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WHY DATA, AND WHY NOW?

The Addis Ababa Action Agenda—a product of the 2015 Third International Conference on Financing for Development—had an immediate impact on the way multilateral development banks (MDBs) think about infrastructure. One of its primary goals was “Establishing a new forum to bridge the infrastructure gap.” To make that happen, participants concluded that “Investing in sustainable and resilient infrastructure, including transport, energy, water and sanitation for all, is a pre-requisite for achieving many of our goals.”

The first Global Infrastructure Forum, convened this month in Washington, DC by MDBs and other development partners, will focus on the ways in which MDBs can further strengthen their collaboration, leveraging resources to drive forward investment in sustainable and resilient infrastructure.

To be able to make the right investment decisions, MDBs must have the right information—and that’s where data comes in. The right data must inform decisions about how and where to invest in infrastructure that will last. The current issue of Handshake explores the various ways that data can result in better decisions: from national or even regional infrastructure investment planning by allowing us to define the problem, or “gap,” more accurately; to learning from the growing experiences of national public-private partnership (PPP) programs by benchmarking properly and collecting the right information along the way; to improving contract management through the application of innovative real-time data collection and contract adjustment.

Infrastructure experts from MDBs and development partners have contributed articles here that address data’s intersection with PPPs. As we all strive to link progress to policy, we look for ways to help governments navigate toward an infrastructure plan that maps to the realities they face. Data has the potential to guide us toward smarter investments in infrastructure, and the articles and columns in this issue begin to chart the course.

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TAMING THE TERRA INCOGNITA OF PPPs

THE CASE FOR DATA AS AN EXPLORATION TOOL

Fernanda Ruiz Nuñez, World Bank Group

The PPP territory spans the globe, and the debate over its effectiveness as a financing tool to achieve development goals reaches equally far and wide.

Most recently, this debate was revived by the discussion about the post-2015 development agenda. One of the targets of the United Nation’s Sustainable Development Goals is to “Encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships.” If PPPs are to play an important role in the development agenda, the scale of PPP investments has to increase significantly. The scale-up will be successful only if projects are procured, managed, and regulated well.

As our understanding of the need—and our sense of urgency—grows, one thing continues to be troubling. Results so far have been based mainly on anecdotal evidence and case studies where attribution remains dubious. Typically, findings cannot be generalized as they depend on the particular characteristics of the specific projects.

We can do better. As economists, development professionals, finance experts, and explorers of new and creative solutions to solve the problem of poverty, we must do better. And we will—with better data.

HOW DID WE GET HERE?

Lack of data has constrained the empirical literature on PPPs, in turn constraining our

WHAT WE TALK ABOUT WHEN WE TALK ABOUT DATA

It’s always useful to clarify a term like “data,” which may have different meanings depending on context. People talk about data in referring to a variety of approaches to understanding numbers, but most people use it as a synonym for “information” in the most general sense.

For the purpose of this article, data is defined as pieces of information translated into a particular format (usually numbers or words) that can be easily processed and analyzed. They are typically the results of measurements: for example, statistics on the economy (GDP, population, or income per capita). When data are processed, analyzed, and interpreted, they become information and knowledge that can guide decision-making. For example, data on income per capita does not mean anything on its own, but when compared over time and/or across countries, this can be useful information to help professionals understand how an economy is developing.

— Fernanda Ruiz Nuñez
ability to explore PPPs’ potential to transform markets. After all, what do we really know about the economic impact of PPPs? So far, the literature on this field focuses on a narrow set of papers examining the results of PPPs in developing countries. These studies share a well-defined and credible identification strategy. The evidence shows that there is a positive and significant impact of private sector participation in access, quality of services, labor productivity, and reduction in technical losses. The magnitude of the impact varies by sector and size of the project and with the context, especially as it relates to the institutional and regulatory environment.

Lack of data blocks other important conclusions that could help set a PPP agenda tied to reduction of poverty. Of the studies that do exist, the analysis shows that an increase in access to public services benefits the poorest segments of the population—groups that were previously largely excluded from access and required to pay for more expensive alternatives (for example, water and energy). The literature also shows that the poorest have significantly benefited from lower child mortality rates associated with increased access to and better water services from utilities managed by the private sector.

If such compelling deductions are to be drawn from the few studies that have been conducted, we can only surmise that other research conducted in an equally rigorous manner will push our understanding even further, and in turn improve PPPs’ effectiveness.

As economists, development professionals, finance experts, and explorers of new and creative solutions to solve the problem of poverty, we must do better. And we will—with better data.

A CALL FOR CHANGE

Has this positive impact translated into lower prices, more jobs, and less poverty? That’s the most important question of all—and here the availability of data becomes extremely scarce and the evidence very thin. Efficiency gains do not always translate into reduction in tariffs due to initial prices below cost recovery (with subsidies not always well targeted to the poor), or with the private sector retaining part of the profit. Many scholars argue that gains in labor productivity have been linked to a reduction in staff. Most of the literature confirms that this has been the case for short-term direct employment; however, little is known about the medium- and long-term impact on direct and indirect employment that could have counterbalanced the initial negative impact.

The empirical evidence also indicates that the distributional impact varied, but the effects were largely positive.

INSIDE INFRASTRUCTURE

NEXT GEN PPPs: TACKLING ASSET MANAGEMENT AND BIG DATA LIKE THE NFL

John Kjorstad

Black Monday” in the National Football League (NFL) is the day after the final regular season games are played across the United States in early January. It is a day of reckoning for the coaches and general managers of 20 of the NFL’s 32 teams. Performance is assessed and failure to meet lofty expectations often results in a carousel of changes for the teams that did not make the playoffs.

Few industries are as obsessed with performance as professional sports—and with annual revenues in excess of $10 billion, the NFL is one of the most demanding. While simple wins and losses over a 16-game regular season remain the key indicators of success, the league’s ultra-competitive nature has led to the development of “Next Gen Stats”—advanced statistical measures driven by Big Data and new technologies—to create even more information to help organizations make smarter decisions.

Like an infrastructure asset owner or authority engaged in a public-private partner-
simply recording outcomes, Zebra is measuring the actions that lead to outcomes—allowing managers to intervene and theoretically change course before an outcome has been determined.

**CALLS FOR CONSISTENT DATA**

PPP contracts for infrastructure projects are also driven by recorded outcomes. Here is an example of how they typically work: Hundreds of new and refurbished school projects in the United Kingdom were procured through the Private Finance Initiative (PFI) before a change in government steered the Department for Education away from PFI in 2010. As a PPP, private companies contracted with Local Education Authorities (LEAs) to design, build, finance, and maintain schools over a concession period (typically 25 years) in return for an annual payment.

The LEAs are responsible for managing and enforcing active PFI contracts, but rely heavily on manual reports and data provided by the private operators as well as spot monitoring and feedback from the individual schools. Each month, the PFI contractor submits a performance report together with an invoice. The exact value of the payment is subject to the concession’s performance within the parameters outlined in the contract.

Partnerships for Schools, the UK government’s delivery agent for its investment program for Education away from PFI in 2010, demonstrated that technology and improved asset management can add digital value to the partnership model. Tube Lines worked with IBM Maximo to develop a consistent approach and real-time access to asset information for engineers and contractors to schedule maintenance as they upgraded infrastructure on the Jubilee, Northern, and Piccadilly lines.

Another UK example is street lighting, where some authorities had limited or no data on the condition of their assets. Part of the procurement process for these PPPs included taking stock of tens of thousands of lighting units and capturing better data for better asset management. Reacting to this need allowed potential sponsors to differentiate themselves in the bidding process by demonstrating the added value of creating and managing data where previously none existed.

While many asset managers and owners have long recognized the need to capture data and more accurately measure contracted performance to improve service delivery, there are few solid examples in a conservative, risk-obsessed PPP market where innovative technology and data and analytics have been embedded in the contract structure and used to proactively influence decision making in real time to avoid undesired outcomes. This requires embedding technology, data collection, monitoring, and asset management principles into key contract schedules and project agreements while also layering it with a degree of flexibility.

**ASSET MANAGEMENT IS KEY**

This is not simply about better data, but better asset management. A large part of the overall value in PPP contracts lies in facilities management, operations, and post-construction maintenance. Despite the financial failure of the Tube Lines PPP with the London Underground in 2002, the contract positively demonstrated that technology and improved asset management can add digital value to the partnership model. Tube Lines worked with IBM Maximo to develop a consistent approach and real-time access to asset information for engineers and contractors to schedule maintenance as they upgraded infrastructure on the Jubilee, Northern, and Piccadilly lines.

