In conversation with the Hong Kong Development Bureau: Working to develop a digital strategy for better infrastructure delivery – ICE Presidential Roundtable Summary

March 2023

Background

Globally, the cost of delivering infrastructure projects is growing quickly due to the rising costs of energy, labour and materials. This is a challenge for governments who need to deliver improvements to the infrastructure system to achieve wider strategic goals, such as economic growth, decarbonisation and climate adaptation.

In many countries, governments are already facing decisions about whether to scale back or delay projects. Improving productivity is therefore critical to help maximise investment and mitigate the risks from inflation to infrastructure pipelines.

Digital technology is vital for enabling infrastructure delivery to be more efficient. It can help reduce construction time and costs as well as improve the performance and management of existing infrastructure.

The ICE convened an online roundtable with the Hong Kong Development Bureau (DevB) and global infrastructure professionals to discuss Hong Kong's digitalisation strategy, the wider opportunities of digital tools for infrastructure systems, and the challenges governments may face to unlock them.

Recap: In 2018 the Hong Kong government launched its Construction 2.0 initiative to improve its construction performance. In 2021 it began a programme to drive the digitalisation of public works, with the aims of improving efficiency, productivity, safety and sustainability and driving innovation. The government has developed an integrated Capital Works Platform which utilises digital tools, including the Digital Works Supervision System, to monitor the progress and performance of its Capital Works Programme.

Key discussion points

- Hong Kong has developed a digitalisation strategy for public works to raise productivity and deliver an ambitious infrastructure pipeline at a time of rising costs and labour shortages.
- Hong Kong's experience shows the benefits of government leadership in setting a clear agenda and engaging and collaborating with the supply chain to drive adoption of new tools and methods.
- However, there may be additional challenges in other regions where digitalisation is less mature or contractors more resistant to adopting new ways of working.
- An uptake in digitalisation is likely to have wider benefits, such as smarter management of existing infrastructure systems and assets, as well as risks, including privacy and data-protection.

Hong Kong's infrastructure ambitions

Hong Kong's construction industry demonstrated its adaptability during the Covid-19 pandemic, continuing to deliver key projects. Construction output was around HK$235bn last year and is expected to rise to HK$300bn this year.

It has a huge construction volume but is now facing similar delivery challenges to many other countries. Its labour shortages are being driven by its ageing workforce. The acute impact of inflation means Hong Kong is currently the most expensive place in Asia, and eighth worldwide, to deliver infrastructure.

As an island city-state with limited room to expand, the government is keen to accelerate land reclamation and residential development projects, such as the Kau Yi Chau artificial islands and Northern Metropolis programme.

Lessons for implementing a digital strategy

Hong Kong developed a programme to drive the digitalisation of public works to help it deliver this ambitious infrastructure pipeline.

One of the main challenges governments face in implementing new requirements is ensuring the supply chain adopts them, particularly if they are perceived as complex, onerous or expensive. Hong Kong has taken a staged approach to implementing its digital programme, starting with large (HK$300m plus) contracts.

Communication and collaboration with contractors have been key. DevB has provided training and technical circulars for suppliers to understand the tools and technologies. It also built the cost to the suppliers of the new capabilities into the public works contracts, viewing it as an upfront investment for the government that would benefit delivery and performance in the long-term.

Many large contractors have now adopted the changes, but ensuring the new tools trickle-down further into the supply chain will be a longer-term process.

Hong Kong's experience shows the benefits of government leadership in setting a clear agenda and driving supply chain adoption. However, digitalisation is at different levels of maturity around the world. In some countries and regions it could be more difficult for governments to convince contractors to invest in new technologies and implement new requirements.

Wider opportunities and future challenges

Hong Kong is only beginning to measure the outcomes from its digitalisation strategy. The lessons learned will be useful for other government looking to make better use of digital tools in infrastructure systems.

Attendees discussed some of the potential wider benefits of an uptake in digitalisation. These include the potential for enabling more joined-up management and decision-making across infrastructure systems.

However, there are wider questions that will need to be addressed by policy makers and industry about how the data gathered through digitalisation is managed and used. For example, the data could be shared with contractors to help them benchmark and improve their performance. But uncertainties were noted around data-protection and privacy. In Hong Kong this is one area which is likely to require policy changes, which are currently being examined.

Questions to take away

- How effective is digitalisation at improving productivity in infrastructure delivery? And what are the wider benefits of digitalisation beyond the delivery phase – such as management of existing infrastructure assets, and integration of infrastructure systems?
- How can governments best implement digitalisation in places where there is more resistance from industry?
- What are the policy implications linked to digitalisation that still need to be addressed, such as data-protection and privacy?