INSIDE INFRASTRUCTURE

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

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"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-ship (PPP), NFL owners are seeking both high performance and value-for-money. The league enforces an egalitarian salary cap, so evaluating players and identifying the right skills at the right price is not dissimilar to finding the right private partner while procuring public infrastructure. So what can infrastructure learn about performance from the NFL?

If determining value-for-money is essential to managing resources and fielding a competitive football team within a set budget, more sophisticated management information is required. This necessitates better data on the players themselves. In 2014, the NFL partnered with the asset management technology firm Zebra to employ a location tracking system that monitors players and officials in realtime—both on the practice field and in games—with the aim of creating new data and improving the way the American football is watched, analyzed, coached, and played. Through its partnership with the NFL, Zebra is proactively changing how performance in professional sports is evaluated. Instead of

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 programs into education facilities, emphasized early on the need for collecting data from PFI contracts to compare costs of similar assets within the government's portfolio. They knew it would play an important part in transparency, benchmarking, and measuring value-for-money. However, the PFI data collection process is too reactive, and ensuring consistency is a real challenge—often dependent on the subjective opinions of hundreds of people interfacing directly with individual assets.

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.

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.

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 differenti-

ate 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 overall 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.

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

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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.