The next generation of data for PPPs needs to be more automated and “digital.” Watchdogs are simply not satisfied with current reporting. Amyas Morse, head of the UK’s National Audit Office (NAO), issued a familiar call for more transparency on UK infrastructure at a briefing for the Committee of Public Accounts in early January 2016, noting that it remains difficult to tell whether performance is improving due to a lack of reliable and consistent measures of project success. Although the context of his remarks on this occasion focused on the lack of progress needed to improve the success rate of project delivery, the call for more consistent, better data is one we’ve heard time and time again from the NAO as it attempts to assess value-for-money where public resources are concerned.

**REAL-TIME DATA IS HERE**

A 25-year contract is a long one, and technology is evolving at a rapid pace. We now live in a digital world fueled by real-time data. Infrastructure must keep pace with the people who use it, and the data collected needs to be applied to ensure an improving service.

To modernize its revenue collection system and accommodate new services (like Apple Pay), London Underground exercised an early termination option in 2010 on a ticketing services PFI contract it signed in 1998. Subsequently, it agreed to a series of short-term contracts with the original consortium to address technology improvements. Although the original contract has been voided, the partnership between public authority and private operator continues to thrive.

In the NFL (as in the game of chess), the ability to adjust your strategy and react to your opponent’s is the key to winning. The goals for infrastructure might be different—driving down costs while simultaneously improving services—but the underlying strategic principles for achieving success are the same. PPP contracts need to progress from key performance indicators (KPIs) about data collection to KPIs anchored in management information driven by real-time data—essentially, better asset management. By making technology and data one of the fundamental pillars of a proposed PPP, authorities will encourage potential bidders to partner with firms like Zebra Technologies and put forward the best solutions.

After all, Zebra’s roots were actually in infrastructure before they spread into sport. Prior to digitizing the action that leads to touchdowns, they digitized the interactions that underpin infrastructure—scanning train and plane tickets, tracking parcels and shipping containers, performing inventory of warehouse and retail stocks, and assisting hospitals with patients and medical supplies. Perhaps one day, the same technology that tracks NFL players in the stadium on Sunday will be used on the construction site on Monday, employing real-time data. The opportunities for the application of technology and more dynamic data to infrastructure and PPPs are endless. It simply requires the foresight to ask for them.

"The opportunities for the application of technology and more dynamic data to infrastructure and PPPs are endless.”
Do you think that Big Data can make a difference for infrastructure, as it has in other fields?

I’m incredibly hopeful because infrastructure is a domain in which we have ridiculously little information in general. I mean, if you compare infrastructure with public health, or poverty, or education, we’re the laggards.

Marianne Fay brings her background in infrastructure and climate change issues to her role as Chief Economist for the World Bank’s Sustainable Development Group, focusing on the future of infrastructure. Here, she talks to Handshake about what the world can expect as infrastructure projects begin to see the impact of Big Data.
The combination of geospatial referencing and crowdsourcing will be helpful to get us into a completely different world. They are also looking at how this can be used to develop algorithms that can read satellite imagery and produce data about rural electrification, urban mobility, and similar things. But we’re at the beginning, we’re not there yet. I am convinced that within five years we’ll have the ability to monitor the quality, location, and availability of our infrastructure in a way we’ve never been able to, and this could really change our ability to make the sectors more efficient.

The second problem is that a lot of the data that we are interested in is geospatial. Until recently, from a technology point of view, it was very expensive to geospatially reference material. If we can move from the current system to remote sensing and satellite design in order to do this in real time with regular monitoring, we’re better positioned. That’s where Big Data becomes incredibly helpful.

Some of our colleagues have been innovative in promoting the use of crowdsourcing.

Q Why is there so little data?
A There are a few reasons. Even though trillions of dollars are spent every year on infrastructure, there isn’t one global agency in charge of infrastructure. The World Health Organization, for example, has a mandate to collect health data; UNESCO has a mandate to collect education data. That’s their job. No agency that is truly global has a mandate to collect information on infrastructure. That’s been part of our challenge.

Q Is there an explicit link between Big Data and efficiency?
A Yes. We have moved from a message that we need more money in infrastructure to the idea that we need to spend better. We don’t have firm numbers, but various estimates, some of which I’m responsible for, suggest that infrastructure spending needs in developing countries could be around $1 to $2 trillion. At the height of the financial crisis when we were disbursing like mad, the multilateral development banks were distributing $90 billion per year on infrastructure. For PPPs, it plateaued around $150 billion a year, of which half is only truly private. We’re so far off from what’s needed that there’s no doubt that the public sector will have to continue financing a lot of this, and that the flows remain way too low. So there’s no choice but to spend much more efficiently.

Q What roles does crowdsourcing play in data collection?
A This is about the right data, and the intelligent use of that data. One of the challenges we face is that some governments and agencies are very uncomfortable sharing information. Some governments consider detailed analysis of their transportation networks, for example, to be very sensitive information. So we need to move away from that approach and focus instead on crowdsourcing, where there’s Big Data on quality of service, it’s all open, and people can develop the right applications for it.

Q What’s standing in the way of progress, or complicating it?
A There’s a general feeling that after the privatization of the 1990s, a lot of countries have lost their planning capacity—particularly their intersectoral planning capacity, but also within the sector. Unfortunately, this is at a time where you have budget crunches almost everywhere, alongside a burgeoning middle class in developing countries with completely different expectations for quality and service than they did 15 to 20 years ago. This group also has access to consumer credit, which has massively changed demand for energy and transport. And on top of it you have the impact of climate change. So it’s become very challenging. Even high income countries, the UK for example, are bemoaning the loss of their planning capacity.

Q What are some questions you ask yourself about this, and encourage your staff to ask?
A We’re working hard to revisit infrastructure needs and come up with estimates based on careful modeling. We ask several important questions: What do we want, how can we achieve it, how can we reduce the cost, and how can we make good use of these investments? How can we spend more and spend better? Finding answers to these questions will be doubly rewarding because if we can make better use of public money, I have no doubt that will help encourage the private sector to come in.
Sir Arthur Conan Doyle’s character, Sherlock Holmes, is a master at using data. With his unparalleled intellect and observational skills, Holmes has an uncanny ability to collect data—but collecting isn’t enough. In order to solve his cases, he needs to not only collect data, but understand which elements apply to the issues at hand and which to discard as irrelevant. Holmes needs the "right" data.

The short story “A Scandal In Bohemia” was first published in 1891. At that time, collecting data implied a lot of painstaking, time consuming, and sometimes—for a certain detective named Holmes—dangerous work. In 2016, data collection is facilitated by computers and is oftentimes fully automated. As our ability to generate and collect information continues to grow exponentially, the question arises of how this vast repository of information—this data—can be used. Perhaps just as importantly, we need to ask when it should be used and when it should simply be ignored.

Both the private and public sectors are intrigued by the possibility that data can change the way PPP projects are structured, implemented, and monitored. If appropriate data
is collected, analyzed, and shared, it can be valuable to a multitude of stakeholders, including public authorities, private sector partners, lenders, insurance and technical advisors, and the general public. Where data collected or analyzed serves no practical application, it can unnecessarily overburden both the public authority and private operator.

This article addresses certain issues surrounding data within PPP contracts. We’ll examine this from the perspective of the public authority involved in the procurement of a PPP project which must, prior to tendering a project, consider the type of information that is required to be collected and the effect this information will have on the project being procured.

DATA AND THE PPP CONTRACT

PPP projects have the potential to generate huge amounts of data. In the context of a tolled highway project, for instance, a PPP contract may require the private operator to collect, in real time, information regarding weather and traffic conditions, toll collections, vehicle types, license plate information, and power usage, to name but a few. Depending on the PPP contract, some or all of this information will end up in one or more reports that the private operator will be required to deliver to the public authority periodically.

The effect, if any, of this information on the PPP contract entered into between the public authority and the private operator will vary between projects and jurisdictions.

Some of this information will have a direct and relatively straightforward impact on the obligations of the public authority and private operator. For instance, in circumstances where demand risk is allocated to the private sector, payments to the private operator can be linked with the number of project users. A private operator can also be placed in default where reports are not delivered on time or do not contain required information and/or analysis.

