

“Smart is not Equal to Technology”: An Interview With Suhono Harso Supangkat on the Emergence and Development of Smart Cities in Indonesia

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In 2017, the Indonesian government launched the ‘100 Smart Cities’ initiative to mark the rise of smart city concepts in urban development. Rather than replicating what has been done by developed countries, Indonesia has experienced somewhat different pathways in developing its smart cities. This piece records an expert interview with Suhono Harso Supangkat, a professor of information technology at the Bandung Institute of Technology (ITB) and one of the pioneers of Indonesia’s smart cities program. He leads the Smart City and Community Innovation Center (SCCIC), which facilitates cities’ implementations of smart solutions to urban problems. He advises and assists many government agencies and industries, especially on information technology regulations and governance. He has also developed the Indonesian Smart City Rating (RKCI), which aims to survey and map Indonesian smart city development; it has been published every two years since 2015. This interview was conducted in Indonesian on 10 September 2020 via telephone call. For the purposes of this paper, the interview transcript was translated by the author. The interview relates to the emergence, prospects, and challenges of Indonesian smart cities and their development.

Keywords: Indonesia; Information Technology; Smart Cities; Urban Development; Urban Governance

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ARIF BUDY PRATAMA: *Thank you, Professor Supangkat, for giving me this opportunity to interview you. In your perspective, how do you see Smart Cities as an urban development concept in Indonesia?*

SUHONO HARSO SUPANGKAT: In essence, whatever it is, the main objective is to improve the quality of life for citizens. Today should be better than yesterday; tomorrow should be better than today. That is the principle. A city should become better over time. In general, we cannot enjoy cities in Indonesia. Maybe it will be different if you have experienced Western cities, in Europe, Bonn, your place

of residence, for instance. Urbanization¹ in Indonesia has resulted in social transformation and population shifts. For example, due to education purposes, people may need to travel from Sleman to Yogya[karta] City and then move on again to Bandung. In the 1960s, only 30% of people lived in the cities; now it is closer to 60%. While urbanization is continuing, the capacity of cities cannot follow the pace of urbanization. As a result, the quality of life in cities has been diminishing. The primary needs of urban areas, such as energy, food, health, education facilities, and employment, should be addressed by local governments. In the last 15 years, or say, since the 2000s, it has become uncomfortable (living) in Bandung or Jakarta due to traffic congestion.² Well, we need to govern the cities in better ways. Technologies are needed to help us, especially city surveillance, which would help mayors and regents oversee their cities more accurately and rapidly. In 2005, many local politicians did *blusukan*³ to accommodate citizens’ aspirations – an average of eight hours per day. Can you imagine how many places they visited? Say eight sites per day. In reality, there are hundreds or even thousands of problems in the city that cannot be understood through *blusukan*. In short, there are likely to be as many problems as there are people living there and infrastructures therein. Well, technologies like artificial intelligence, big data, the internet of things, and so forth are needed.

PRATAMA: *Could you please elaborate: How does technology play a role in urban development?*

SUPANGKAT: How do mayors or regents grasp these urban problems? This is where technologies take part. As Muslims, we know *iqra*,⁴ which means ‘to read or understand problems’. We must understand existing problems: hospitals, urban poor, schools, agriculture, industries, security, waste, etc. Mayors are assisted by office heads, aren’t they? Since city governance includes many actors, including civil servants, community members, industry leaders, and the private sector, technology is necessary to facilitate interactions between differing actors and other components.

1 Indonesia faces a high rate of urbanization, as many people move from rural or sub-urban to urban areas. The latest data from Statistics Indonesia projects urbanization rates as follows: 53% (2015), 55% (2018), 66.6% (2035), 67% (2045), and 70% (2050) with average growth of 2.3% per annum (Statistics Indonesia, 2018).

