ISSN: 2599-1086 | e-ISSN: 2656-1778 | Vol. 4 | No. 1

Improving Governance in Major Infrastructure Projects

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ABSTRACT

From an economic growth perspective, infrastructure is not only an enabling factor for development or for facilitating private investments and competitiveness across all sectors of national and regional economies, but can also be an attractive investment opportunity in itself. Although infrastructure investment opportunities are plentiful across developing countries, investors are not fully seizing them, often due to gaps in the enabling environment for such investment. The infrastructure sector presents specific risks to private investors, and since private participation in infrastructure delivery is a relatively recent form of procurement in many countries, governments do not necessarily have the experience and capacity needed to effectively manage these risks. Beyond case-by-case project preparation and financing, concrete, implementation-oriented guidance that can help governments identify and manage reforms is needed to make the broader infrastructure investment environment more open to private participation.

Keywords: infrastructur investment, private investors, infrastructur sector

SARI PATI

Artikel ini membahas tantangan, peluang, dan panduan konkret untuk membuat lingkungan investasi infrastruktur yang lebih luas dan terbuka bagi partisipasi swasta. Infrastruktur tidak hanya menjadi faktor pendukung pembangunan, fasilitas bagi investasi swasta, maupun menjadi daya saing sektor ekonomi nasional dan daerah, melainkan juga peluang investasi yang menarik. Sayangnya, sekalipun peluang investasi infrastruktur di negara berkembang berlimpah, investor belum sepenuhnya memanfaatkannya. Penyebabnya antara lain, sektor infrastruktur memiliki risiko khusus bagi investor swasta dan partisipasi swasta di bidang ini relatif baru sehingga pemerintah belum tentu memiliki pengalaman dan kapasitas untuk mengelola risiko investasi ini secara efektif.

Kata Kunci: investasi infrastruktur, investor swasta, sektor infrastruktur

CHALLENGE

What matters to governments around the world, and to the citizens they represent, is having in place high-quality infrastructure that supports the delivery of effective public services – in transport, education, health, culture, or any of the myriad of policy areas that affect people`s lives. Up to now, much of the debate on infrastructure has focused directly on the financing challenges – how to raise funding for infrastructure projects, by using national levers and accessing international markets – whereas the broader public governance dimension has been neglected. Poor governance is a major reason why infrastructure projects fail to meet their timeframe, budget and service delivery objectives. Public investment is generally a shared responsibility across levels of government.

Whether it is through shared policy competencies or joint funding arrangements, public investment typically involves different levels of government at some stage of the investment process. There are important challenges at both the national and subnational level to catalyze sufficient regulatory capacity to oversee the performance of infrastructure service delivery.

PROPOSAL

In this context, the government has focused on the efficient delivery of public services, rooting out corruption and black economy, formalizing economy and expanding tax base, improving the ease of doing business, nursing the stressed commercial banking sector back to a healthy state, and stopping leakages through direct benefit transfers. It is our hope that this new approach will provide an inventory of readily implementable measures for the government departments and agencies both in the central and state governments. The attempt is to present a set of ideas that can provide the basis for a constructive public-private-personal partnership and promote center-state cooperation. Cities should dedicate a single-window facility for the urban poor to access basic services such as water supply, drainage and sewerage, and affordable housing in the form of dormitory and rental housing. Urban poor communities and slums, benefitted by area-based development (ABD) or pan city proposal (PCP) solutions, should be mapped in conjunction with improvements in parameters such as access to public assets and service deficit reduction including in the areas of education and health.

1. Pan City Proposal (PCP) or Smart City Proposal:

We need to build increased resilience into cities in anticipation of increased exogenous and endogenous pressures on their interconnected urban systems. A green recovery is about fiscal recovery while also improving societal resilience by transforming an economy through actions grounded on environmental sustainability.

