after the financial crisis of 2008, "you're not going to be able to have a silver bullet", said Stiglitz. The three arrows of Abenomics reflect that. But the big question is, how does Japan increase productivity?

The Consequences

Yasuchika Hasegawa, President and Chief Executive Officer, Takeda Pharmaceutical, Japan, cited the address Abe delivered yesterday, in which he said he would act like a "drill bit", cutting through red tape and breaking down obstacles to growth. But while Japan seems to be generally making the right decisions, there are strategies that could misfire. In April, Japan plans to raise consumption tax and lower corporate income tax, "and pray that the good corporations will use the extra revenue to give wage increases", said Stiglitz. "I know that in the United States that almost certainly wouldn't happen," and it may not in Japan either, he said.

"In the 1950s, 60s and 70s, the reason Japan was growing so robustly was that companies like Toyota, Honda, Sony and Canon" made once-expensive products affordable and accessible to millions of consumers around the world, stated Clayton Christensen, Professor of Business Administration, Harvard Graduate School of Business Administration, USA. How can Japanese businesses produce innovations like those companies, instead of just increasing efficiency or improving current products, he wondered, adding, "Where has the entrepreneurship gone?"

Options for Action

Further engaging with the rest of the world will help Japan. "We are happy that Japan is doing well. It was sleeping for over 20 years. To see this revival of animal spirit in Japan is something we all welcome," said Kishore Mahbubani, Dean, Lee Kuan Yew School of Public Policy, National University of Singapore. But he also said Japan faces some unique existential challenges based on its isolation. Famously adverse to immigration, Japan will need to accept migrant workers as its labour force continues to shrink. And despite geopolitical tensions, Japan's trade

with China remains immense. Japan should look more to Association of Southeast Asian Nations, which together have 600 million people and are doing relatively well (except Thailand). "Now Japan needs to rebalance. And that rebalance requires a change in mindset," he said. Fujimori agreed. "I think we have to go global and change the corporate culture," he said. "Unless we break out of our comfort zone, I don't think Japan is going to change."

Hiroko Kuniya, Anchor and Presenter, Today's Close-Up, NHK (Japan Broadcasting Corporation), Japan; Global Agenda Council on Japan
Clayton Christensen, Professor of Business Administration, Harvard Graduate School of Business Administration, USA
Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
Yasuchika Hasegawa, President and Chief Executive Officer, Takeda Pharmaceutical, Japan; Global Agenda Council on Japan
Kishore Mahbubani, Dean, Lee Kuan Yew School of Public Policy, National University of Singapore; Global Agenda Council on China
Joseph E. Stiglitz, Professor, School of International and Public Affairs (SIPA), Columbia University, USA

PACI: Designing Corruption Out of the System – One Global Voice on Transparency and Anti-Corruption

Congress Centre, Seehorn Arena
Friday 24 January, 14.45 – 15.45

How can society design corruption out of public and private institutions?
– Concerted industry action
– Role of technology in enhancing transparency
– Overseeing investment strategies in frontier markets

The Issue

Across the globe, entrenched corruption saps value from companies and capacity from government budgets, and undermines democratic systems. According to one panellist, the challenge is that the people who break the rules and make the rules are often the same. One of the best ways of dealing with it is to be transparent. But how best can transparency be achieved?

The Consequences

Corruption has stark consequences. The reality of the 10-15% loss of development infrastructure that can come from corruption means that children will die because they can't access clean water or life-saving medicines, according to one panellist. Small bribery has big effects on people with small incomes. The minute that first bribe is paid, "you've got your arm in the meat grinder, and the body goes because you're already complicit."

Options for Action

The World Economic Forum's Partnering Against Corruption Initiative (PACI) Vanguard was highlighted as an opportunity to tackle corruption at a very high level. The company of one panellist adheres rigorously to local laws and, as such, would be dissuaded from doing business in a country with a high level of corruption. This adherence also extends to procurement.

Another panellist noted that the risk of getting caught for corruption is increasing and will continue to become more risky. The focus of CEOs has shifted from "my business, my business" to "our supply chains". Recent bribery charges against Foxconn were raised as evidence of the risks all the way upstream in the supply chains.

Mongolia was held up as an example of a country that is on the front lines of upholding the rule of law. It is winning the battle in some respects, but losing in others. Its efforts have meant that the country advanced 26 places in Transparency International's Corruption Perceptions Index for 2013.