Furthermore, information collected by a private operator and delivered to the public authority through periodic reporting, during the term of the PPP contract, can serve to monitor the private operator’s performance and compliance with the PPP contract or applicable law. Following expiration or early termination of the PPP contract, this information can facilitate the private operator’s successor’s or the public authority’s continued operation of the project.

Other information may have no direct contractual effect but will still be desirable by the public authority, such that the PPP contract will require its collection by the private operator. For instance, data correlating weather information with traffic accident reports can be used by a public authority to inform or justify a future public policy decision to automatically lower speed limits on bad weather days.

Still other information will have no immediate discernible purpose, either within the PPP contract or to the public authority, yet will be collected all the same.

COLLECTING THE “RIGHT” DATA

Given the potential for PPP projects to generate massive amounts of data, public authorities need to carefully select the right data. Key to this is considering what type of data should be collected, how it will be used, whether it will have an impact on the PPP contract, or whether it will have some other use.

Both the private and public sectors are intrigued by the possibility that data can change the way PPP projects are structured, implemented, and monitored.
connection between the data being collected and its effect, if any, on the PPP contract (e.g., financial penalties for unavailability or poor performance). Their legal advisors should ensure that these connections are reasonable, logical, and clearly set out in the PPP contract.

To do so, the public authority, and its advisors, must carefully examine and determine what type of data they need, why they need it and what they want to do with it. For example, in the context of a highway project, a public authority may require accident reports to be prepared by the private operator. However, will the level of accidents on the highway affect payments to the private operator? Should the private operator be put in default if a report is not delivered? Will the information be shared with other governmental authorities or with the public? Is another party (the police or the public authority itself) in a better position to collect this information?

Questions such as these need be asked in respect of each of the potential sources of information stemming from a project. The exercise must also always be carried out in consideration of the specific context of the project being procured. Public authorities, and their advisors, should therefore be wary of using precedents and simply applying to a current procurement the same data collection and reporting requirements used for a previous procurement or an analogous procurement stemming from another jurisdiction.

Authorities should also recognize that while huge volumes of data can, with relative ease, be extracted or collected, this data will be of limited to no use if it cannot be validated, analyzed, and presented in a form that can be understood. Indeed, while much of the responsibility for data collection and analysis can be allocated to the private operator, such data will serve little purpose if the public authority or, where applicable, other parties being granted access to the data (the public, academia, etc.), cannot use the data or if the data has no effect on the PPP contract.

Collecting, analyzing, and presenting data can be costly and to the extent this responsibility is allocated to the private operator, overall project costs may increase. Such increased costs will be difficult to justify unless the data impacts PPP contract management or is useful in some other way to the public authority or other stakeholders that may be granted access to such data.

DIVINING THE FUTURE

The types of data being collected and the methods for analyzing such data continue to evolve at a rapid pace. Smartphone applications that track movements or provide constant connectivity to users were relatively unthinkable just 10 years ago. Given the long-term nature of PPP contracts (which oftentimes will have a term of 20 years or more), the question arises of how such contracts can allow public authorities to leverage data on an ongoing basis. Given that it is difficult to grasp exactly how data will be generated, collected, analyzed, and used in PPPs in the future, PPP contracts should include structures which recognize the ever-evolving nature of data and allow enough flexibility for public authorities to continue using the right data.

Adapting a PPP contract to address this issue may not be so difficult. The contract could encourage a cooperative approach between the public authority and private operator to facilitate extracting value from PPP project data during the term of the PPP contract. In Canada for example, many projects contemplate committees staffed by representatives of the public authority and private operator. These committees are tasked, among other things, with the review of project reports and they have the capacity to make certain recommendations for the effective management of the project.

Such committees could be tasked with determining, throughout the term of a PPP project, what data is collected and how it could best serve the project and the public. To the extent changes to the private operator’s responsibilities with respect to the collection or analysis of data are required, the PPP contract’s existing change order mechanism would apply to enable such changes.

CHOICES, CHOICES

Sherlock Holmes is a master detective not just because of his deductive capabilities but also because he excels at selecting information that is most relevant and discarding anything extraneous: he knows how to choose the right data to solve his cases.

Public authorities need to make choices as well when it comes to data and PPP projects. They need to structure their PPP contracts carefully, by determining what types of data need to be collected and how and whether they will have an effect on their contractual relationship with their private operator. They also need to ensure that mechanisms are put in place to enable them to leverage new sources of data as technology continues to evolve.
USING DATA TO DISPROVE PPP MYTHS

LARGE-N DATA IN THE SERVICE OF INFRASTRUCTURE DEVELOPMENT

R. Schuyler House, World Bank Group
It ain't what you don't know that gets you into trouble. It's what you know for sure that just ain't so," quipped American humorist Mark Twain. For infrastructure policy, it's a weighty warning, since sectoral data and analysis inform the policies and strategies that determine who gets critical infrastructure services, and at what cost, reliability, and quality.

Because health, water, power, transport, and other infrastructure services are both complex to deliver and critical to economic growth, development, and quality of life, it is unsurprising that they are subject to strong views.

Staunch advocates and detractors often draw on anecdote to make claims about PPPs that become part of the rhetorical fabric of the infrastructure space, recycled by those of us working in the field. Moreover, tremendous PPP successes and debacles are referred to frequently, since stark examples of success or failure are helpful to arguing a point. The claim, "PPPs lead to new investments that help extend services to the poor," may be countered with an assertion that "PPPs are the privatization of services for the primary benefit of the private sector." In the same vein of contrast, some maintain that PPPs help control corruption, whereas others argue that PPPs are just new opportunities for rent-seeking. These claims can all be correct in individual cases, but certainly don't apply across the board.

Thirty years into the marked revival of private participation in infrastructure, we know that PPPs can capture managerial, technological, and innovational strengths of the private sector and help governments tap new sources of revenue. But because every project is different—every context and situation unique—it is difficult to draw generalizable conclusions from one case. How do we know, for example, how a factor affecting one project will impact others? If a factor is critical to one case, how comfortable can we be with assuming it will be to others, or even if it will be influential in a similar direction? If we perceive a problem in one, how can we know its degree of prevalence?

Large-N quantitative data can be analyzed via descriptive statistics to deliver insights on general patterns of PPP investment and performance—that is, "what is going on" in the data. With richer data sets, we can use statistical methods to determine the typical influence of factors such as contract design, political regime, or corruption on outcomes such as investment levels, service quality, or increased access. Economic models can tell us more about why certain patterns exist and how particular factors tend to affect the project. In other words, these large-N datasets show how extensively outcomes are experienced, under what conditions PPPs are likely to work, and where we should focus efforts to improve viability across the board.

By drawing on multiple bases of evidence and large data sets, in particular, we can identify patterns to improve PPP implementation and be better prepared for potential challenges in different political-economic contexts. Large-N data can also confirm or debunk PPP myths rooted in popular commentary. A few examples follow, focusing particularly on quantitative research in the water sector.

**MYTH**

**PROJECTS INVOLVING MULTILATERALS TEND TO FAIL MORE OFTEN.**

The PPI Database does, indeed, show that a higher percentage of water projects with multilateral support have been cancelled or are in contract distress, as opposed to those that are not. But regression analysis and matching methods can be used to tease out the institutional, political, and project factors and isolate the impacts of multilateral support, to show that the involvement of a multilateral is actually positively significant to survival and investment (Jandhyala, 2016; House, 2014; Hammami, et al, 2006). Forthcoming econometric research from the World Bank PPP Group corroborates these findings. The descriptive statistical patterns result because multilateral institutions support projects in regions with complex and challenging operating environments that make cancellation more likely and limit foreign direct investment (FDI). That is, the higher rates of failure for IFI-supported projects are attributable to the difficult local conditions where multilaterals tend to operate, not the participation of a multilateral. Research shows that the legal and political characteristics of a market are important determinants of multilateral development bank (MDB) participation. Countries with higher legal risks (measured by the index of creditor rights and days needed to enforce a contract) and higher political risks (less accountable regimes) are more likely to involve MDBs in their PPPs (Basilio, 2010).
PPP SUCCESS IS JUST A MATTER OF DESIGNING GOOD CONTRACTS.

Contract design is undoubtedly critical to PPP success. Nose, for one, empirically demonstrates the importance of risk allocation in the contract and the risk-bearing capacity tendencies of government and business (2011). On the one hand, the contract cannot allocate risk too excessively to the private partner. When the firm’s financial participation exceeds 80 percent of the total, the hazard of termination increases significantly. But the research also demonstrates a dilemma: while guarantees can make projects bankable by relieving some private sector-side risk, larger contingent liabilities held by government increase the risk of cancellation, since called guarantees are likely to incur large costs to the government and thus spur dispute. These kinds of findings are helpful to inform other contracts.

