## Chapter 10

# Information and Communication Technology as Key Infrastructure for Sustainable Cities:
## The Open City Portal Approach of Nigeria

**Motoo Kusakabe**
*Ritsumeikan Asia Pacific University, Japan*

**ABSTRACT**

*The 'Sustainable cities' initiative has been widely accepted as a participatory development initiative to achieve environmental and social goals. In the cities in developing countries with a severe constraint in their capacity for participatory planning, a potentially effective way to build 'sustainable city' initiative is to use an e-government portal designed to support citizens' participation in planning and monitoring processes and knowledge sharing among participating cities. In the Nigeria Delta region, 23 local governments were chosen to pilot this initiative. This region has been suffering from weak local governance and protracted youth unemployment caused by 'youth bulge' that led to severe social unrest. In such circumstances, this pilot had a strong focus on enhancing local governance and job-creation among young people in knowledge-intensive industries, particularly using information and communication technologies. This chapter investigates positive and negative sides of this approach using the cross-country and city-level survey data.*

**INTRODUCTION**

The 'sustainable cities' initiative has been widely accepted as a holistic framework for participatory

sustainable development operational at city level to achieve environmental, economic and social goals. It has been widely adopted by European, Japanese and North American cities as the basic guiding principles for a sustainable development strategy. With its three unique aspects – a bottom-

up, locally-driven initiative; participatory agenda setting; and holistic planning covering economic, social and ecological issues – it has become a standard practice for measuring progress in terms of participatory local governance, with the strong support of the European Commission and its member governments (ICLEI, 2001).

For cities in developing countries, however, their prevailing poverty, social unrest and severe constraints in capacity for participatory local governance mean that 'sustainable city' initiatives are still in the nascent stage. In these cities, the focus of the sustainable city initiatives is naturally on strengthening governance, and developing public infrastructure based on participatory regional/ urban development strategies.

This chapter analyses the challenges faced by cities in developing countries in promoting participatory sustainable development initiatives, and introduces an approach aimed at overcoming these challenges; this approach uses information and communication technologies (ICT) to enhance local governance and create knowledge-based jobs through participatory sustainable regional development.

This approach was piloted in 23 local governments in the Delta region of Nigeria, starting from November 2008. Although located at the centre of an oil-producing area, this region is hampered by armed confrontation that impedes the construction of public infrastructure and the creation of permanent job opportunities for the local people. This perpetuates the poverty, weak local governance, protracted youth unemployment and social unrest. Such challenges are common to many other cities in Sub-Saharan Africa, South Asia and the Arab world. It is therefore important to assess the effectiveness of this approach and, more generally, the use of ICT in promoting sustainable development in low-income countries.

ICT infrastructure, in general, plays important roles in regional development, at least in three aspects: (i) connecting people in remote rural areas or urban slums to the global knowledge,

market and government services; (ii) creating entrepreneurship opportunities in new knowledge-based service industries suitable for developing countries, and (iii) supporting the local government in promoting citizens' participation in community and regional development.

A unique characteristic of the Nigerian approach is the use of ICT in promoting participatory regional development. Although the effectiveness of ICT in low and lower-middle income countries[1] has been debated by academics and development practitioners, there have been few rigorous evaluation studies of its impact. There is also a paucity of empirical research on the impact of ICT on economic growth and productivity at the country level.

This chapter provides a Nigerian case study and two independent empirical surveys which together provide empirical evidence that, even in cities in developing countries, ICT infrastructure – if carefully integrated into a comprehensive 'regional innovation strategy' – plays an essential role in promoting sustainable growth and cities' competitiveness in the knowledge economy. Particularly in the early stages of ICT infrastructure development, city-level e-government – supported by community participation and a local connectivity program – will contribute to participatory regional development and good local governance.

The next section gives an analysis of the sources of such common problems in developing countries as the 'youth bulge', with a view to demonstrating that the sustainable development of cities in these regions requires that, if serious economic distress and social unrest are to be avoided, special attention needs to be paid to (a) weak local governance and (b) lack of job opportunities for young people.

In Section 3, a new approach piloted in Nigeria will be introduced in more detail. This approach is based on three pillars: (i) a focus on local governance and job-creation for young people; (ii) the use of participatory regional development strategies to create a 'knowledge economy'; and (iii)

## Related Content

Green Energy Prospects: Trends and Challenges
S. Filippov, N. Mikovaand A. Sokolova (2015). *International Journal of Social Ecology and Sustainable Development (pp. 1-20).*
www.irma-international.org/article/green-energy-prospects/129675

A Fourth Wave of Education for Sustainability (EfS) in Higher Education
Mike Brown (2018). *Sustainable Development: Concepts, Methodologies, Tools, and Applications (pp. 1167-1186).*
www.irma-international.org/chapter/a-fourth-wave-of-education-for-sustainability-efs-in-higher-education/189941

How ICT-Enabled Systems Can Enhance Opportunities of Education for Persons with Disabilities
Maria Martinho, David Adeoluwa Sangokoya, Carson Martinezand Gabriel Pestre (2018). *Open and Distance Learning Initiatives for Sustainable Development (pp. 34-57).*
www.irma-international.org/chapter/how-ict-enabled-systems-can-enhance-opportunities-of-education-for-persons-with-disabilities/185560

The Impact of COVID-19 on Hotel Guests' Sustainable Practices
Faranak Memarzadehand Shiva Jahani (2022). *International Journal of Environmental Sustainability and Green Technologies (pp. 1-16).*
www.irma-international.org/article/the-impact-of-covid-19-on-hotel-guests-sustainable-practices/304820

Assessing the Performances of Vendor Firms by Optimization Technique Industry 4.0 GSC Architectures
K. V. Geetha Devi, Shailesh Singh Thakurand Sourabh Kumar Singh (2021). *International Journal of Social Ecology and Sustainable Development (pp. 1-10).*
www.irma-international.org/article/assessing-the-performances-of-vendor-firms-by-optimization-technique-industry-40-gsc-architectures/279088