Moderated by
Pranjal Sharma, Consulting Editor, Businessworld, India; Global Agenda Council on India

Session Panellists
Tsakhiagiin Elbegdorj, President of Mongolia
Huguette Labelle, Chair, Transparency International, Germany; Global Agenda Council on Responsible Mineral Resources Management
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Chair of the Governors Meeting for Infrastructure & Urban Development 2014; Chair of the PACI Governors Meeting 2014; Global Agenda Council on Anti-Corruption & Transparency
James C. Smith, President and Chief Executive Officer, Thomson Reuters, USA

01: David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA
02: Huguette Labelle, Chair, Transparency International, Germany; Global Agenda Council on Responsible Mineral Resources Management

The Arab World Context

Congress Centre, Pischa Room
Wednesday 22 January, 14.15 – 15.15

What challenges and transformations are shaping the leadership context in the Arab world?

– Putting transitions on a stable and inclusive track
– Shoring up employment for youth
– Fostering cross-regional collaboration

The Issue

The Arab world is at a crossroads. Many countries remain in the grip of conflict and upheaval. Others are working to create more inclusive institutional arrangements that can deliver economic progress and social cohesion. The key now is to learn lessons from recent experience so countries can create the conditions for equitable economic growth, political engagement, security and social harmony.

The Consequences

It is hard to create cohesive societies after decades of closed political systems and economic stagnation. The challenge in Iraq, for example, is twofold: to build consensus among its heterogeneous people about the society they want; and to ensure Iraqis begin to see themselves as citizens with shared interests and a common future. Ten years down the revolutionary road, the government is still struggling on both fronts.

Egypt's revolution is more recent, and the government is pushing ahead with an era of prosperity and stability, underpinned by an open political system in which individuals' rights are guaranteed and wealth is distributed fairly. This ambitious agenda, including the new constitution approved in mid-January by 98% of voters, will inevitably take time, yet people want quick progress.

Several panellists talked about the challenge of juggling calls for swift reform with the complicated task of building societies that are free and democratic. Time is a luxury in today's Arab world and the pressure for change is unremitting.

Some participants from the Gulf countries said ordinary people are more interested in economic opportunities and social services than the democratic process and human rights. Progress may be accelerated with some kind of regional economic plan to provide the economic foundations for a more secure and prosperous future.

Reform is clearly a learning process, but inclusive institutions are necessary building blocks of economic and social progress. This means engaging people in shaping their future. But is the Arab world able to meet this challenge? One panellist said this is a problem because, historically, the Arab world has not embraced power sharing. Elites must learn to be more embracing of diversity, and do more to bring the population along, by developing and communicating clear plans for the future. This will help develop a sense of shared destiny.

Options for Action

– Recognize that the outlook in the Arab world is not universally bleak; focus on seizing opportunities for positive change
– Learn lessons of reform systematically and share across the region
– Build on the consensus that inclusive institutions are a necessity
– Provide for equitable growth with returns for all members of society
– Push ahead with clear political, social and economic development plans backed up by sound communications

Moderated by
Christopher Dickey, Bureau Chief, Paris, and Middle East Editor, Daily Beast, USA

Session Panellists
Mohamed Alabbar, Chairman, Emaar Properties, United Arab Emirates
Rola A. Dashti, Minister of Planning and Development, and Minister of State for National Assembly Affairs of Kuwait (2012-2014)
Ahmed Galal, Minister of Finance of Egypt
Kamal Bin Ahmed Mohammed, Acting Chief Executive, Bahrain Economic Development Board
Rowsch N. Shaways, Deputy Prime Minister of Iraq

01: Mohamed Alabbar, Chairman, Emaar Properties, United Arab Emirates
02: Ahmed Galal, Minister of Finance of Egypt