But looking past the contract, research tells us that attracting and sustaining private participation also depends on a host of institutional and bureaucratic conditions. For one, a government’s capacity to protect property rights becomes important to the ability to sustain a water PPP over the long term, particularly for concessions. Regression analysis of the legal structure of property rights suggests that judicial independence, legal enforceability of assigned rights, ability to utilize the legal system, and integrity of the legal system are significant to long-term concession survival (House, 2014).

On the investment side, larger markets with stable inflation, stable political systems, sound rule of law, and the capacity to provide quality regulation have been shown to lead to more PPP investments (Hammami, et al, 2006; Banerjee et al, 2006; Basilio, 2010). These results give us an appreciation of the legal, institutional, and economic underpinnings required to attract and sustain PPPs, above and beyond contract design.
Large-N patterns related to democracy and citizen voice are very interesting, as they shed light on the dynamics of politics, participation, investment, and performance. On the one hand, higher levels of civil rights (that is, more citizen voice) and political volatility have shown to discourage infrastructure investment due to higher costs of garnering public approval and the risks associated with public dissent and regime change (Banerjee et al., 2006; Bergara, Henisz, & Spiller, 1998; Zhang, 2005). Political resistance has been recognized as a central factor in private investment failures in many countries (Finger, et al., 2007; Hall, et al., 2005).

But more active democracies also tend to see better performance, as increased transparency controls graft and intensifies pressure to perform. Hammami, et al (2006) demonstrate that more political competitiveness leads to more PPP investment, and Nose (2011) finds that democratic countries are more likely to honor contracts than autocratic states. My own research finds that political instability can paradoxically preclude cancellation of water utilities, possibly because destabilized governments with diminished capacity to manage services are increasingly less likely to see termination as a viable option (2014). On managing opposition, Carerra et al (2005) find that privatization is better accepted when it doesn't involve basic utilities, when there is a low degree of income inequality, and where reforms have a positive impact on government revenues.

A professor of global health at Sweden’s Karolinska Institute, Hans Rosling’s current work focuses on dispelling common myths about the so-called developing world, which (he points out) is no longer worlds away from the West. In fact, most of the Third World is on the same trajectory toward health and prosperity, and many countries are moving twice as fast as the West did.

What sets Rosling apart isn’t just his apt observations of broad social and economic trends, but the stunning way he presents them. Guaranteed: You’ve never seen data presented like this. By any logic, a presentation that tracks global health and poverty trends should be, in a word: boring. But in Rosling’s hands, data sings. Trends come to life. And the big picture—usually hazy at best—snaps into sharp focus.

—From the TED website
“SPOCK IN THE BOARDROOM”

WHERE BIG DATA MEETS BIG VALUE

A discussion with DJ Patil, Chief Data Scientist, U.S. Office of Science and Technology Policy

Interview by Alison Buckholtz
You have to be clever with data—you have to use it to tell a story.

You and your colleague, Jeff Hammerbacher, coined the term “data scientist.” It’s a job title that could only exist in a time known for Big Data. But what does a data scientist actually do?

There was no desire by Jeff or me to make up a whole new field. Back in 2011, Jeff was running the data team at Facebook, and I was at LinkedIn. Despite what people think about big companies being competitive, we actually got to meet pretty frequently and trade notes. We shared the idea that the things we were building were hard, and collaboration could help us meet our goals. One thing we started talking about was how to come up with common labeling for our team members, all of whom were engaged in some area of data science. We had research scientists, statisticians, designers, front end engineers—but we needed one term that described all of them. “Analyst” sounds too Wall Street. “Statistician” makes the economists mad and vice versa. “Research scientist” sounds too academic. The term that seemed to fit best was “data scientist” because it referred to those who use both data and science to create something new. We used a data-driven approach to test it via job postings on LinkedIn, and all the right people applied to the job postings that used “data scientist.”

The term quickly became part of the lexicon, despite its imprecision. Did that surprise you?

It surprised me very much. I never expected it. The reason I think the term has taken off to the way it has is because it’s ambiguous. No one knows what it means, so it gives you permission to be what you want to be. It’s empowering to have a title that allows you to control your own destiny.

Why does the role of data scientist matter for institutions and companies?

As with everything in life, you can look at this through the lens of Star Trek. The first person that the Captain turns to when there is a problem is Spock. And Spock always responds to these problems the same way: he answers, in one form or another, with the word “curious.” This is the viewer’s cue that he’s going to start figuring out how to solve the problem. For a company or institution, the goal of having a Spock on the bridge—or in the boardroom—is to solve problems. In today’s world, that’s the role of the data scientist. The data scientist is the person who understands things.

Has the field of data science spawned other career tracks that didn’t exist before Big Data?

You have to be clever with data—you have to use it to tell a story. And that’s what the new field of data journalism is all about. Sites like FiveThirtyEight are using data as their weapon of choice to get to the heart of whatever story they are telling.

Is Big Data viewed differently in the public sector versus the private sector?

Most people think that Big Data originated in the private sector. But among those of us who came into this recent wave of Big Data over the past 10 to 15 years, almost all of us got our start in the federal government, particularly in national security and bioinformatics. We had these gigantic data sets and wanted to know how to use that data most effectively—whether that’s preventing terrorism or trying to understand the genome. So the push started in the public sector. That’s true for me as well: I worked on weather data, and that data was produced by the National Weather Service.

A data-driven organization, whether public or private, acquires data in a very sophisticated manner. Then they process it—and in doing so, they turn it into value. That value ultimately translates into an outcome. They want to use the data to build a product for the user. They don’t show us data—they just get us to the goal that we want. Whether that final product is private or public, the line gets blurry. For example, a self-driven car from a for-profit company could stream data from the National Weather Service to warn passengers when there are dangerous conditions ahead.

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If a government is trying to decide where to build a new bridge, data can show where the congestion is greatest, and computer simulations integrate these statistics as they model these questions. Data is a very powerful force multiplier when trying to answer these sorts of infrastructure questions.

How can the use of data strengthen outcomes for emerging economies, especially when governments may not have the resources to generate data themselves?

When you look at the UN’s Sustainable Development Goals, it’s striking that data is central to creating strategies to reach those goals, whether it’s ending poverty, enabling education, or any of the others. Let’s talk about providing efficiency in education by allowing students to learn in a non-linear fashion. Customized learning experiences like MOOCs, that may be non-linear, are one option. That’s where you use data to better track students’ learning outcomes and produce proposals for personalized educational environments.

Another important area in which we have not utilized data enough is in agriculture. The United States Department of Agriculture has adopted “precision agriculture,” and what it’s enabled has been really incredible. It allows monitoring of soil with satellites, which in turn determines how to increase crop yield—maximizing crops while ensuring the soil stays healthy. This is a game changer for many environments. If you are using data you’re entering each year, increasing your yield by three to five percent, then you double your capacity over a number of years. That has direct implications for emerging economies that have the benefit of using data to think about the problem. And they can use someone else’s open data, they don’t have to generate their own.

Speaking of open data, how is the field of Big Data evolving?

On an institutional level, in 10 to 20 years, data will become increasingly open, so you won’t have to work so hard to get the information you need. Data will be ubiquitous in our lives, adding value, and data will be safe. On a personal level, data will allow us to be proactive in our lives and in terms of our health, for better decision-making all around.
The role of a transaction advisor generally concludes with the successful commercial or financial close of a PPP project. But the reality is, this is just when the transaction itself starts to come to life—the challenges of construction and operation are still down the road, the contract management and supervision have yet to present their own set of challenges. Yet the work of the transaction advisors is done and they are off to their next role. Sometimes, further down that road comes a question that prompts an assessment and a reflective look towards the past: Did the project deliver on its initial promise and intentions, and what data supports that conclusion?

That question is increasingly asked by NGOs, the public, donors, and stakeholders. Challenging as it may be, finding an answer to that question is imperative for transparency, openness, and accountability. But it is equally important from an operational point of view, because answers—especially answers that are based on solid data—can improve the quality of recommendations by transaction advisors and strengthen the sustainability of PPP projects.