Leveraging a green recovery to achieve resilient cities:

Urban resilience is the ability of an urban system to restore function after a shock or disturbance and withstand stresses over time without compromising the integrity of its system as a whole. We also acknowledge the conceptual tensions inherent in the term resilience as outlined by (and adopt) their definition: Urban resilience refers to the ability of an urban system and all its constituent socio-ecological and socio-technical networks across temporal and spatial scales to maintain or rapidly return to the desired functions in the face of a disturbance, to adapt to change and to quickly transform systems that limit the current or future adaptive capacity. When urban resilience is defined in this way, it has several Implications:

Diversity, availability and distribution of transportation modes across a community and specifically greater walkability is knownto improve community resilience in cities. To build adaptive capacity in cities, there is a need to transform governance to become

more participatory, involving multi-level and multi-actor dimensions through the co-design processes in policy development.

Urban mobility can and needs to change: There is a large body of research focusing on the reduced travels resulting from the pandemic and associated restrictions on movements, and its impacts to improve urban air quality.Urban form and housing need to provide public benefits. There are important insights on how urban ecosystem services help to mitigate the spread of disease Many papers have noted the connection between urban form and demographics and the spread of the virus and conclude that there are specific strategies to reduce the risk of future pandemics, such as enabling telework, ensure greater use of artificial intelligence in the built environment to create touchless technologies, promotingmedium-density buildings rather than high-rise to reduce crowding, especially associated with socio-economic inequalities. In order to implement a green recovery in cities, urban planning needs to consider making green urban places more available and accessible. Reviewing what makes up quality green urban place must also be studied.

Production and supply chains need to be more resilient.In terms of production, there is a sense in several papers that the pandemic has created an awareness of urban vulnerabilities and therefore caused a shift towards greater self-sufficiency and reduced footprints at a national and city scale, with an expectation of reduced reliance on global supply chains. There is also a strong argument provided that we can expect a dramatic increase in digital usage impacting on all aspects of work and life.

Pathway:

1. Leverage mobility innovations towards net-zero urban mobility systems.
2. Implement regenerative urban designs.
3. Suburban regeneration for increased urban density and walkability.
4. Nature-based solutions from district/ precinct to city scale.

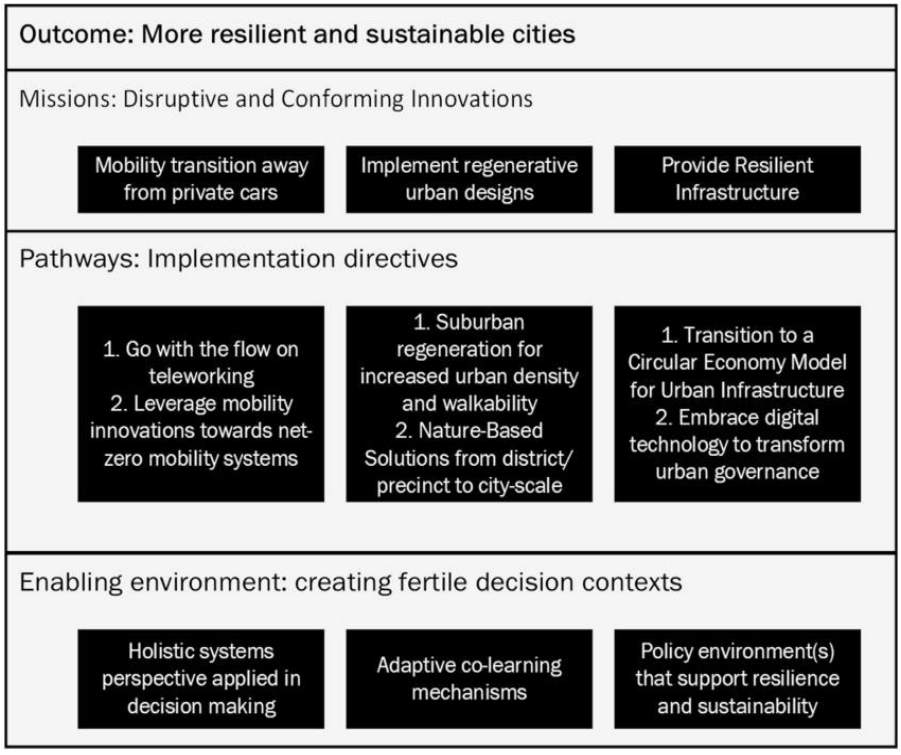

Figure 1: - Theory of Change towards a resilient city.