Event Calendar 2014
Infrastructure & Urban Development Industries

World Economic Forum Meetings		Africa Infrastructure Roundtables	World Economic Forum on Latin America	World Economic Forum on Africa	EBRD Annual Summit and Business Forum	World Economic Forum on East Asia	New York Real Estate Roundtable	Strategic Infrastructure and Real Estate Roundtable	Annual Meeting of the New Champions 2014	World Economic Forum on Europe, MENA and Eurasia	New York Strategy Meeting	World Economic Forum on India	Summit on the Global Agenda 2014
		Mozambique, Tanzania, Nigeria	Panama City, Panama	Abuja, Nigeria	Warsaw, Poland	Manila, Philippines	New York, USA	Dubai, United Arab Emirate	Tianjin, People's Republic of China	Istanbul, Turkey	New York, USA	New Dehli, India	Dubai, United Arab Emirates
		March-April	01 - 03 April	07 - 09 May	14-16 May	21- 23 May	June	July	10 - 12 Sept	28 - 30 Sept	21-22 Oct	04-06 Nov	09- 11 Nov
		March-April	Aoril	May			June	July	September		October	November	
Infrastructure & Urban Development Industries	Strategic Infrastructure	●	●	●	●	●		●	●				●
	The Future of Urban Development								● Urban Development & Infrastructure Summit		●	●	
	Real Estate Investment & Development						●	●	●	●	●		●
Interaction with Mining & Metals Community			●	●					●				●
Interaction with Energy Community [1] (Focus Industry)			● (Power)	● (Oil & Gas)		● (Power)			● (Power)	● (Oil & Gas)	● (Oil & Gas)		
Interaction with Financial Services / Investors Communities [2]			●	●		●			●	●	●	●	
Water Initiative: 2030 Water Resources Group				●								●	●
Circular Economy			●			●			●		●	●	●
Admission Policy		Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Chairperson/ CEO/ Board Level	Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Chairperson/ CEO/ Board Level	Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Board Level/ Local Mgmt (no participation fee)	Council Members

(1) Additional Oilfield Services Sessions are in planning
(2) Invitations to FS/IV Sessions will be extended on a case by case basis

Governors of the Infrastructure & Urban Development Industries

Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland
Luis Castilla, President and Chief Executive Officer, Acciona Infraestructuras, Water & Services, Acciona SA, Spain
John M. Beck, Chairman and Chief Executive Officer, Aecon Group, Canada
Klaus Kleinfeld, Chairman and Chief Executive Officer, Alcoa Inc., USA
Samir Brikho, Chief Executive Officer, AMEC, United Kingdom
Gregory Hodkinson, Chairman-Elect, Arup Group, Italy
Roland Koch, Chairman of the Executive Board, Bilfinger SE, Germany
Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies, USA
Douglas Frye, Global President and Chief Executive Officer, Colliers International, USA
Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece
Mouhtaz El Sawaf, Chief Executive Officer, Construction Products Holding Company (CPC), Saudi Arabia
Wang Jianlin, Chairman, Dalian Wanda Group Co., People's Republic of China
Niels B. Christiansen, President and Chief Executive Officer, Danfoss A/S, Denmark
Mohamed Alabbar, Chairman, Emaar Properties, United Arab Emirates
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Chair of the 2014 Governors Meeting for the Infrastructure & Urban Development Industries
Kiran Kumar Grandhi, Chairman, Corporate, GMR Group, India
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India
Hiroaki Nakanishi, President, Hitachi, Japan
Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA
James Dimon, Chairman and Chief Executive Officer, JPMorgan Chase & Co., USA
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan
Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia
Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
Fabrizio Di Amato, Chairman, Maire Tecnimont, Italy
Teruo Asada, Chairman of the Board, Marubeni Corporation, Japan
Shingo Tsuji, President and Chief Executive Officer, Mori Building Co., Japan
Barry M. Gosin, Chief Executive Officer, Newmark Grubb Knight Frank, USA
Henry Ross Perot Jr, Chairman of the Board, The Perot Companies, USA
Ayman Asfari, Group Chief Executive, Petrofac Ltd, United Kingdom
Atul Punj, Chairman, Punj Lloyd Ltd, India
Kapil Wadhawan, Chairman, Rajesh Wadhawan Group, India
Judith Rodin, President, The Rockefeller Foundation, USA
Kim Jae-Youl, President, Samsung Engineering Co., Republic of Korea
Olof Faxander, President and Chief Executive Officer, Sandvik, Sweden
Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad, Malaysia
Paal Kibsgaard, Chief Executive Officer, Schlumberger Ltd, USA
Joe Kaeser, President and Chief Executive Officer , Siemens AG, Germany
Johan Karlström, President and Chief Executive Officer, Skanska AB, Sweden
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
Atsutoshi Nishida, Chairman of the Board, Toshiba Corporation, Japan
Geraud Darnis, President and Chief Executive Officer, UTC Building & Industrial Systems, USA
Bernard Duroc-Danner, Chairman, President and Chief Executive Officer, Weatherford International, Switzerland
Balkrishan Goenka, Chairman, Welspun Corp. Ltd, India
Uwe Krüger, Chief Executive Officer, WS Atkins, United Kingdom