ADDRESSING ASSUMPTIONS FIRST

A systematic answer to the question of whether or not the project delivered on its initial promise and intentions, and what data supports that conclusion, requires a purposeful comparison between the initial set of assumptions, targets, and projections.
and the actual results, usually several years after a project becomes operational. The challenges of revisiting a project years after a transaction advisory assignment concludes are not insignificant. Often the regional government champions and counterparts have departed and the client connection and relationship needs to be reestablished. Without it, access to interviews and data is going to be much harder.

Not surprisingly, political sensitivities around a project can also affect the willingness of public officials to discuss issues and difficulties of contract management. The private operators are sometimes interested in telling their story, but that is by no means certain.

In the cases where they are happy to share their experience working with the government and the operational challenges they encounter, the conversation becomes slightly more fraught when the question of data is brought up. To have a reasonable grasp of the achievements of a project one would need the latest data (for example, number of connections; improvement in road quality; passenger traffic) and compare a project one would need the latest data (for example, number of connections; improvement in road quality; passenger traffic) and compare with projections made at the time of commercial close.

In road quality; passenger traffic) and compare with projections made at the time of commercial close. Financial models, to improve the projections around timing of post commercial close stages, and in general to provide a realistic check on assumptions. A systematic tracking of the frequency of specific issues—delays in payments, the need and frequency of contract renegotiation, an overwhelming initial demand, the need to establish sometimes expensive baselines—can yield precious lessons for further improvements in the delivery of transaction advice.

From the perspective of a development institution, more information on actual results will allow better targeting and tighter links between the promises of developmental impact and the realization of such impacts. Post-implementation data on beneficiaries of PPPs and on the realized benefits to governments can help clarify the case and conditions behind the development value of PPPs. Both donors and the public will be better informed and convinced by actual data on beneficiaries rather than reliance on a blank assumption that all infrastructure is good by definition.

A key and possibly under-researched area regards the demonstration effects of PPPs: post-completion evaluations can and should provide more insight in that area. In general, understanding the propagation mechanisms by which a solar power PPP project in an Indian state catalyzes similar projects elsewhere can yield important lessons into how and why certain types of projects manage to provide a catalytic spark within a country or a region.

The catalytic rationale is also central to IFC’s mission. Post-completion project monitoring can help us have a more disciplined approach in discovering and documenting the demonstration/catalytic mechanisms, especially in the cases where the explicit goal of our engagement is to spur additional inflows of foreign or domestic private capital in a sector.

As we track the explosion of Big Data throughout society... we continue to examine the promise of post-transaction data to contribute to more efficient, effective PPPs.

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The rising demand and increased costs for health service delivery are straining health delivery systems worldwide. In most countries, the majority of the health delivery system is government controlled, with public hospitals accounting for the largest percentage of overall health care spending. These public hospitals are as expensive as they are central to the national health care policy, so it’s in government’s best interest to assure they are functioning efficiently and effectively. Yet they are perhaps the most complex and difficult environments in which to enact reform.

For at least part of the cure, Turkey has turned to a public-private partnership (PPP) facilities management (FM) model to bring in the expertise and efficiencies of the private sector in managing the hospital plant, allowing the government to focus on clinical service delivery. The approach includes the design, construction, financing, and non-clinical operation of hospital and health facilities. It is based on the experience and recorded results of more than 100 private finance initiative hospitals built in...
the UK since the early 1990s—a model that has since been adapted to other markets including Australia, Canada, France, South Africa, and Spain.

**TURKEY’S TURN TO LEARN**

The Turkish government took away several lessons from the UK’s experience with its public hospitals—lessons embedded in outcomes recorded throughout the robust monitoring process. The UK’s National Audit Organisation has concluded that while most contracts are performing satisfactorily, or better, at meeting the expectations of public sector management entities, the public sector in the UK did not initially dedicate sufficient resources to contract management. As with most new procurement methods, FM PPP contracts present a challenging task for the public authorities to manage, especially given the operational complexity of hospitals.

Contract management is particularly important when the public sector is trying to ensure value for money. Without it, the intended value for money, upon which PPPs are chosen, can slip away quickly from the public sector, with risks initially transferred to the private sector landing quite uncomfortably back on the doorstep of the government.

The UK monitoring results and subsequent recorded data are relevant for Turkey because its hospital infrastructure sector, controlled by the Ministry of Health (MoH), must modernize its hospital infrastructure to bring it up to international standards. This includes the need for an additional 90,000 hospital beds between now and 2023. To date, the Turkish Government’s PPP program has resulted in awarding more than 15 PPP contracts under the first phase of the program for the construction and provision of products and services for integrated hospital infrastructure projects.

Under this model, the private sector is being called on to provide key infrastructure (buildings and equipment) and facilities management, while excluding clinical services. (The European Bank for Reconstruction and Development [EBRD], under a Framework approved in September of 2014, will contribute to the co-financing of up to eight hospital facilities management PPPs with a total project value of €6 billion alongside IFC, EIB, and a host of Turkish banks.) To date, new hospitals to be built in Adana and Etilik have reached full financial close, and several more are expected to close this year.

Robust and accurate data collection is at the center of this effort. At the heart of successful PPPs is a public sector agency able to monitor the set of Key Performance Indicators (KPIs) that clearly define the quantity and quality of the infrastructure and services to be delivered by the private sector concessionaire. To minimize the potential for contractual disputes and other sorts of potential legal wrangling in the operational phase, it’s important to define these KPIs and their data inputs in a straightforward manner; stating clearly who is responsible for collecting and reporting on KPI-related data, and who verifies the accuracy of these critical inputs.

As experienced public sector agencies know, time and effort spent on this aspect in the pre-tender phase will pay off in spades once the asset becomes operational. The ambitious scale of the PPP program will place a heavy set of demands on the Ministry for monitoring of the contracts. To be effective, the PPP program will require a dedicated, trained team to act as equal counterpart to the PPP contractors. Much of a PPP’s value is dependent on the private sector concessionaires being held accountable for delivering and maintaining the broad set of benefits they offer at that time of tender award. Accountability of the PPP contractors is enforced by continuous monitoring and competence exercised by the public sector. For these new PPP-designed hospitals in Turkey to achieve a clean bill of health—not just at launch, but throughout their lives—a systematic approach to monitoring the PPP contractors’ performance must be established at the outset, alongside a commitment to identify challenging issues early on. Strict monitoring of all building systems, cleaning, and hygiene throughout the new hospital asset are of course essential, as are the maintenance regimes around sensitive and valuable diagnostic equipment.

For a thriving Turkish health sector that will best serve its people, monitoring will be the best medicine, and data the best doctor.

**Monitor- ing and Data Are Key to Progress**

Recognizing the importance of contract monitoring, the MoH (with support from the EBRD) is strengthening its PPP contract monitoring capacity.
Preventing problems in PPPs, achieving better results

THE RISKS INHERENT

in public-private partnerships (PPPs) are real. These long-term projects require substantial investment: typically, PPP project funding structures constitute 70 to 80 percent debt, with the remaining coming from equity sources. Because of the nature of these projects, their loan repayment profile demands a longer tenor. In a practical sense, once lenders start disbursing funds to a PPP, the loans could remain on their balance sheet for around 20 years. This is a typical scenario.

For such prolonged engagement in PPP projects, lenders’ ability to monitor the project during the construction and operation phase becomes critical. The approach to monitoring we’ve been offered so far serves its purpose up to a point, but promising developments in real-time data monitoring have the potential to serve as effective early warning signals—assuring the success of a PPP in ways that could revolutionize certain sectors.

THE RISKS INHERENT
TODAY’S MECHANISMS FOR MONITORING

The current practice of PPP project monitoring by lenders happens at two levels, in many cases simultaneously. The first level of monitoring is done by the lenders, who often operate through consultants—subject matter specialists—who monitor the project on their behalf. These advisors remain engaged with the project throughout the project’s life and provide periodic monitoring reports to the lenders.

For example, during the construction phase, lenders’ technical consultants may provide monthly or quarterly construction monitoring reports. Post-construction, technical consultants provide yearly or bi-annual operating reports. Similarly, insurance consultants subject matter specialists—who monitor the project on their behalf. These advisors remain engaged with the project throughout the project’s life and provide periodic monitoring reports to the lenders.

If the above reports identify any gap, lenders then take the corrective actions within the scope of financing agreements. These may include, for example, a breach of undertaking by the borrower (i.e., the project company), which can lead to blocking the dividend payment. On the other hand, lenders may also decide to waive such requirements, depending on the case in hand.