2 Bandung and Jakarta are popular destinations due to their employment potential, and are regarded as the economic epicenters of Indonesia (Farda & Balijepalli, 2018). This has caused their populations to grow rapidly. In Jakarta alone, the National Development Planning Agency (*Badan Perencanaan Pembangunan Nasional*, BAPPENAS) estimates that economic loss due to traffic congestion has reached more than IDR 65 trillion (The Jakarta Post, 2019). This number reaches IDR 100 trillion if the value of lost time is included (Tempo.co, 2019).

3 *Blusukan* is a Javanese word derived from the root *blusuk*, which means ‘roaming into’. In the political realm, it refers to politicians door-to-door and direct visits with citizens. This concept was popularized by President Joko Widodo, also known as Jokowi, during his time as Mayor of Surakarta. In the literature, *blusukan* is sometimes translated as ‘street visits’ (Tapsell, 2020), ‘impromptu visits’ (Juwono & Cindra, 2020), or ‘two-way direct communication with citizens’ (Zulham, 2020). There is a debate regarding whether *blusukan* is aimed for political image-making, or an effective means of accommodating citizens’ aspirations.

4 *Iqra*’ is a word of Arabic origin meaning ‘to read’. It refers not only to the shallow interpretation of a text or narrative, but also to the ability to understand them in context.

Take command centers⁵ as instruments for city surveillance through which city governments can monitor the condition of the city. They use technology. Here, technology is regarded as enabling smart city projects, but not their main objectives.

PRATAMA: *The relationship between technology and urban development seems to follow a simple linear logic. How do you find it to work in your real-world experience?*

SUPANGKAT: There is a misperception regarding this. Many mayors and regents assume that, if they buy the technology, they buy the smart city. As such, we have worked to monitor the progress of smart city development in Indonesia. Smart cities are not simply cities with sophisticated technological applications, but ones that can manage their resources efficiently and effectively by harnessing smart solutions. Once more, smart is not equal to technology. Technology must be utilized to improve residents' quality of life and environment sustainably.

PRATAMA: *If we compare [smart cities in Indonesia] with smart cities in developed countries, what is the main difference?*

SUPANGKAT: According to our surveys, there is no real smart city in Indonesia, I would say. Some mayors have been mocked by their citizens, told that their smart cities are just self-aggrandization. To be more objective, there should be a standard measurement. What makes [smart cities in Indonesia] different from smart cities in developed countries may be the education level and city space. In Singapore, for instance, Singaporeans are disciplined; here, people are far from disciplined, aren't they? It depends on how people behave as well. In this regard, people and processes are very important. Especially processes related to culture.

PRATAMA: *Could you please tell us how the smart city initiative emerged in Indonesia?*

SUPANGKAT: Well, in the beginning – according to my research – the smart city concept was developed within an Indonesian context around 2003. I was a special staff member for the Minister of Communication and Informatics from 2007 to 2009. In 2010, I returned to ITB. The preliminary concept was e-government, in which information technology was used in government activities. While the concept of e-government leans on back-office features, the concept of a smart city is different, broader, as cities are at its crux.⁶ Since 2013, we have rated smart city development in Indonesia,

5 A command center is an integrative instrument (usually a room with information technology applications) that facilitates data-driven decision-making processes. Many cities in Indonesia, such as Surabaya, Jakarta, Bandung, and Makassar, have used command centers in their decision-making processes (Kompas, 2018).

6 One recent smart city project is 'Bandung Smart Food', which has been designed to achieve Sustainable Development Goals 3 and 12 (zero hunger; responsible consumption and production) by integrating food supply/distribution and waste management. Bandung produces more than 1,300 tons of waste every day, 45% of which is organic waste and left-over food (Prasetyo et al., 2019). To reduce food waste, an online platform called BADAMI has been developed in accordance with Bandung's smart city program and COVID-19 response. Collaborating with small-and-medium enterprises (SMES), this mobile application offers a marketplace for fresh, surplus, and waste foods (Badami, 2021). Its main feature is 'food rescue',

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and we have published our findings every two years. Later, in 2017, the Ministry of Communication and Informatics made a move by launching the ‘100 Smart Cities’ initiative.⁷ In this regard, the Indonesian Ministry of Communication and Informatics followed our initiatives. Conceptually, we developed the Garuda Smart City model⁸ as an academic and practical reference for smart city development. The Garuda Smart City model tries to break down detailed dimensions and indicators of how cities develop smart projects and incorporate them in their urban development agendas. Recently, the ministry developed another model, one that includes smart branding as a substitute for smart mobility. In my opinion, branding is not a main dimension of smart cities.