Lists of Participants

Infrastructure & Urban Development Governors Session Real Estate Transformations

Governors
Geraud Darnis, President and Chief Executive Officer, UTC Building & Industrial Systems, USA
Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA
Douglas Frye, Global President and Chief Executive Officer, Colliers International, USA
Atsutoshi Nishida, Chairman of the Board, Toshiba Corporation, Japan
Henry Ross Perot Jr, Chairman of the Board, The Perot Companies, USA
Srinath Sridharan (Alternate to Kapil Wadhawan), Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India

Special Industry Guest
Ravi Raheja, Group President, K Raheja Corp, India

Experts
Jaime Caruana, General Manager, Bank for International Settlements (BIS), Basel
Gene Frieda, Global Strategist, Moore Europe Capital Management, United Kingdom
Klaas Knot, Governor of the Central Bank of the Netherlands
Robert J. Shiller, Sterling Professor of Economics, Yale University, USA
Huw van Steenis, Global Strategist, Morgan Stanley, USA
Theresa Whitmarsh, Executive Director, Washington State Investment Board, USA

Public Figure
Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa

Infrastructure & Urban Development Governors Session Engineering and Construction Transformations

Governors
Teruo Asada, Chairman of the Board, Marubeni Corporation, Japan
John M. Beck, Chairman and Chief Executive Officer, Aecon Group, Canada
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
Niels B. Christiansen, President and Chief Executive Officer, Danfoss, Denmark
Fabrizio Di Amato, Chairman, Maire Tecnimont, Italy
Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India
Jacqueline Hinman, Chief Executive Officer, CH2M HILL Companies, USA
Gregory Hodkinson, Chairman-Elect, Arup Group, Italy
Olivier Jarrault (Alternate to Klaus Kleinfeld), Executive Vice-President, Alcoa, and Group President, Engineered Products and Solutions, Alcoa, USA
Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece
Uwe Krüger, Chief Executive Officer, WS Atkins, United Kingdom
Lee A. McIntire, Executive Chairman, CH2M HILL Companies, USA
James Mackey (Alternate to Kim Jae-Youl), Senior Executive Vice-President and Head, Power Business Division, Samsung Engineering, Republic of Korea
Hiroaki Nakanishi, President, Hitachi, Japan
G.M. Rao, Group Chairman, GMR Group, India
Mouhtaz El Sawaf, Chief Executive Officer, Construction Products Holding Company (CPC), Saudi Arabia
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA
Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad, Malaysia
Ulrich Spiesshofer, Chief Executive Officer, ABB, Switzerland
Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan

Expert
Enrique García Rodríguez, President and Chief Executive Officer, CAF – Development Bank of Latin America, Venezuela

Public Figures
Alpha Condé, President of Guinea
Saleh Muhammed Al Mutlaq, Deputy Prime Minister of Iraq

Governors Session on New Models in Oilfield Services

From Business
Ayman Asfari, Group Chief Executive, Petrofac, United Kingdom
Samir Brikho, Chief Executive Officer, Amec, United Kingdom
Amjad Bseisu, Chief Executive Officer, EnQuest, United Kingdom
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
Jose Manuel Carrera, Chief Executive Officer, Comercio Internacional, Mexico
Fabrizio Di Amato, Chairman, Maire Tecnimont, Italy
Olof Faxander, President and Chief Executive Officer, Sandvik, Sweden
Nicholas Gee, Executive Vice-President, Strategy and Development, Weatherford International, Switzerland

Olivier Jarrault, Executive Vice-President, Alcoa, and Group President, Engineered Products and Solutions, Alcoa, USA
Emilio Lozoya Austin, Chief Executive Officer, Pemex (Petróleos Mexicanos), Mexico; Young Global Leader
James Mackey, Senior Executive Vice-President and Head, Power Business Division, Samsung Engineering, Republic of Korea
Boyd Merrett, Chief Executive Officer, Leighton Offshore, Malaysia
Amin H. Nasser, Senior Vice-President, Upstream Operations, Saudi Aramco, Saudi Arabia
Simon Naylor, Group President, Americas, Amec, United Kingdom
Tomas Norahl, Executive Vice-President, Sandvik, Sweden
Jorma Ollila, Chairman, Royal Dutch Shell, Netherlands
Peter Oosterveer, Group President, Energy and Chemicals, Fluor Daniel, Netherlands
Jean-Francois Poupeau, Executive Vice-President, Corporate Development and Communications, Schlumberger, USA
Giuseppe Recchi, Chairman, Eni, Italy
David T. Seaton, Chairman and Chief Executive Officer, Fluor Corporation, USA; Chair of the Governors Meeting for Infrastructure & Urban Development 2014; Chair of the PACI Governors Meeting 2014; Global Agenda Council on Anti-Corruption & Transparency
Tan Sri Dato Seri Shamsuddin Shahril, President and Group Chief Executive Officer, SapuraKencana Petroleum Berhad, Malaysia
Jubril Adewale Tinubu, Group Chief Executive, Oando, Nigeria; Young Global Leader alumnus
Torbjörn Törnqvist, Chief Executive Officer, Gunvor Group, Switzerland