This makes it clear that the information flow occurs post facto—not on a real-time basis. By the time the information is made available to the lenders and a gap has been identified, a period of time has already lapsed. Lenders can take corrective actions in most of the cases, but the period for preventive actions has long passed. This is where the promise of real-time data comes in. Real-time data, when seen as an early warning signal, allows lenders to take preventative actions that better assure the success of a PPP.

Promising developments in real-time data monitoring have the potential to serve as effective early warning signals—assuring the success of a PPP in ways that could revolutionize certain sectors.

HOW DO WE GET THE BEST REAL-TIME DATA?

Benefits of real-time data, and its use in monitoring projects, will vary across PPP sectors. The biggest beneficiaries include projects that are exposed to market risks, such as transport PPPs including toll roads and ports.

Benefits of real-time data, and its use in monitoring projects, will vary across PPP sectors. The biggest beneficiaries include projects that are exposed to market risks, such as transport PPPs including toll roads and ports. Feed-in tariff-based Independent Power Producers could also benefit tremendously from this approach. As the standards for real-time monitoring mature and real-time tracking of operating performance grows to include tracking of revenue generation, the potential for sounding early warnings increases. Potentially, lenders could then be proactive when bad days are looming.

The challenges to implementing real-time data are almost as great as the promise it holds. For real-time, data-based PPP asset monitoring, there is a twofold test yet to be met: first, putting the necessary IT infrastructure in place, and second, feeding data into the system on a continuous basis.

Overall, the IT infrastructure should allow lenders to monitor key parameters remotely. On the project end, the infrastructure should allow collection of data through an automated system, without the need for human data entry. Consider a toll road project, for example: the transponders on the toll roads capture how many vehicles pass through the road, which then translates easily into revenue calculation. Lenders would be able to see, on real-time basis, how much the project is earning and whether that matches their original projection or not.

While the discussion remains theoretical, pilot projects can help us learn how the model would benefit lenders, and how to implement this sustainably. At the Islamic Development Bank, we think that an airport or toll road project, funded by more than one multilateral development bank (MDB), is a good candidate to test the model as a pilot. It would be a departure from the norm—the very sort of original effort that is called for—and therefore may need technical assistance support to induce the project companies implementing the pilot. A concerted effort by the MDBs is necessary to push such an effort, and we stand by ready to act.
OPEN DATA
INCREASED DISCLOSURE
BETTER PPPs

Measuring results in Latin America and the Caribbean

David Bloomgarden, Inter-American Development Bank and Georg Neumann, Open Contracting Partnership
For example, Mexican President Enrique Peña Nieto announced at last year’s Open Government Partnership meeting in Mexico City that Mexico will use open contracting in building the country’s newest airport and selecting businesses to deliver on services. It’s a significant announcement because the airport is one of the largest infrastructure projects in Latin America this decade, and the largest one in Mexico.

OPEN CONTRACTING FACILITATES DATA DISCLOSURE

Open contracting is a solution that discloses all data along the public procurement process, from the planning stage, to the bidding and awarding of the contract, to the monitoring of the implementation. It uses a global open source data standard to publish that data and is already being implemented in countries as diverse as Canada, Paraguay, and the Ukraine. Using open data throughout the contracting process provides opportunities to innovate in managing bids, fixing problems, and integrating feedback as needed. Open contracting contributes to the overall social and environmental sustainability of infrastructure investments.

Mexico’s airport project already publishes details of awarded contracts, including visualizing the flow of funds and detailing the awarded contracts and renewable agreements with full amounts, standardized, timely, and open data provided by global standards such as the Open Contracting Data Standard will make this information useful for analysis of value for money, cost-benefit, sustainability, and monitoring performance. Crucially, open contracting will shift the focus from just the inputs into a PPP to the outputs: shifting the attention to the goods and services being delivered.

BENEFITS OF OPEN DATA FOR PPPs

We think that better and open data will lead to better PPPs. Here’s how.

1. USING USER FEEDBACK TO FIX PROBLEMS

The Brazilian state of Minas Gerais has been a leader in transparent PPP contracts with full proactive disclosure of the contract terms, as well as of other relevant project information—a practice that puts a government under more scrutiny but makes for better projects in the long run. According to Marcos Siqueira, former head of the PPP Unit in Minas Gerais, Brazil, “An adequate transparency policy can provide enough information to users so they can become contract watchdogs themselves. Understanding the output specification and the levels of services required (and being delivered) empowers users and helps to create pressure on the operator to deliver what was promised in the bid.”

For example, a public-private contract was signed in 2014 to build a $300 million waste treatment plant for 2.5 million people in the metropolitan area of Belo Horizonte, the capital of Minas Gerais. During preparation, the project team operated under a policy of full disclosure. As the team members conducted appraisals, they continuously disclosed them on the Internet. In addition, the team held around 20 public meetings and identified all the stakeholders in the project.

The sharing and discussion of this information changed the project dramatically. Most notably, the facility was relocated to a less-populated area. When the project went to the bidding phase, it was much closer to the expectations of its various stakeholders.

2. MAKING BETTER DECISIONS ON CONTRACTS AND PERFORMANCE

Chile has been a leader in developing PPPs (referred to in Chile as concessions) for several decades. Its PPPs span sectors including urban and inter-urban roads, ports, airports, hospitals, and prisons. It tops the list for the best enabling environment for PPPs in Latin America and the Caribbean, as measured by Infrascope, an index by the Economist Intelligence Unit and the Multilateral Investment Fund of the IDB Group.

At the core of Chile’s success lies the concept of active transparency. In 2008, Chile introduced an Access to Public Information Law to make information more widely available. The implementation of the law is overseen by the Transparency Council. Information about all PPP projects will be published on the website of the Concession Unit of the Ministry of Public Works, which oversees the open bidding process. Every project is also required to publish a social cost-benefit analysis.

What makes Chile stand out is that it discloses information on performance of PPPs. The Concessions Unit regularly publishes summaries...
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The key to further progress is to make all public contracting information open. "Open" means not only that information is available, but that it is readily shareable and usable and in data formats that enable large-scale analysis.

What we need to avoid is a lazy default where information is routinely classified as confidential, especially where other checks and balances on misuse of government or corporate power are proportionately weaker.

Most importantly, open contracting makes financial sense. Under open contracting, ratings for Minas Gerais increased, providing better conditions for lending more money. Indeed, the state’s strong fiscal management system, including the publication of its contracts, led Standard & Poor’s in 2012 to raise its credit rating for the state.

Increasingly, private sector financing will be needed to finance the growing demand for infrastructure projects that address the Sustainable Development Goals. The infrastructure goals alone carry a hefty price tag. We need to ensure that money is well spent and results in real benefits for the world’s poorest people.

AN ARGUMENT FOR RADICAL TRANSPARENCY

The key to further progress is to make all public contracting information open. “Open” means not only that information is available, but that it is readily shareable and usable and in data formats that enable large-scale analysis.

Siqueira, writing in the World Bank Group’s PPP Blog, has proposed radical transparency. “A radical approach to transparency is the single best solution to managing the duration and complexity of PPP projects,” he explained. “Transparency makes it difficult for either party to disrespect the contract. When brought to the light of the day, decisions tend to become better and opportunistic behavior is highly discouraged.”

There may be some circumstances where it is not in the public interest to publish specific details of public contracts that touch on national security, privacy laws, and some commercial secrets. However, these are few and far between. That is the conclusion of an excellent paper by Charles Kenny from the Center for Global Development, who analyzes such exemptions in detail. Most of the commercial confidentiality concerns can be addressed by specifying when information needs to be disclosed as many concerns arise during the bidding process.

of the projects during the different phases of the projects, including construction and operation. The reports are non-technical, yet include all necessary information to understand the scope of the project.

Managing renegotiations and adjustments of the original contract are a critical factor in the success of PPPs. Over the course of a PPP, for example when building a road, additional works emerge frequently. Sometimes, concessions need to be renegotiated. New transparency mechanisms introduced in 2010 were created to handle this new information. Introducing additional bidding for these works and dispute-resolution mechanisms have reduced the extent of renegotiations and improved the quality of competition. Clear public data during performance, including usage of built projects, is key to making decisions.

Eduardo Abedrapo Bustos, Concessions Coordinator in the Chilean Ministry of Public Works, says that these processes “are reinforcing the dissemination of information to better incorporate interested parties in monitoring the construction and operation of projects. This way, they are not only recipients of information. Citizen and user committees can provide support and feedback to solve problems, identify new requirements, and verify that the project complies with what is committed and planned.”