5. Provide resilient infrastructure.
6. Transition to a circular economy model for urban infrastructure.
7. Embrace digital technology to transform urban governance.
8. Creating supportive decision contexts.

Key Urban Development Missions in India G20 Nation Should Follow :-

1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
2. Pradhan Mantri Awas Yojana (PMAY) – Housing for all (Urban)
3. Smart Cities Mission (SCM)
4. Swachh Bharat Mission (SBM)
5. Heritage City Development and Augmentation Yojana (HRIDAY)
6. Deen Dayal Antyodaya Yojana – National Urban Livelihood Mission (DAY-NULM)

2. Health Proposal:

The need to address this gap gains relevance in light of the COVID- 19 pandemic.

- Health security is often seen as 'state security' not 'Human security'
- It is a promising, yet underdeveloped, research base which demonstrates how specific improvements/investments in health systems and health system building blocks can enhance long-term health security. According to the World Health Organization (WHO), health security related to the activities required, both proactive and reactive, is needed to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.

Implications:

1. Prioritizing health security over health systems,
2. Tendency to treat health security as exceptional,
3. Tendency to focus on acute health emergencies,
4. Focus on 'the south' and LIC/LMICs as the source of the global health security'problem',
5. Under representation of NCDs,
6. Practical examples of strengthening the building blocks to achieve greater health security,
7. Adequate leadership and governance,
8. A well-functioning health information system,
9. A well performing health workforce,
10. Access to essential medical products, vaccines and technologies.

In relation to access to essential medicines, the example of Indonesia was again noted in the literature as representing innovative linkages between health security and health system development, where affordable access to essential medicines was a priority within its National Health Insurance System, providing lessons as the world's largest single-payer scheme.

3. Digital Education:

Digital education is a complex multidimensional topic that includes not only elementary, secondary, and tertiary education, but also the delivery of education both through and on digital technologies to all ages and competences within communities, from early learners to older adults. This chapter outlines the rationales, benefits and challenges associated with digital technologies in education., It also discusses how digital education might be measured in the context of rural towns.

Formal education is hierarchically structured and typically chronologically graded from early childhood education and care, primary and secondary education, post-secondary non-tertiary education, through to tertiary education.

Generally, access to digital technologies in education focuses on mainstream technologies. In addition to learning about these technologies,

Technology entry level	*Description*
Objectives of learning for students and educators	Hard and soft digital skills, competences, and specific ICTs are increasingly part of the curriculum, education standards, and competency frameworks for primary, secondary and tertiary education, and are widely available through non-formal education providers.
Tools to support student learning	Digital technologies are key tools to support learning in the classroom, school, home or other locations e.g., libraries. These technologies include general ICT, multimedia materials, multi-tasking and interactive environments, gaming and simulations, and collaborative and Web 2.0 environments, amongst others.
Tools to support educators	Digital technologies can be integrated into teaching practices to enhance learning both inside and outside the classroom. In addition to those being used with students, educators are using technologies to communicate with parents and other stakeholders, prepare lessons, and for personal development, knowledge sharing, networking and collaboration, amongst others.
Tools to support the management of educational institutions or systems	Beyond the specific learning experience, whether in the classroom or online, digital technologies are being used to manage educational institutions and systems. The use of digital technologies is widespread for operational planning and management, data management and decision making, marketing and stakeholder communication.

