With a spiralling infrastructure deficit to address over the next two decades, building trust and connectivity with stakeholders is more important, and challenging, than ever before, writes InstarAGF’s Gregory Smith

The promise of infrastructure

In a funding-constrained era where our infrastructure challenges are increasingly intricate and urgent, enormous creativity is demanded in the design, financing and delivery of essential infrastructure for the 21st century. In our fast-changing world, as much as 75 percent of the infrastructure we will require globally in the next 30 years has yet to be built, or in some cases, even imagined, according to Global Infrastructure Basel, which promotes sustainable and resilient infrastructure solutions.

Infrastructure touches every aspect of how we live, which makes investing in it an economic and social priority. In North America, every 1 percent increase in spending is estimated to have an economic multiplier of up to 1.7x, enhancing overall productive capacity and competitiveness, creating jobs, enabling social cohesion and reducing inequality.

At the same time, our infrastructure is struggling to adapt to shifting patterns of consumer use and expectations, urbanisation, sustainability imperatives and new technologies. It is no exaggeration to say that these trends are fundamentally redrawing society.

They affect how we perceive ownership of infrastructure and other community assets. They cause us to question our notions of identity, both collective and individual. They challenge convention and, in some cases, redefine ethical boundaries.

Looked at one way, these forces could eventually turn us against each other, instilling in people and our communities a sense of alienation and uncertainty. Looked at in another, these same forces, if harnessed properly, also have the capacity to bring us closer together and create new hubs of social and economic progress that coalesce to form a unique expression of community. Simply put, that is the role and promise of infrastructure in the 21st century.

The infrastructure of tomorrow

Over the past 15 years, a significant proportion of the world’s infrastructure has transferred in ownership to private investors and partners, which on balance has been constructive for infrastructure quality and abundance. But the playbook for infrastruc-
The global financial crisis brought a heightened awareness of risk to most industries, and greater scrutiny – and expectations – of both public and private sector institutions. In leaving a deep imprint on the economy, financial markets and our social fabric, it has also informed our politics and how we think about opportunities, risks and equality in our communities.

Furthermore, the very complexity of our communities, which are largely urban in scale, and the challenges they are confronting today mean that old ways of doing things, no matter how successful they were in the past, are ineffective at best and detrimental at worst. Urban planning is becoming more diverse in the needs it must address while being tasked to use fewer resources to deliver a better quality of life. At the same time, climate change pressures are undeniable with rising global temperatures and worsening extreme weather events. Finally, technology, including social media and the democratisation of information, has completely altered the rules of engagement in all facets of life along with expectations for transparency and accountability.

Against this backdrop, successful infrastructure investors in the next decade will be those that commit to earning a social licence to operate. Broadly, environmental, social and governance (ESG) considerations are increasingly factored into investment objectives and strategies. In a recent study by PricewaterhouseCoopers, 81 percent of private capital respondents had adopted a responsible investment (RI) policy and more than a third had established an in-house RI team, up from 27 percent in 2016.

A mix of ESG factors are inherent in the development and delivery of essential infrastructure: land acquisition, use and resettlement; provision of essential services, such as water and energy; and environmental impact, among others. Yet for many infrastructure investors, the social element of ESG has historically been the least considered component. This is likely to be due to the challenges involved in quantifying social issues – an endeavour that can be more of an art than a science – or because the process of ‘S’ has been viewed merely as a compliance step for regulatory or approval purposes rather than as a value driver.

So what does this all mean for how we approach the infrastructure of tomorrow?

**Engaging with citizens**

Historically, many infrastructure projects have fallen short by adding the community to the dialogue too late or managing the interaction superficially with an undue focus on inputs rather than tangible outcomes. To capitalise on the promise of infrastructure, we need to win the hearts and minds of citizens and work together to develop the definition of value. At the same time, communities are demanding more involvement in decision-making around infrastructure development and operation, and expect to receive a greater share of the benefits.

