BIZCOMMUNITY

Digitally enhanced public private partnerships

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The term technology is wide and far reaching - it refers to a plethora of things These can include manufacturing, process, and building technologies.

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This article focuses on digital technology; which is a technology is today and for the foreseeable future going to fundamentally change the way we operate businesses as well as how we develop, adopt and consume products and services. In particular, its role in public–private partnerships (PPPs).

PPPs are by nature large-scale projects that draw on a multitude of resources, including funding, skills and expertise, and innovation capability and capacity. The projects deliver public services to business and people citizens as well as value to the private industry partners. This means they have both public service delivery and business- and operating-model aspect to them. Thirdly, these projects deliver augmented capacity and capability to the public-sector partner which adds a management and governance aspect.

Digital technologies can play at least three key roles in enhancing the delivery and management of PPPs, namely; accelerating innovation, augmenting capacity and transforming business models.

Accelerating innovation

Innovation creates efficiency and value in solving a problem or creating a new product or service to meet a need. Innovation is sped up by looking at an issue from a number of angles, collaborating and testing alternatives, applying multifaceted views that support critical thinking, and employing complex problem-solving skills.

Digital technologies such as natural language processing and real-time translation play a key role in enabling these processes by bringing resources and expertise from across geographies to work on complex projects.

In the construction and infrastructure environments for example, building information modelling (BIM) is a digital platform that allows a multidisciplinary team to collaborate on projects rather that each one of them working on their own set of inputs independently.

An entire multi-disciplinary team inclusive of structural, geotechnical, electrical, surveying, IT, and building-management engineers can provide their inputs and obtain their outputs on a single building, structural, and information model and framework so that problems and issues can be proactively identified and collaboratively and innovatively solved.

Augmenting capacity

One of the most critical resources in large-scale PPPs is time. In the context of digital technologies, the focus is on how digital technologies reduce time in the implementation and operations of PPPs by providing services for informed decision-making and problem-solving at speed.

We have seen alarge number of service-delivery protests and the large costs that are associated with these. However, this is also an indication of the importance that these services have in the lives of citizens.

When it comes to augmenting the capacity to manage and operate these services, scores of technologies, including IoT, data analytics, artificial intelligence, digital twins, and virtual reality, come together to deliver predictive, proactive, and preemptive management of services.

In the airline industry, for example, the jet engine is a critical component, and service delivery – or the lack thereof – can be fatal.

Jet-engine manufacturers have now deployed sensors on the engine that obtains and sends back the data in real-time time to a central platform for consumption. The data is analyzed to identify any possible risks and to take proactive measures, such as informing the pilot on what to do or aircraft maintenance for proactive maintenance measures. The engine and flight data can be used for a number of purposes, such as pilot training or future engine development and enhancement.

As more data is ingested and analysed, machine learning can be used to inform improved autonomous-pilot applications. The real-time data can be used to inform a digital model of the engine – the digital twin – that provides a more contextual view of the engine's performance and the ways it is affected by other external factors, and well as its impact on the aircraft as a whole.

The very same process can be applied to a power station, dam wall, wind turbine.

Transforming business models

Digital technologies have fundamentally changed the way services are produced, purchased, and consumed. One of the common ways in which these services have disrupted their traditional predecessors is that they delivered a consumption-based proposition to market meaning consumers only paid for what they used.

Digital technologies have also disrupted the traditional models and introduced new consumption-based models in infrastructure businesses. In the previous example, the jet-engine supplier moved away from selling the engine to the carrier to providing a consumption-based model based on flight hours and management of the asset. This lowered the cost of purchase for the carrier, but at the same time forced them to ensure that their pilots were trained in a manner that supported the optimum use of the engine which ultimately reduced wear and tear.

The engine manufacturer moved from a capex model to an annuity-based revenue model, which gave them predictable cash flows as opposed to lumpy capex-based sales revenues.

Digital technologies can certainly play a key role in accelerating innovation, augmenting capacity, and introducing new business models for PPPs. However, the capabilities that are required to develop and deploy relevant digital applications and services must be scalable and cost-efficient.

Cloud-based platforms, deliver the scalable an on-demand infrastructure and platform requirements for cost-efficient digital-applications and services deployment.

The ability to access these centralized cloud-based platforms requires the appropriate level of connectivity. For small packet-based sensor connectivity, an IoT network such as the one delivered by SqwidNet, a DFA company, would be more appropriate, since it is purpose build for IoT.

SqwidNet's Sigfox LP-WAN network delivers low-cost, low-power, long-range, and secure connectivity and data transmission from sensors. This data is then transmitted from to the cloud-based platforms for consumption, and this is where high-speed fibre connectivity plays a critical role. High-speed fibre connectivity enables the distribution of data across platforms that may be at different locations, as well as the delivery of services across locations. Fibre also has the capacity to exponentially increase data payloads from and growing level of digital touchpoints.

As DFA, we deliver the high-speed fibre capacity through an open-access model, thus making it possible for IoT-network providers as well as cloud-platform providers to supply their services more widely and cost-efficiently. This ensures that these services are, affordable, available and accessible to users.

ABOUT THE AUTHOR

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