***Digital technology entry points in to education systems.**

with the exception of Nano technologies and gene editing, education applications for frontier technologies abound.

Increased use of digital technologies is a cornerstone of national and international education policy. A wide range of rationales and potential benefits emanating from digital technologies are cited in policy and scholarly works, largely reflecting those presented.

Despite the general enthusiasm regarding the potential benefits of digital technologies in education, there are significant challenges to digital adoption and usage in education. Access is a multi-layered challenge which includes both access to digital education providers and access to digital technologies. Secondly, while there has certainly been an increase in access to digital technologies in formal education, neither access nor adequacy is uniform internationally. Even if learners or educators can access digital technologies at their institution, they may not have such access or an internet connection at home, particularly if they are socio-economically disadvantaged orfrom rural areas.

Similarly,Eurostat's Digital Economy and Society statistics suggest that 10% of the EU-27's population in 2019 had never used the internet. Skill levels are a significant factor in the use of digital technologies for learning, not only for adults but also for younger students. While digital technologies present numerous benefits, not least the flexibility of time and location-agnostic learning, it potentially excludes parts of the population, young and old, with limited or no access to technologies or with low or non-existent

ICT skills. A number of studies have found that successful adoption of digital technologies in education requires strong leadership, an emphasis on the connection between pedagogical aims and digital technologies, school-wide adoption of the digital technologies, a focus on the process, and collaboration with external partners. Finally, and most importantly from an education perspective, evidence of a positive relationship between access to and use of digital technologies in education and learning outcomes remain inconclusive or weak at best. For example, while a greater 7 DIGITAL EDUCATION 142 proportionof those employed in the EU ICT sector have tertiary qualifications, the percentage of women employed in the EU with an ICT education has declined from 20.2% in 2009 to 17.3% in 2019.

International data on digital education is not collected consistently for each of the levels identified–access, digital skills, competence and use, and outcomes. Indeed, common challenges in measuring digital education include:

1. "Fuzzy Boundaries" between technologies, education levels, and domains, and gradations in access, usage, competences and skills.
2. Self-reporting of data.
3. Frequency of data collection and reporting.

Technology	*Description*
Social	Digital technologies in education help to prepare citizens to participate and function more fully in a society permeated by digital technologies (Hawkridge, 1990; Kozma, 2008; Office of Educational Technology, 2017; Spires, 2018; European Union, 2020).
Accessibility	Digital technologies can increase accessibility to education for those who may be disadvantaged and vulnerable in society thereby reducing inequalities in society (Hawkridge, 1990; Burgstahler, 2003; Bocconi & Ott, 2011; Seale, 2013; Khetarpal, 2014; Wagner, 2018).
Pedagogical	Digital technologies can support educational reform and enhance teaching and learning (Hawkridge, 1990; Kozma, 2008; Office of Educational Technology, 2017; Peterson et al., 2018; OECD, 2020; European Union, 2020).
Vocational	Digital technologies in education can prepare citizens to work in a society permeated by digital technologies (Hawkridge, 1990; Kozma, 2008).
Sustainability	Digital technologies in education can help promote environmental sustainability and the use of advanced technologies to address climate change (EU, 2020).
Quality of service	Digital technologies in education can reduce the costs of educational delivery and increase the range, quality and efficiency of educational institutions and the quality of educational management (Kozma, 2008; Wagner, 2018; Foutsiki & Caridakis, 2019; OECD, 2020).
Catalytic	Digital technologies in education can act as a catalyst for other innovations (Hawkridge, 1990; Kozma, 2005).
Economic	Digital technologies in education can contribute to greater economic growth and employment, including meeting demand for labour (Kozma, 2008; Anderson, 2008; World Economic Forum, 2015).
Reactive	Digital technologies in education can ensure continuity in response to a crisis (Bergdahl & Nouri, 2020; Daniel, 2020; World Bank, 2020).
Opportunistic	Digital technologies in education can differentiate an educational institution from its peers and make it more attractive to stakeholders (Foutsitzi & Caridakis, 2019).