Public Figure
Alison Redford, Premier of Alberta, Canada

Industry Partners Session on Infrastructure Investment and Financing

From Business
Luis Castilla, President and Chief Executive Officer, Acciona Infraestructuras, Water & Services, Acciona SA, Spain
Tejpreet Singh Chopra, President and Chief Executive Officer, Bharat Light and Power, India; Young Global Leader; Global Agenda Council on New Energy Architecture
Allan Cook, Chairman of the Board of Directors, WS Atkins, United Kingdom
Philip Dilley, Chairman, Arup Group, United Kingdom
Kirill Dmitriev, Chief Executive Officer, Russian Direct Investment Fund, Russian Federation; Young Global Leader; Global Agenda Council on Russia
Stephen Dobbs, Senior Group President, Fluor Corporation, USA; Global Agenda Council on Infrastructure
Colin Dyer, President and Chief Executive Officer, Jones Lang LaSalle, USA
Gao Jifan, Chairman and Chief Executive Officer, Trina Solar, People's Republic of China
Kiran Kumar Grandhi, Corporate Chairman, GMR Group, India
Heinz Haller, Chief Executive Officer, Dow Europe and Chief Commercial Officer, The Dow Chemical Company, Switzerland
Gregory Hodkinson, Chairman-Elect, Arup Group, Italy
Sunil Kanoria, Vice-Chairman, SREI Infrastructure Finance, India
Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece; Global Agenda Council on Infrastructure
Uwe Krüger, Chief Executive Officer, WS Atkins, United Kingdom
James Mackey, Senior Executive Vice-President and Head, Power Business Division, Samsung Engineering, Republic of Korea
Ron Mock, Chief Executive Officer Elect, Ontario Teachers' Pension Plan, Canada
Eric Parrado, Professor, University Adolfo Ibáñez, Chile; Young Global Leader; Global Agenda Council on Long-term Investing
Mahendra Siregar, Chairman, Indonesia Investment Coordinating Board (BKPM), Indonesia
Dylan E. Taylor, Chief Executive Officer, Americas, Colliers International, USA; Young Global Leader
Peter Terium, Chief Executive Officer, RWE, Germany; Energy Utilities and Technology Community Leader 2013
Danny Truell, Chief Investment Officer, Wellcome Trust, United Kingdom; Global Agenda Council on Long-term Investing
Hamish Tyrwhitt, Chief Executive Officer, Leighton Holdings, Australia; Global Agenda Council on Infrastructure
Andrew S. Weinberg, Partner, Lindsay Goldberg, USA
Theresa Whitmarsh, Executive Director, Washington State Investment Board, USA
Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan; Global Agenda Council on Infrastructure

Public Figures
Alpha Condé, President of Guinea
Claver Gatete, Minister of Finance and Economic Planning of Rwanda
Modest Mero, Ambassador and Permanent Representative of Tanzania to the United Nations, Geneva
Harrison Mwakyembe, Minister of Transport of Tanzania
Macky Sall, President of Senegal
Kerfalla Yansané, Minister of Mines of Guinea

From International Organizations and Development Banks
Bertrand Badre, Managing Director and Chief Financial Officer, World Bank, Washington DC
Patrick Khulekani Dlamini, Chief Executive Officer and Managing Director, Development Bank of Southern Africa, South Africa
Thomas Maier, Managing Director, Infrastructure, European Bank for Reconstruction and Development (EBRD), London; Global Agenda Council on Infrastructure
Gavin E. R. Wilson, Chief Executive Officer, IFC Asset Management Company, USA; Global Agenda Council on New Growth Models

Project Adviser
Philipp Gerbert, Senior Partner and Managing Director, The Boston Consulting Group, Germany

Industry Partners Session on the Future of Urban Development: Mayors' Guide to New Models for City Problem-solving

