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04 | CHARACTERISTICS AND INITIATIVES OF CAMBODIA'S SMART CITIES IN ASEAN SMART CITY NETWORK



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Executive summary

- The article discusses the concept and characteristics of smart cities in Cambodia.
- Four typologies of a smart city can be categorized based on their function and economic potential, namely regional economic corridors, gateway cities, border cities/towns, and capital cities.
- Through examining the dimensions and focused development areas of smart cities developed by the ASEAN Smart City Network (ASCN), the article finds that Phnom Penh, Battambang, and Siem Reap cities have applied ASCN's definition.
- It is also important to consider city size, economic orientation, geographic location and accessibility, endowments, income levels, history, political systems, institutional capacity, and autonomy in the developing provincial smart city.

The rapid growth of the urban population, cities around the world, including in Cambodia, will need to address the exacerbating problems, including traffic congestion, water, and energy supply shortages, and sewage and waste disposal issues. Furthermore, cities will face the increased intensification of disasters caused by climate change and infectious diseases such as the COVID-19 pandemic. Inhabitants in urban areas will further be challenged due to limited resources and services, including medicine, education, environment, and transportation (Kirimtat et al., 2020). Smart cities have emerged as a solution to address the challenges arising with the exponential growth of urbanization and population. However, the smart city concept is still evolving and not mainstreamed throughout the globe due to technological, economic, and governing barriers.



Therefore, by using the systematic review approach, this article discusses the concept and characteristics of smart cities in Cambodia under the context of the ASEAN Smart City Network (ASCN).

According to the literature reviews, there is a wide range of definitions of a smart city provided by academia and practitioners, who have not been consistently agreed in terms of characteristics, components, technologies and concept of a smart city due to city's local and cultural contexts (Seng et al., 2022). However, the common goals of a smart city are to improve quality of life and promote sustainable growth in society, economy and environment.

Based on the city characteristics and national and regional development strategies, Cambodian cities can be categorized into four typologies based on their function and economic potential, namely regional economic corridors, gateway cities, border cities/towns, and capital city (World Bank, 2018). Regional economic corridors serve critical roles in regional economic development and integration. Gateway cities serve as a primary entry point or “gateway” to the country or region. Gateway cities often have an international or domestic hub airport or seaport serving as the primary arrival and departure point and serves as an anchor/center for regional economies. Strategically located

along economic corridors, in most cases, border cities/towns may have various roles of serving as a gateway for cross-border trade and tourism as well as Border Economic Zones (BEZ) to facilitate production and trade across borders. Finally, capital cities are cities that serve as the primary economic, cultural, and intellectual centers of a nation (World Bank, 2018).

Being one of the members of ASCN, Cambodia has adopted ASCN's smart city definition as the city that promotes economic and social development alongside environmental protection through effective mechanisms to meet the current and future challenges of its people while leaving no one behind (ASEAN Secretariat, 2018). Cambodia has selected three cities, Phnom Penh, Battambang, and Siem Reap, as pilot cities to participate in the ASCN among the 26 ASEAN cities in 2018 to provide sustainable green growth and encourage healthy economic activities that reduce the burden on the environment while improving the quality of life (Pen, 2019). These cities have mainly focused on four key development areas such as civic and social, quality environment, built infrastructure, and safety and security, and their typology, vision, and initiative projects are summarized in Table 1 below.

Table 1. Summary of action plans of Cambodia's pilot smart cities participating in ASCN.

City	Vision	Development Focus Area	Smart City Projects
Phnom Penh (Capital city, gateway city)	To improve the urban environment to enhance citizen's quality of life	- Built infrastructure - Quality environment - Civic and social	11 Sidewalks Rejuvenation Project - Improving the efficiency of Phnom Penh Public Transit
Siem Reap (Provincial city, gateway city)	Siem Reap is a beautiful, unique and ideal tourist destination, characterised by the harmony of Khmer history, arts, and nature.	- Civic and social - Safety and security - Quality environment	- Smart Tourist Management System - Solid waste and Wastewater Management
Battambang (provincial city, regional economic corridor city)	To achieve a socially responsible, environmentally friendly, and economically successful city whilst Retaining Battambang's unique character.	- Civic and social - Quality environment - Built infrastructure	- Urban Street and Public Space Management - Solid and Liquid Waste Management

In short, these key development areas selected to be designed and implemented in Phnom Penh, Siem Reap, and Battambang cities based on their natural characteristics, potentials, and varieties of conditions and needs, and contexts of technologies. Meanwhile, two other development focus areas, including the health and well-being of people and industry and innovation, have not been considered for the pilot smart city development yet. Therefore, for future study, key elements/components should be considered for the local context in Cambodia, including inclusive dimensions of smart city, national and sub-national smart city committees, strengthening R&D and innovation for smart city, human resource development and participatory procedure of smart city development. As the development perspectives, most cities in Cambodia have their own set of development concerns based on their distinct characteristics, challenges and functions (vision and objectives). Therefore, it is important to consider other dimensions (World Bank, 2018), including city size (population, area, density, etc.), economic orientation (industries and services), geographic location and accessibility (coastal, inland, land-locked, etc.), endowments (resource-rich or barren), income levels, history (new, old, planned, unplanned), political systems, institutional capacity and autonomy.

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