Citizens also rightly expect infrastructure to enhance the overall community experience, create a distinctive sense of place, and reinvent and beautify public spaces in a manner that elevates quality of life and generates tangible socioeconomic opportunities.

**Placemaking: Vancouver’s Creative Energy**

An example of infrastructure engagement is Vancouver’s Creative Energy, a community energy company that is planning to modernise the city’s downtown district energy system by switching the fuel source from gas to wood waste.

This initiative will reduce greenhouse gas emissions (GHG) in the city of Vancouver by 80,000 tonnes – the equivalent of removing 14,000 vehicles from the road. Apart from its environmental merits, this new facility will reimagine and ‘daylight’ physical infrastructure as a cultural landmark by painting everything within the building green and enveloping it in a glass-enclosed farm that will rise above the boilers and repurpose both waste heat and carbon dioxide.

In addition to cutting GHG emissions, this neighbourhood energy system could also produce 400 tonnes of fruit and vegetables per year – enough to feed 10,000 people. Such multi-use projects can help to meet social, economic, environmental, energy and community needs all at once.

Our ability to shape a better future for the next generation requires a new kind of social licence and commitment to create, unlock and truly share the value of infrastructure. Excelling on the ‘S’ is becoming more important than the ‘E’ and the ‘G’ combined. Indeed, the social contract that is implicit in infrastructure – an essential asset that serves all members of a community – means our industry must engage with stakeholders both more deeply and broadly if we are to bring new purpose and progress to persistent problems. This “infrastructure engagement” has the power to transform our communities, our economy and the environment.
Toronto's StART Underpass Program, for example, transforms selected underpasses in the city with vibrant murals and public art. Similarly, the city's Underpass Park reclaims the space beneath a busy expressway with street art, a basketball court, skate park and other recreational structures.

Such efforts to bring artistic expression to infrastructure development recall the first public art programmes launched in the US during the Great Depression as part of the New Deal, and aimed at building morale, creating jobs and reducing crime. While art itself cannot change everything, its effect can be undeniably profound. Infrastructure engagement, bringing beauty to infrastructure's physical form and function, can provide a new way to experience a community, foster civic pride and connect citizens in an inclusive way that might cause them to think differently about themselves and, ultimately, even about the world.

**Engaging to source innovation**

Infrastructure engagement that focuses on the 'S' part of the ESG equation fosters an ecosystem of shared value for investors and communities. Indeed, failing on the 'S' factor with citizens, politicians and regulators can have costly, material consequences, both financially and reputationally. The delay or deferral of major energy and pipeline projects in North America in recent years clearly demonstrates the risks and massive expense of failing to understand, communicate and manage infrastructure's social footprint.

Social media is dramatically changing the stakes for infrastructure development. According to Statista, there are more than 357 million social network users in North America, representing more than 60 percent of the population, which has significant implications for bringing forward new infrastructure projects. Social media can be a tool or a weapon, capable of catalysing people around a common goal or of amplifying perceived risks, which can alter a project’s outlook or the tone of its narrative.

Similarly, the potential for social media platforms to be used to promulgate misinformation and suspicion has acted as an accelerant for populism in North America and elsewhere, a divisive and growing political phenomenon affecting all aspects of civic discourse and further complicating infrastructure development. This includes raising questions over the future role of private companies or investors providing essential public services such as electricity and water.

Regardless of how much an infrastructure project may benefit a community, its perceived value and success relies in large part on whether local citizens support it and feel heard in the process. Social and environmental impact studies have long been part of the development process but have often been cursory in nature.

Instead, such analyses must be comprehensive and systematic elements of the infrastructure investment process. Stakeholder communication can no longer be a one-way missive or messaging exercise: it must be a true dialogue with proponents and detractors alike to discern areas of concern and opportunity.

Importantly, community stakeholders can be a source of innovation for new infrastructure design, helping to identify additional value that may already exist within a structure or system, or that could be generated through more creative visioning.