Industry Partners
Bruno Berthon, Global Managing Director, Accenture, France
Patrick Brothers, Chief Development Officer, Leighton Holdings, Australia
Ton Büchner, Chief Executive Officer and Chairman of the Board of Management, Akzo Nobel, Netherlands
Niels B. Christiansen, President and Chief Executive Officer, Danfoss, Denmark
Geraud Darnis, President and Chief Executive Officer, UTC Building & Industrial Systems, USA
Philip Dilley, Chairman, Arup Group, United Kingdom
Daniel Doctoroff, Chief Executive Officer, Bloomberg, USA
Yoshiaki Fujimori, President and Chief Executive Officer, LIXIL Group Corporation, Japan
Pawan Goenka, Executive Director and President, Automotive and Farm Equipment Sectors, Mahindra & Mahindra, India
Barry M. Gosin, Chief Executive Officer, Newmark Grubb Knight Frank, USA
Matthew Grob, Executive Vice-President and Chief Technology Officer, Qualcomm, USA
Ajit Gulabchand, Chairman and Managing Director, Hindustan Construction Company, India
Niklas Gustavsson, Executive Vice-President, Corporate Public and Environmental Affairs, AB Volvo, Sweden
Gregory Hodkinson, Chairman-Elect, Arup Group, Italy
Ronald de Jong, Executive Vice-President, Chief Market Leader and Member of the Executive Committee, Royal Philips, Netherlands
Johan Karlström, President and Chief Executive Officer, Skanska AB, Sweden
Patrick Khulekani Dlamini, Chief Executive Officer and Managing Director, Development Bank of Southern Africa, South Africa
Chris Luebkeman, Director, Global Foresight and Innovation, Arup Group, USA
Katrin Luger, Head, Governance and Strategy, Bombardier Transportation, Germany
John M. Mandyck, Chief Sustainability Officer, UTC Building & Industrial Systems, USA
Kim Metcalf-Kupres, Vice-President and Chief Marketing Officer, Johnson Controls, USA
Hiroaki Nakanishi, President, Hitachi, Japan
Raphael Schoentgen, President, GDF SUEZ China, People's Republic of China
Srinath Sridharan, Senior Vice-President and Head, Strategic Alliances, Rajesh Wadhawan Group, India
Shoji Takenaka, Global Vice-President, Smart Community Division, Toshiba Corporation, Japan
Dylan E. Taylor, Chief Executive Officer, Americas, Colliers International, USA

Industry Guests
Tim Brown, Chief Executive Officer, IDEO, USA
Shyam Sankar, President, Palantir Technologies, USA
Conrad Van Oostrom, Chief Executive Officer, OVG Real Estate, Netherlands

Public Figures
Ana Botella Serrano, Mayor of Madrid, Spain
Prithviraj Chavan, Chief Minister of Maharashtra, India
Boris Johnson, Mayor of London, United Kingdom
Gerard Lyons, Chief Executive Adviser, City of London, United Kingdom
Mauricio Macri, Mayor of Buenos Aires, Argentina
Trevor Manuel, Minister of the National Planning Commission (NPC) of South Africa
Bala Abdulkadir Mohammed, Minister of the Federal Capital Territory of Nigeria
Kamal Nath, Minister of Urban Development and Minister of Parliamentary Affairs of India
Naheed Nenshi, Mayor of Calgary, Canada
Mpho Parks Tau, Executive Mayor of Johannesburg, South Africa
Qu Xiaofei, Vice-Mayor of Dalian, People's Republic of China
Kasim Reed, Mayor of Atlanta, USA
Xavier Trias i Vidal de Llobatera, Mayor of Barcelona, Spain

Experts
Chan Heng-Chee, Chairman, Lee Kuan Yew Centre for Innovative Cities, Singapore University of Technology and Design (SUTD); Ambassador-at-Large, Ministry of Foreign Affairs, Singapore
Li Tie, Director-General, China Center for Urban Development, People's Republic of China
Jonathan Reckford, Chief Executive Officer, Habitat for Humanity, USA
Sue Riddlestone, Co-Founder and Chief Executive Officer, BioRegional Development Group, United Kingdom