The benefit of improved transparency, information sharing, and citizen feedback is clear to Abedrapo: “Perfecting the methodologies for participation helps infrastructure match citizen needs and contributes to better quality of life. In this way, civil society becomes part of the project and its value. This process helps to reduce costs by avoiding run-over costs and delays if adjustments are needed after the fact, and minimizes conflict with communities, creating more sustainable and inclusive projects.”

INCREASING COMPETITION

Jamaica has shown the greatest improvement in its capacity to carry out PPPs. It now ranks eighth, up from 13th in the latest InfraScale. Increased transparency in the identification, development, evaluation, implementation, and management of PPPs is a significant reason for this leap forward. Jamaica’s PPP policy provides information about PPPs at all stages from planning onwards.

Unsolicited proposals can be a source for new ideas the Jamaican government may not have identified on its own. However, managing these unsolicited proposals for innovative solutions can be tough. They may lose in an open competition, not achieve value for money, and cause complaints from other private operators that did not get a chance to submit a bid. Jamaica’s new regulation balances the need for competitive tension by requiring competitive bids for projects already in the government’s pipeline of PPP projects. A Swiss Challenge is used for unsolicited proposals: this allows challengers and new or non-traditional businesses to submit a bid as long as it offers the same or better services at the same or less costs without increasing the risk to the government or public. The challenge bids must offer equivalent assurances on quality, performance guarantees, and financial standing.

Denise Arana, General Manager for PPP and Privatisation Services at the Development Bank of Jamaica, believes that this “competi-
How has Kenya’s PPP Unit grown since the PPP Act?

Compared with many of its national counterparts, the Kenya PPP program has made remarkable progress since the enactment of the PPP Act in 2013. We attribute this achievement to the well-thought-out procedures and institutional set-up that are dictated within the Kenyan PPP law, and particularly a specialized PPP Unit within the National Treasury.

Why are PPP Units necessary to governments?

An institution to champion the delivery of a country’s PPP program forms an important component in developing an effective and sustainable PPP framework. Due to the need for specialist inputs and advice within the development cycle of PPP projects, PPP Units not only provide this expert support to public sector ministries and agencies, but also act as virtual one-stop shops for PPP investors, increasing both the quantity and quality of public services. While the discussion on where within government such centers of PPP excellence will be positioned is jurisdiction-specific, we believe that according it the necessary authority and operational flexibility is crucial in determining its effectiveness in carrying out its functions, and has a definite impact on its credibility to coordinate with the various government entities involved in developing and implementing PPPs. Moreover, a PPP Unit creates confidence in the market as to the seriousness of intent behind a government’s PPP program.

However, given the wide range of expertise and experience often required, establishing and staffing PPP Units takes time. This is particularly

PPP Units best operate under a non-partisan role.

Stanley K. Kamau is the Director of Kenya’s PPP Unit and is responsible for overall coordination, promotion, and oversight implementation of the country’s PPP program. Appointed in early 2010, he has been the driving force behind Kenya’s PPP agenda, overseeing the establishment and operationalization of a robust legal and regulatory framework, as well as an ambitious PPP pipeline.
Is there a set of priorities for PPP Units that transcends specific, national needs?

Yes. In our opinion, PPP Units best operate under a non-partisan role. Some of the noteworthy priorities that transcend specific, national needs include:

- Establishment and operationalization of an enabling PPP environment with sound legal and regulatory provisions so as to create investor confidence and increase private capital;
- Lend specialist support in the generation of a pipeline of bankable national and county-level PPP projects;
- Regulatory function of gate-keeping and enforcing of PPP legislation;
- Communication and marketing of the country as an attractive PPP investment destination;
- Nurturing of a capital market based on market forces;
- Protection of government against fiscal risks that materialize from the public sector’s contributions to the “partnership” of PPPs; and
- Enhancing PPP capacity for both the public and private sectors.

How does your PPP Unit balance the need to be independent with the need to use other government agencies’ resources, skills, and expertise?

The support to PPP Unit operations is deliberately designed to provide the Unit with the necessary independence and objectivity to sufficiently, and without bias or fear of conflict of interest, carry out its duties. It is resourced from within National Treasury with contributions from our development partners, in particular, the World Bank Group and the Department for International Development. Established to act as an advisory, facilitatory, and compliance enforcement government organ, for both national and county level institutions, we have within our law clearly spelled out the roles and functions of each player, thus managing our interaction with line ministries, procuring authorities, and oversight bodies.

How does your PPP Unit work with other investment institutions in the region? What are examples of formal and informal regional coordination or collaboration?

We are an active participant and contributor to all major PPP themed conferences in the region and quite often do lend our voice as speakers on the development of cross border infrastructure ranging from transport corridors to power generation and transmission. Within the East Africa region, I recently took up the position of Council Chairman of the International Project Finance Association East Africa Branch. Working closely with governments, multilateral development banks, and development finance institutions, our objective is to represent the interests of the member states and act as an ambassador to advance project finance and PPPs in the region.

The PPP Unit is also party to discussions of the Northern Corridor Integration Projects Summit, which works to establish an enabling PPP framework to facilitate effective private sector participation in the implementation of PPP projects that transverse the member state countries.

In addition, to market and increase development partner support to Kenya’s PPP Project Facilitation Fund, we are looking towards setting up a PPP Donor Coordination Group that will meet periodically to coordinate activities, and discuss potential projects within sectors of interest.

What PPP projects have been especially rewarding, and how do these projects inspire you to engage in others that pose significant challenges?

The generation of power in Kenya by Independent Power Producers started in the mid-1990s and has been very successful. We wish to leverage this experience and scale up generation of an additional 5,000 MWe within the next three to five years using the PPP approach. Working closely with the energy sector, we concluded the procurement of a private partner to develop a 960 MWe coal power plant at the

In the last three years, we have established an enabling legal and institutional PPP framework and identified a pipeline of PPP projects.
Kenyan coast, estimated at $2 billion. We are now at an advanced stage in the recruitment of a transaction advisor for the development of a 140 MWe geothermal power plant at Olkaria. We expect that these two projects will further enhance the credibility of the government in attracting private sector investments in the energy sector, help standardize PPP documentation, and reduce the turnaround time for procuring power generation projects.

Following the commercial closure of a PPP project for the development of accommodation hostels for 10,000 students in one of the public universities, the education sector is also showing good prospects. With the support of a transaction advisor, we envisage rolling out this PPP model, or a similar one, to five other public universities to cater to the accommodation needs of approximately 50,000 students.

What projects are in the pipeline?

We have a number of promising projects in the roads and transport sector. Currently, we are midstream in the procurement of a private concessionaire to equip, operate, and maintain a second container terminal at the port of Mombasa, one of the busiest ports on the eastern coast of Africa. In roads, with the support of international transaction advisors, we are preparing five PPP transactions for market engagement in 2016. As is common in other developing markets, introduction of toll roads is likely to be challenging, but with adequate stakeholder engagement and consultations, we expect these projects to be implemented successfully.

With the experience gained from the above sectors, we look towards gradually moving into other sectors such as airports; railways; petroleum infrastructure; water supply, treatment, and distribution systems; solid waste management; and social infrastructure for health care and prisons.

In calculating value for money, data on the lifecycle costs related to a project—and actual costs of the projects, time and cost overruns, maintenance, and operational costs—are not readily available. It has proven somewhat difficult to establish the true cost of a traditionally delivered infrastructure project.

What sort of data about PPPs would your office find useful? What data do you regularly look for in deciding on a PPP project?

Kenya’s PPP Act provides that only those projects which seek to deliver a positive value for money shall be undertaken as PPP projects. In calculating value for money, data on the lifecycle costs related to a project—and actual costs of the projects, time and cost overruns, maintenance, and operational costs—are not readily available. It has proven somewhat difficult to establish the true cost of a traditionally delivered infrastructure project, thus necessitat-

Africa’s infrastructure funding gap is huge and cannot be addressed without the involvement of private sector through PPP arrangement. It is therefore not a matter of choice but of necessity to embrace PPPs in Africa.

How do you use monitoring and evaluation techniques, and track PPP performance over time?

The monitoring and reporting systems are embodied in Kenya’s PPP Act. All contracting authorities are expected to report on a quarterly basis on the performance of their PPP projects. As part of our PPP manual, we have also developed monitoring and evaluation, or M&E, formats that are to be used by contracting authorities as the project develops. In addition, details on how projects are monitored are included in each PPP Agreement signed between Government and the private party.