*** Rationales for adopting digital technologies in education**

4. Maintaining pace with technological change.

As is evident in this chapter, research focuses significantly on secondary level education without addressing the dearth of data on early childhood education, primary education, as well as other non-formal and informal education and training provisions. Where education is included in general digital economy and society frameworks, it typically focuses on internet access and computer availability in schools. Despite the important role that education plays in both society and economies, many of these general frameworks do not include education at all—as is the case, for example, with the EU Digital Economy & Society Index.

Themes	*Description*	*Selected sources*
Access	Availability and access to digital technologies (incl. the internet) by learners and educators where educational activity occurs including at educational institutions and at home.	Eurostat, EU Survey of Schools: ICT in Education, ITU, Partnership on Measuring ICT for Development, PISA, TALIS, UNESCO Institute for Statistics (2009).
Enrolment	Enrolment in ICT-related courses or fields.	Eurostat, Partnership on Measuring ICT for Development, UNESCO Institute for Statistics.
Employment	Employment in the ICT sector.	EU Survey of Schools: ICT in Education, Eurostat, ILO Labour Force Survey.
Educator professional development	Provision and need for training on digital technologies in general and for teaching.	PIAAC, TALIS, UNESCO Institute for Statistics.
Equity	Access to and use of ICT for education purposes and relative proportion of female graduates in ICT-related fields.	UNESCO Institute for Statistics.
Digital competence, self-efficacy and skills of learners	Learner competence, self-efficacy and skills using different technologies and performing related tasks.	Eurostat, EU Survey of Schools: ICT in Education, PIAAC, PISA, TALIS.
Digital competence, self-efficacy and skills of educators	Educator competence, self-efficacy and skills using different digital technologies and performing related tasks for and in teaching.	EU Survey of Schools: ICT in Education, PISA, UNESCO Institute for Statistics.
Institutional guidelines and practices for the use of digital technologies	Documented guidelines and policies, and organised programmes on appropriate behaviour and use of digital technologies in general, for pedagogical purposes or in specific subjects.	EU Survey of Schools: ICT in Education, PISA, UNESCO Institute for Statistics.

Themes	*Description*	*Selected sources*
Institutional capacity to enhance teaching and learning using digital devices	Adequate digital infrastructure, technical and pedagogical skills, support staff, time, and incentives to enhance teaching and learning.	PISA, TALIS, UNESCO Institute for Statistics.
Parents	Parental attitudes and support for digital technologies in education.	EU Survey of Schools: ICT in Education.
Use	Incidence, intensity and patterns of digital technology use by learners and educators for educational activities.	EU Survey of Schools: ICT in Education, Partnership on Measuring ICT for Development, PIAAC, PISA, TALIS.

***Common themes and selected data sources for digital technologies in education**

4. Digital Town Initiatives Proposal:

At the same time, without the right incentives and policy interventions, rural areas could miss out the benefits of the ongoing technological revolution and would further widen inequalities." This chapter continues the discussion of enabling conditions for digital towns with a specific focus on the governance of digital town initiatives. The promise of digital town initiatives are multifaceted, including improved economic growth, population growth, better quality of life and, in the context of local governance, potential increased engagement in digital town initiatives and more open town governance .

However, not standing with the multiplicity of initiatives that might be characterized as elements of "digital town plans", and the spectrum of activity from local community initiatives, to town-driven, to "stakeholder/ town", to more state and national government initiatives, these is relative scarcity of work which evaluates program outcomes in systematic way.

This failure to systematically evaluate programs and policies characterize many aspects of local and national policy. The experience of existing digital town initiatives suggest that digital towns require a broad concept of community governance that involves multi-agency works and self-organizing networks that cut across organizational and stakeholder boundaries while digital technologies can lead to better town governance. This is a distinction between the content of governance. For example, in this context, outcomes such as increased digitalization, and the process of governance, would increase civic engagement of citizens and stakeholders in the development of digital town plans. Initiative Digital technologies can also aid in increasing stakeholders' involvement in digital initiatives, and improved digital public services are just one outcome that is an indicator of the Digital Town.