Industry Partners Session on Mining and Infrastructure Collaboration Imperative

Industry Partners
Rafael Mateo Alcalá, Chief Executive Officer, Acciona Energia, Spain
Neil Alexander Bruce, President, Resources, Environment and Water, SNC-Lavalin Group, United Kingdom
Robert G. Card, President and Chief Executive Officer, SNC-Lavalin Group, Canada
Stephen Dobbs, Senior Group President, Fluor Corporation, USA; Global Agenda Council on Infrastructure
Ian Edwards, Managing Director, Leighton Asia, Hong Kong SAR
Gary J. Goldberg, President and Chief Executive Officer, Newmont Mining Corporation, USA
Diego Hernandez, Chief Executive Officer, Antofagasta Minerals, Chile
Idriss Talal Khalid, Chief Executive Officer, Bahra Advanced Cable Manufacture, Saudi Arabia
Shiv V. Khemka, Chief Executive Officer and Vice-Chairman, SUN Group, India
Samer S. Khoury, President, Engineering and Construction, Consolidated Contractors Company (CCC), Greece
Madhu Koneru, Group Executive Director, Trimex Group, United Arab Emirates
Logan Kruger, President and Chief Executive Officer, SUN Gold, India

Andrónico Luksic, Executive Director, Antofagasta Minerals, Chile
Lee A. McIntire, Executive Chairman, CH2M HILL Companies, USA
James Mackey, Senior Executive Vice-President and Head, Power Business Division, Samsung Engineering, Republic of Korea
Simon Naylor, Group President, Americas, AMEC, United Kingdom
Alexey Pertin, Chief Executive Officer, PJSC Smart-Holding, Ukraine
Mouhtaz El Sawaf, Chief Executive Officer, Construction Products Holding Company (CPC), Saudi Arabia
Michael Peter Schmidt, Chief Executive Officer, African Rainbow Minerals (ARM), South Africa
Akira Shimizu, Vice-President and Executive Officer, Hitachi, Japan
Marcia M. Smith, Senior Vice-President, Sustainability and External Affairs, Teck Resources, Canada

Industry Guests
R. Anthony Hodge, President, International Council on Mining and Metals (ICMM), United Kingdom
Christopher Logan, Co-Founder and Chief Executive Officer, Silk Road Mining and Development, Canada
Vinod Mittal, Chairman, Ispat Corp, India
Doris Tshepe, Chair of the Board Risk Committee, Transnet SOC, South Africa

Public Figures
Saikhanbileg Chimed, Minister of the Cabinet Office of Mongolia
Alpha Condé, President of Guinea
Matthew Samura Wilson Kamara, Minister of Foreign Affairs and International Cooperation of Sierra Leone
Felipe Larraín Bascuñán, Minister of Finance of Chile
Macky Sall, President of Senegal

African Infrastructure

From Business
Patrick Khulekani Dlamini, Chief Executive Officer and Managing Director, Development Bank of Southern Africa, South Africa
Monhla Wilma Hlahla, Chairman of the Board, Industrial Development Corporation of South Africa
Patrice T. Motsepe, Founder and Executive Chairman, African Rainbow Minerals (ARM), South Africa
John Peace, Chairman, Standard Chartered, United Kingdom
Enrique K. Razon Jr, Chairman of the Board and President, International Container Terminal Services (ICTSI), Philippines
John Rice, Vice-Chairman, GE, Hong Kong SAR
Doris Tshepe, Chair of the Board Risk Committee, Transnet SOC, South Africa
Zola Tsotsi, Chairman, Eskom Holdings SOC, South Africa

Public Figures
Esperança Laurinda Francisco Bias, Minister of Mineral Resources of Mozambique
Pravin Gordhan, Minister of Finance of South Africa
Maria Kiwanuka, Minister of Finance and Economic Planning of Uganda
Bala Abdulkadir Mohammed, Minister of the Federal Capital Territory of Nigeria
Harrison Mwakyembe, Minister of Transport of Tanzania
Macky Sall, President of Senegal
Kerfalla Yansané, Minister of Mines of Guinea

Experts
Gordon Brown, Chair, World Economic Forum Global Strategic Infrastructure Initiative; United Nations Special Envoy for Global Education; Prime Minister of the United Kingdom (2007-2010); Global Agenda Council on Infrastructure
Tenbite Ermias, Partner and Managing Director; Head, Sub-Saharan Africa, The Boston Consulting Group, South Africa
Mthuli Ncube, Chief Economist and Vice-President, African Development Bank (AfDB), Tunis

Contact Information

The Infrastructure & Urban Development Industries aim to serve as a forward thinking, valuable and internationally recognized partner for all stakeholders involved in the sector, while shaping the agenda to create unparalleled opportunities to convene leaders, raise global awareness, conceive frameworks and prepare actionable recommendations in the context of improving the state of the world.