PRATAMA: *How does your institute deal with smart city development in Indonesia?*

SUPANGKAT: We facilitate cities in developing their master plans and implementing these plans sustainably. As I told you before, no city in Indonesia has reached 80 points, the threshold for being identified as a smart city.⁹ They get 60 to 70 on average, which indicates that they are becoming smart, but not yet smart, I would say.

which facilitates food sharing among city inhabitants, allowing those who have excess food to deliver food to those who need it. Another project related to waste management is the massive *Kang Pisman* movement. The project, deriving its name from an abbreviation for *kurangi* (‘reduce’), *pisahkan* (‘separate’), and *manfaatkan* (‘utilize’), has created 143 zero-waste regions where communities apply – aided by information and communication technology – integrated waste management. Organic waste is further processed and integrated into urban agriculture, such as gardening, fisheries, and farming in Bandung. Both BADAMI and *Kang Pisman* were showcased by the Milan Urban Food Policy Pact (MUFPP) and received the Milan Pact Award 2020 (MUFPP Secretariat, 2021).

7 This program was supported by the central government through the Ministry of Communication and Informatics, Ministry of Interior, Ministry of Public Works and Housing, Ministry of National Development Planning, and the Presidential Office (Ministry of Communication and Informatics, 2018). Its main activity is providing technical assistance and facilitating smart city development in Indonesia’s cities and regencies. As of late 2019, 93 cities in Indonesia have received smart city status (Davy, 2019).

8 The Garuda Smart City framework was initially developed by the Smart City and Community Innovation Center (SCCIC), Bandung Institute of Technology, to assess smart city development (Supangkat, 2015). It comprises three characteristics (economic, social, and environmental), three enablers (people, governance, and technology), and twelve factors (economy, industry, education, natural resources, disaster mitigation, health, transport, public services, socio-digital, energy, environment, and spatial planning). These three characteristics, consisting of twelve factors, are service domains delivered to citizens. In doing so, cities need to enhance their local resources – such as natural resources, local governments, private sector actors, academics, non-government organizations, city buildings/infrastructures, information technology, and city inhabitants – and transform them into the main beneficiaries. The enablers, characteristics, and factors in the framework are all interrelated, and used to achieve a locally-adapted ecosystem that delivers smart services to citizens. Recently, the Garuda Smart City framework was revised into the Garuda Smart City model, which consists of three layers: (1) resources, (2) enablers, and (3) services. This revision was made to emphasize cities’ tangible and intangible resources as baselines of urban development, and transform them into enablers. Another change can be seen in the service domains, which also include service clusters and items – the end product of smart cities (Supangkat et al., 2018; Tay et al., 2018).

9 The grading scale was developed by *Rating Kota Cerdas Indonesia* (Rating Smart Cities Indonesia, or RKCI). It focuses on measuring different components of smart city maturity, including smart and innovative services; quality of life; citizen perceptions; resource utilization, management, integration, and sustainability; digital government; and city management strategies and plans. The scale recognizes five levels of smart city implementation: ad hoc (0-20), initial (20-40), scattered (40-60), integrated (60-80), and smart (80-100). To be classified as smart, a city should score 80 points or higher (Supangkat et al., 2018); most Indonesian cities, however, are still at the scattered or integrated level.

Take, for instance, the city of Magelang. We helped it formulate its master plan in 2016. As you can see, good progress has been made in many aspects of development. We have also assisted other cities, including Semarang, Bandung, and Surabaya.