Delivery on complex and multifaceted policy objectives such as town digitalization can be considered from the perspective of town governance as an organizational or managerial challenge of how to organize and coordinate across a diverse range of stakeholders, including town governance structures. Furthermore, in these more complex and process-orientated forms of governance, the focus is on inducing

actors to engage in multi-actor actions, without one person or organizations in control.

The changes involved in moving towards a digital town may reflect a process of incremental changes in town governance, or in some instances it could involve more fundamental and transformative changes to governance structure. Not standing with the case for new forms of governance, there are strong arguments that in many multi-level systems of governance, at least the key decisions remain within centralized structures or alternatively the multi-levels separate, losing the elements of integration across actors.

- Community resilience emerges from four primary sets of adaptive capacities:Economic Development: The degree of resource volume and diversity, and resource equity and social inclusion within a community.
- Social Capital: The strength of network structures and linkages, social support, and community bonds, roots, and commitments within a community.
- Information and Communication: The systems and infrastructure used to inform the Public, and the presence of communal narratives that give the experience shared meaning and purpose.
- Community Competence: The ability of

Dimension	*Definition*	*Characteristics*
Horizontal integration	• Inter-relations among members of local communities in terms of social ties, collective action, and responsibility; neighbourhood ownership and sense of place; resource mobilisation; and awareness of disaster vulnerabilities and community assets • Relations between local citizens and organisations, including emergency services, schools, churches, non-governmental and nonprofit organisations, associations, boards of business, Chambers of Commerce, and community groups.	• Institutional mandates incl. Positions accessible to citizens, formal outreach plan, publicised meetings, and regular progress reports. • Representation and scope incl. Local participation in committee formation and membership criteria. • Role of technical expertise in encouraging participation incl. Facilitation of public engagement and reflection of public opinion. • Contribution of the final output (plan) to participation incl. commitment to public engagement and local capacity building. • Alignment of professional expertise and local needs.
Vertical integration	• Connection and access to political, social, and economic institutions and agencies, which may facilitate the flow of resources and adjusting policies in response to disasters and in anticipation of possible future risks.	• State (Regional) leadership. • Encouraging stronger vertical ties by Program Design. • Facilitating upward flow of information incl. Independent organization and mandated/ required upward flow. • Engendering active citizen influence incl. local participation in risk identification, public input prior to final projects, and project evaluation.

***Definitions and selected characteristics of horizontal and vertical integration**

the community to participate in collective action and decision-making with collective efficacy and empowerment.

Horizontal integration refers to integration across different elements of policy making, and across policy and other stakeholders, typically those regarded at the same level of governance but with different responsibilities and objectives. In this respect, online town portals and platforms have been cited as key components in digital town projects

The governance of digital town initiatives is not only dependent on incremental changes within existing governance structures, but also requires engagements with a broader range of stakeholders, such as the external policy and government bodies as well as local stakeholders, which result in new forms of governance of projects and initiatives.

This lack of measurement frameworks may be explained by a combination of the nascence of both the digital-town literature and the non-disaster community resilience literature, along with the relative complexity in translating digital town governance,including vertical and horizontal integration and the adaptive capacities proposed.

Dimension	*Indicator title*
Organisation	Cross-departmental integration. Establishment of leadership and resources within the administration. Monitoring and evaluation of compliance with smart city requirements. Availability of government data.
Community involvement	Citizen participation in projects. Open public participation. Voter participation in municipal elections.
Multi-level governance	Strategies and Policies: Smart city policy. Budget: Expenditures by the municipality for a transition towards a smart city. The extent to which the city cooperates with other authorities from different levels.

***City Keys governance dimensions and indicator.**

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