A key measure to a PPP project’s health is the quarterly fiscal risk and contingent liabilities reporting requirement placed on contracting authorities. This requirement sees them prepare and submit an updated risk matrix for each of their projects in an effort to monitor and manage any arising risks in a sustainable manner.

What are your predictions for Kenyan PPPs, and PPPs in Africa more generally?

In the last three years, we have established an enabling legal and institutional PPP framework and identified a pipeline of PPP projects. I see the immediate future leading to us taking a sizeable number of these projects through to implementation and in effect, bridging our present infrastructure funding gap while bringing in private sector efficiency in the delivery of public infrastructure services.

Africa’s infrastructure funding gap is huge and cannot be addressed without the involvement of the private sector through PPP arrangements. It is therefore not a matter of choice but of necessity to embrace PPPs in Africa. For those countries that have not started or are in the process of developing their PPP program, they will require support from other countries with mature PPP programs as well as financial support to build the required capacities. In this regard, I see a scaled-up PPP program in Africa in the next five years.

However, for these PPP programs to be successful, the domestic financial markets will need to be deepened to raise a significant portion for financing the PPP projects. Stable GDP growth supported by stable political environments will also be critical in addressing African countries’ risks—a step necessary to attract cheaper direct foreign investments.
Every December, Goldman Sachs’ Thematic Research team combs through their “Fortnightly Thoughts” reports from the year and compiles 100 of the most interesting charts they’ve published. Taken together, 2015’s picks tell a story of change and hint at what might be hiding around the corner.

Top Charts of 2015: 10 Favorites from Goldman Sachs Research

PPP’s for development continue to play a prominent role in America’s global development policy. President Barack Obama’s Global Development Council—a special advisory group comprised of public, private, academic, and non-governmental representatives—continues to emphasize galvanizing the private sector and supporting new and existing PPPs.

The PPP model has proved its financial viability in the construction of hospitals in Peru. What has Peru’s approach to health PPP’s been, and what have the outcomes shown?


Here’s an interesting look at how public investment-led growth is bolstering the economies of a number of countries in different regions, and how public investment—instead of crowding out private investors—may actually help attract private investment. There’s also a useful link to a new IMF paper on “Crowding-Out or Crowding-In? Public and Private Investment in India.”


India has embarked on an ambitious quest to create 100 Smart Cities. A vast number of existing cities will need to be re-imagined and converted into Smart Cities. The challenges in the process of doing so are unique and will require extensive private sector investment. In this article, Karin Wanngard, Mayor of Stockholm, advises on how to transform an old city into a Smart City. (For further background, see the World Bank’s Resilient Cities Program, which reflects this conceptual shift and aims to help cities adapt to a greater variety of changing conditions and withstand shocks while maintaining essential functions.)


“The public sector is realizing the private sector brings more than just cash to the table; they bring redevelopment expertise, technological expertise, and unique forms of innovation.”

A thought-provoking read from the New York Times on an American PPP-in-progress with comments from Robert Puentes, Director of the Metropolitan Infrastructure Initiative at the Brookings Institute (and a contributor to the PPP Blog).

Lauren Herstik, January 12, 2016. “California Beach City Enlists Private Partner to Rejuvenate Pier.” NY Times.

We are all familiar with the tale of global urbanization and the demands this places on physical and social infrastructure across every region. Yet, the bulk of future urbanization will take place not in hyper- or megacities, but in small and medium-sized cities in low- and medium-income settings. In fact, the future geography of security and development will be marked by cities you’ve never heard of. What is more, the global slum population will expand from 1 billion to 2 billion people by 2040. There are tremendous opportunities in these fast-growing settings, but also unsettling risks.


IFC’s PPP team has been very active in supporting India’s solar power ambitions for many years, including pioneering numerous rooftop solar PPPs. The Government of India is now pledging to increase the amount of solar power that can be generated in the country to 100 gigawatts by 2022. That’s more than 20 times India’s current solar deployment. It’s also more than all of Europe’s solar capacity, and more than half the world’s, as of the end of last year. How can India pull it off? In a new paper published by Stanford University’s Steyer-Taylor Center for Energy Policy and Finance, researchers Varun Sivaram, Gireesh Shrimali and Dan Reicher propose a roadmap.

MONEY TALKS
THE PRICE OF EASY MONEY

Jeff Delmon

Jeff Delmon is a Senior PPP Specialist for the World Bank Group based in Dar es Salaam, Tanzania. He specializes in PPP transactions, frameworks, and financing.

"Miracle cure, works in minutes. Guaranteed!" “Eat all you want and still lose weight!” “I shed 43 pounds in two weeks and you can too!”

This approach to dieting appeals to everyone, because we all hope for the easy path. We all want the best results for the least effort.

And what requires less effort, some people think, than a PPP deal, where the investor is going to make huge profits? In a simple deal like this, why shouldn’t Government share in the pie? Why shouldn’t Government get shares in the company?

Here’s how the argument for Government equity in PPP projects usually unfolds. A share in projects is desirable:

1. To ensure that Government gets a piece of the action. This is a big investment, so why shouldn’t Government share in the bounty?
2. To maintain Government influence over the project and the sector.
3. As a mechanism for accessing company information.
4. To control and harder to forecast. Put another way, “profits are for accountants.”

But like any lose-weight-fast or get-rich-quick scheme, nothing is as fast or easy as promised. Here are four reasons that Government equity share may not be the best approach:

1. Equity investment in infrastructure is a difficult function to fulfill well. It is not just a question of funding, but rather the governance, the ability to make critical decisions in times of need, and the provision of technical and commercial support, given the complexity of an infrastructure transaction. Government often does not have this expertise. Investors know this and will make sure that the real governance structure is insulated from any Government equity holding. When they do not insulate the company, the results are usually a disaster (except for the lawyers, who always win).
2. Equity distributions (profits) are hard to control and harder to forecast. Put another way, “profits are for accountants.”
3. Private partners are likely to limit real Government control over the project as equity holders to mitigate conflict of interest and ensure that decisions are made on a commercial rather than political basis. Imagine a project where Government is not paying fees or performing activities as it is required. If the company wants to sue the Government for breach, will the Government as shareholder support this legal action? Even if the legal action goes forward, the Government as shareholder would have access to information that would prejudice the company’s claim.
4. Private partners will inevitably establish a governance structure that isolates sensitive information. In many cases this involves two board meetings: one formal meeting that includes the Government, and another informal meeting of just the private partners, where the real decisions are made.

But here is the most important reason of all: Government equity may not add value to the project. Where Government pays for its equity, then new funding is provided and earning a return for that new value makes sense. But in most cases, Government does not pay full value or indeed provide any real value for the equity share it requires.

In such cases, the investor is not going to reduce its return in order to provide equity return to the Government. Instead, it will make the project more expensive. Tariffs will increase, costs to Government will increase. The benefit to users/consumers will decrease or the Government may find it is easier and better to maintain control, gather data, and access information through regulations and regulatory powers. This is a critical function often lost in the PPP process, possibly in the hopes that the Government can avoid the expense and complexity of regulation where a private operator is involved.

The definition of profits can be adjusted to minimize tax liabilities and achieve other priorities. It is difficult for shareholders to monitor profits, and argue whether more should be made available for distribution to shareholders. In practice, the Government share may be subject to the whim of management.

Like any lose-weight-fast or get-rich-quick scheme, nothing is as fast or easy as promised.”
The quest for Government equity is often closely aligned with arguments that local investors should have an equity share. This argument uses similar reasoning, but in particular to ensure that part of the profit of the project stays in the country. Having local investors in a PPP transaction can provide a number of benefits. For example, it ensures that the investor has access to local knowledge and an understanding of how the local market works.

However, just as with Government equity, there is no such thing as free money. If the local investor is not bringing in an appropriate level of investment, technical capacity, or in-kind support, then the benefit to be earned by the local investor is, in effect, a tax on the project that will result in higher costs to users or higher availability payments from the Government—all to the benefit of the local private entity. This is unlikely to be efficient or fair, and is likely to raise concerns of unjust enrichment, corruption, and influence peddling by the local investor.

Government equity in PPP projects, or even mandated local investors, may not result in value for money. It may even undermine the project by complicating the governance of the company and increasing conflict and disputes between the Government and the investor. As we all learn eventually, when something looks too good to be true, it probably is.

REFERENCES, CONT. FROM PG 28
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However, just as with Government equity, there is no such thing as free money.