PRATAMA: Talking about smart cities, one of the most interesting aspects is the question of who really initiates smart city initiatives. According to your research and practical experience, who are the main actors in smart city development in Indonesia?

SUPANGKAT: The main actors are the local government (the mayor/regent and his administration).¹⁰ Recently, supporting actors have emerged, for instance industrialists and youths. In the field, a new segment – the so-called millennial generation – acts as a prime mover in smart city projects.¹¹ As you know, the older people in the bureaucracy and in society cannot follow recent technological developments.

PRATAMA: How do you see the prospects of smart city development in Indonesia?

SUPANGKAT: Regardless of whether or not the Ministry of Communication and Informatics will continue the smart city project, many Indonesian cities will still experiment and try to implement suitable projects for their cities. This means that cities are not dependent on the central government program in developing smart cities. For instance, we have assisted and provided technical assistance to the city of Semarang to help them deal with urban challenges using a smart solutions perspective, and, eventually, they are still trying to find the best solution, in accordance with their local context.

PRATAMA: Is there any role model for developing smart cities in Indonesia? If yes, which city/cities?

SUPANGKAT: We cannot talk about role models, especially those from abroad. Yes, we can find ideas about developing smart cities, but we have many differences in terms of our urban characteristics and our resources in urban development. What

¹⁰ The crucial role of local government (city and regency) has been reported in previous studies since it acts as the spearhead of urban development in the implementation of decentralization policy adopted by Indonesian public administration system (Offenhuber, 2019; Pratama & Imawan, 2020). The local autonomy system, as a manifestation of decentralization policy, has shifted local planning from the central government to local authorities. It is through this framework that certain cities and regencies have initiated their smart city programs. Additionally, charismatic local leaders play an important role in developing smart cities. The cases of Jakarta and Bandung demonstrate how the development of smart cities is strongly driven by local leaders who act as policy entrepreneurs (Pilsudski et al., 2018).

¹¹ Youths – or, more specifically, the millennial generations – are often identified as ‘digital natives’ to designate their familiarity and savvy with technology (Hargittai, 2010). According to Utomo & Noormega (2020), there are 63.5 million Indonesian millennials. In smart city projects, in which technology plays an important role, youth engagement contributes relevantly to the operationalization and application of smart projects in urban development. Several youth communities have emerged at the national and local levels. *Rumah Millennials* (House of Millennials, rumahmillennials.com), for instance, has helped millennials with social networking and a learning hub platform; some of these activities have been related to smart city programs. A local-level example is *Kelompok Harmonis Digital* (Digital Harmony Group) based in Kota Batu, East Java, which has become actively engaged in regional budget and financial monitoring practices by applying information technology (Prasetyo, 2019).

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we call locality is still evident, which affects how we develop unique smart cities suited to the Indonesian condition or, let's say, the Indonesian way. Some of the literature may recognize the North American or West European smart city models. For instance, Barcelona can be used as the role model, but this may not be appropriate in an Indonesian setting. Although the technology may be the same, or at least similar, the people and the processes are diverse. I emphasize that, by technology, I refer not only to information technology; any technologies, especially locally-adapted technologies suited to specific localities, can be harnessed to facilitate smart city development.

PRATAMA: *Now we are nearly at the end of interview. What will be the challenges of smart city development in Indonesia in the future?*

SUPANGKAT: I would note at least two aspects, namely people and processes (or governance). Let's say we are about to start digitalization in the cities: Are all people ready for it? I mean, the local governments, legislative bodies, and citizens in the broader scope. The people aspect includes leadership (from the mayor), and how he/she integrates and synchronizes resources. It also deals with how citizens are educated to attain what we call smart citizenship. In short, the challenge is managing people, processes, and technologies, thereby integrating the components shaping smart cities. In reality, technological determinism is still present, resulting in misconceptions of how policymakers interpret smart cities as technological intervention.



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