Pedro Rodrigues de Almeida
Director, Head of Infrastructure & Urban Development Industries
World Economic Forum
Tel.: +41 (0)22 869 3613
E-mail: pedro.rodriguesdealmeida@weforum.org

Hanseul Kim
Associate Director, Head of Engineering & Construction Industry
Infrastructure & Urban Development Industries
World Economic Forum
Tel.: +41 (0)22 869 3655
E-mail: hanseul.kim@weforum.org

Michael Max Bühler
Associate Director, Head of Real Estate Industry
Infrastructure & Urban Development Industries
World Economic Forum
Tel.: +41 (0)22 869 1327
E-mail: michael.buehler@weforum.org

Robin Ried
Associate Director, Head of Urban Development
World Economic Forum USA
Tel.: +1 212 703 2363
E-mail: robin.ried@weforum.org

Marie Lam Frendo
Associate Director, Head of Infrastructure Initiatives
World Economic Forum
Tel.: +41 (0)22 869 3693
E-mail: marie.lamfrendo@weforum.org

Guido Battaglia
Senior Manager, Africa Infrastructure Initiative
World Economic Forum
Tel.: +41 (0)22 869 1368
E-mail: guido.battaglia@weforum.org

Christoph Rothballer
Project Manager, Strategic Infrastructure Initiative
World Economic Forum
Tel.: +41 (0)22 869 1206
E-mail: christoph.rothballer@weforum.org

Fabian Barthel
Project Manager, Africa Infrastructure Initiative
World Economic Forum
Tel.: +41 (0)22 869 1346
E-mail: fabian.barthel@weforum.org

Hao Xu
Project Manager, Future of Urban Development Initiative
World Economic Forum
E-mail: hao.xu@weforum.org

Carla Sequeira
Senior Team Coordinator, Infrastructure & Urban Development Industries
World Economic Forum
Tel.: +41 (0)22 869 1258
E-mail: carla.sequeira@weforum.org

Katerina Korcakova
Team Coordinator, Basic & Infrastructure Industries
World Economic Forum
Tel.: +41 (0)22 869 3596
E-mail: katerina.korcakova@weforum.org

Muriel Skaf
Intern, Future of Urban Development Initiative
World Economic Forum, USA
Tel.: +1 646 492 3904
E-mail: muriel.skaf@weforum.org

Alex Wong
Senior Director
Head of the Centre for Global Industries
and Head of Basic & Infrastructure Industries
World Economic Forum
Tel.:+41 (0)22 869 1460
E-mail: alex.wong@weforum.org

Endnotes

1. As of February 2014. If interested, please contact the team at infraurban@weforum.org.
2. Jean-Francois Poupeau participated in the Governors session as the alternate to the Chief Executive Officer.
3. Srinath Sridharan participated in the Governors session as the alternate to the Chairman.
4. In the context of a speculative bubble, a social epidemic of enthusiasm is able to contagiously transform market observers into market participants.
5. The spread between real asset investment returns and 10-year government bond yields is commonly expected to be around 250 basis points (bps). For instance, within a speculative bubble environment, this spread might get compressed down to 100 bps.
6. Indicated by increasing loan-to-value (LTV) ratios.
7. This was because a change in policy proposed by the central banks would have resulted in decreasing tax revenues, increasing unemployment rates and decreasing credit supply.
8. The regulatory framework in place prior to the global financial crisis might have been deficient because it was largely "microprudential" in nature. A "microprudential" approach is one in which regulation is aimed at preventing the costly failure of individual financial institutions. By contrast, a "macroprudential" approach recognizes the importance of general equilibrium effects, and seeks to safeguard the financial system as a whole. In the aftermath of the crisis, both academics and policymakers seem to agree that financial regulation needs to move in a "macroprudential" direction (Hanson, S.G. et al. "A Macroprudential Approach to Financial Regulation", Working Paper No. 10-29, University of Chicago Booth School of Business, [2010]).
9. Including unconventional monetary policy used by central banks, such as quantitative easing.
10. In the 1990s, property prices in the Netherlands increased between 15% and 20% per year, totalling aggregate house price increases of up to 480%.
11. Martínez Pagés, J., and Ángel Maza, L. "Analysis of House Prices in Spain", Working Paper No. 0307, Banco de España, 2003.
12. In India, about 50% of total real asset investments are estimated to be sourced from illicit funds. Due to the lack of transparency, reliable property price indices are difficult to create. As a result, government property valuations can be a tenth of real asset market prices.

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World Economic Forum
91–93 route de la Capite
CH-1223 Cologny/Geneva
Switzerland

Tel.: +41 (0) 22 869 1212
Fax: +41 (0) 22 786 2744

contact@weforum.org
www.weforum.org