In Canada, Evergreen, a national not-for-profit that aims to sustainably transform urban spaces, is helping to identify new housing opportunities in Toronto for low-income residents in the city's 300km system of laneways, an untapped resource for infill housing. The organisation has also recently launched a Future City Builders programme that brings youth together to devise and launch innovative ideas in water, transportation, housing, waste and urban food systems. Such initiatives showcase infrastructure engagement at its best.

Overall, by keeping infrastructure end users in mind we broaden our understanding of infrastructure's value and can deliver innovative solutions that promote a community's social objectives beyond the built environment. And investors that get this infrastructure engagement right will contribute to meaningful community progress while finding economic opportunities that their competitors miss.

**Engaging technology to build trust**

New technology development has surged in the last decade and will continue to change in rapid and unpredictable ways, potentially putting it at odds with infrastructure's long lifecycle. Infrastructure systems remain among the least digitally transformed in the entire global economy. Many have been designed, built, operated and maintained in the same way for decades despite huge technological and innovation gains, engineered with 50- to 100-year lifespans geared for yesterday's needs rather than tomorrow's requirements.

Technology has significant promise for infrastructure development and can work in tandem with community engagement to better visualise and plan new infrastructure. It can enable new, more sustainable building practices and materials, or lower costs and improve efficiency through data analytics. It can also elevate how citizens interact with and experience infrastructure.

Certainly, the capacity for billions of people to be connected by mobile technology with extraordinary processing power, memory and access to knowledge creates endless possibilities that will only further proliferate with emerging breakthroughs in artificial intelligence, autonomous vehicles, smart cities, robotics and energy storage, among other areas of innovation.

New technologies and platforms are enabling citizens to engage with their
The tech debate: Toronto’s Quayside

The breadth and depth of technology changes will utterly transform society and our infrastructure, including how both are governed and by whom.

In Toronto, the Quayside project, a partnership between Google’s Sidewalk Labs and the city of Toronto formed in 2017, proposes to develop a 12-acre section of Toronto’s eastern waterfront. Originally conceived as a ‘smart city’ tool to address Toronto’s housing affordability, climate change and transportation issues, the controversial project has raised concerns about privacy, surveillance, data harvesting and transparency.

While Quayside clearly has the potential to help Toronto with the challenge of city-building, it has also ignited debate about what kind of development citizens want and the issues and protections that are important to them.

governments, express opinions and organise their efforts, yet raise questions about data security, residency and privacy as regulation and policymaking fall behind the pace of change. Our increasing digital interdependence creates opportunities for growth but also the potential for abuse and unintended consequences.

Technology empowers our shared economy and connects communities in new ways. But it can also breed a sense of distance or dislocation and potentially erode our capacity for cooperation and empathy, two values that are essential to getting the ‘S’ right. In this context, it is important to remember that a social licence can never be self-conferred but requires community consent and, above all, trust.

Engagement in the decade ahead

Reflecting on how infrastructure could evolve in the next 10 years, I’m reminded that studying the past is how we will define the future.

Growing up in Saskatchewan, known as Canada’s breadbasket, I was surrounded by an agricultural community characterised by co-operatives of farmers working together to purchase machinery and stock, improve product and service quality, and reduce risks. This tradition demonstrates the substance, meaning and value of collaboration, and how it ultimately tips the balance in favour of community progress and wealth. It also informs how I think about infrastructure investing and engagement – it is fundamentally about empowering people and communities.

The past decade has taught us that in the next we must be more inclusive in how we design, finance and deliver infrastructure projects. We must bring bolder leadership to the task of infrastructure engagement and a longer-term, more open mindset on what constitutes value for investors and communities.

As renowned urbanist and social activist Jane Jacobs once observed, cities have the capability of providing something for everybody only because, and only when, they are created by everybody. Capitalising on the promise of infrastructure will be challenging but not impossible if we can collectively expect more of ourselves and master the art of the ‘S’.

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