EXECUTIVE SUMMARY

Jakarta Smart City (JSC) is a government initiative to develop a multi-use, crowdsourced big data platform to close the digital divide and facilitate data transparency and citizen communication with government officials in Jakarta. The initiative includes a website, smartcity.jakarta.go.id, as well as smartphone applications Qlue for residents and CROP Jakarta for civil servants and officials. Smartcity.jakarta.go.id uses the Google Maps engine and data from the traffic application Waze. Qlue is a crowdsourcing smartphone application in which users can report various incidents such as flood, crime, fire, or waste, and city officials will respond through the CROP Jakarta smartphone application.

Keywords: e-government, Indonesia
**CONTEXT**

Indonesia has been making significant progress in promoting transparent government, inclusive policy-making, and strong citizen engagement over the past 10 years (OECD). For instance, the government signed the Open Government Partnership (OGP) Declaration as a co-founder of the organization in 2011. Additionally, Indonesia also played a leading role in the United Nations Sustainable Development Goals (SDGs), which reemphasized the need for effective, accountable, and inclusive governance.

The country’s National Long-Term Development Plan (2005-2025) set a goal toward a “just and democratic, and peaceful and united” country, with a “clean, effective, democratic, and reliable” government as later elaborated in the National Medium-Term Development Plan of 2015-2019. The enabling environment for open government in Indonesia consists of the existing legal framework, as well as the participation of key government institutions, independent state institutions, and civil society.

In 2013, the Indonesian government introduced the “One Data” initiative in October 2013 as a way to improve data governance. A national data portal was established with 1,200 datasets from various government agencies that the public can easily access. Indonesia established the National Open Government Secretariat in 2015, along with 694 Documentation and Information Management Offices to handle request for information across the country, and a national online complaint management tool that has attracted 300,000 users as of September 2015 (OECD).

Several issues related to open data and open government are still hindering Indonesia’s progress, however. The underdeveloped open data ecosystem – which includes regulations on how data should be produced and managed, and the limited open data advocacy that still focuses on “opening up data” only without expanding to utilizing data to solve problems – are two of the major concerns.

<table>
<thead>
<tr>
<th>Indonesia</th>
<th>Fixed broadband subscriptions (%) (ITU, 2016)</th>
<th>1.89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population (UN, 2015)</td>
<td>255,708,785</td>
<td>1.89</td>
</tr>
<tr>
<td>Population density (people per sq.km) (UN, 2015)</td>
<td>134.26</td>
<td>149.13</td>
</tr>
<tr>
<td>Median household income (Gallup, 2006-2012)</td>
<td>$2199</td>
<td>25.4</td>
</tr>
<tr>
<td>Education (Mean years of schooling) (UNDP, 2013)</td>
<td>Male: 8.1, Female: 6.9</td>
<td>N/A</td>
</tr>
</tbody>
</table>
PROJECT DESCRIPTION

Jakarta Smart City, started in 2015, provides new space for the community to participate in the development of New Jakarta through applications and websites accessible via mobile phones. Through the Qlue application, people can report problems that can be directly followed up by the relevant government agencies. Communities can also monitor the performance of government officials through the website performance.jakarta.go.id or report directly to the government via Short Message Service (SMS). In addition to applications that provide reporting services to the public, JSC also provides a platform for governments to manage all forms of community participation called Citizen Relationship Management (CRM).

The Jakarta Smart City Portal is a website to display data and information that can be accessed by the community. This portal is one of the government's efforts to realize verified transparency by centralizing and integrating all data in one place. It also provides data for developers through api.jakarta.go.id, and works in cooperation with start-ups such as Go-Good, Zomato, Trafi, and Google Transit.

IBM Global Business Services helped the JSC team design a solution that would provide a big data hub for integrating information from the citizen feedback app and social networks, as well as government services such as transportation, healthcare, water distribution, and other services. The solution uses IBM InfoSphere DataStage to extract, transform, and load data from all these sources into a central data platform, built on IBM BigInsights, and a powerful data warehouse, which runs on IBM PureData System for Analytics. IBM InfoSphere Information Governance Catalog provides a robust data governance framework, making it easier to align the technical systems with the business requirements and processes. As analysis tools, the solution provides IBM Cognos Analytics for reporting and dashboarding, IBM SPSS Modeler for advanced analytics and predictive modeling, and IBM Text Analytics for categorization and sentiment analysis of unstructured text.

The project requires cooperation across the Department of Communications, Informatics, and Public Relations, the Unit Manager (local neighborhood government), and the Smart Governance system. JSC is a linking system that facilitates community participation and government responsiveness. The concept of a smart city in Jakarta is based on six pillars: smart governance, smart people, smart living, smart mobility, smart economy, and smart environment.

<table>
<thead>
<tr>
<th>Project specifics</th>
<th></th>
<th>Training provided</th>
<th>Basic ICT training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geography</td>
<td>Jakarta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>Website and mobile/web applications for public reporting</td>
<td>Cost to users</td>
<td>Free</td>
</tr>
<tr>
<td>Year of program started</td>
<td>December 2015</td>
<td>Total cost of program</td>
<td>Undisclosed</td>
</tr>
</tbody>
</table>
PROGRESS AND RESULTS

Jakarta is a district of 10 million people divided into five cities, 44 sub-districts, and 267 villages. The city government receives an average of 1,400 messages per day via its custom-built Qlue mobile app, which allows users to submit feedback about public services. On top of this, citizens send an average of 130 SMS messages per day to the governor’s mobile phone, and many more via other channels such as email and Twitter. JSC also provides a big data platform that analyzes an average of 40,000 items of feedback per month.

Users of JSC’s services typically have a higher education level, already actively engaged with social media, and are between the ages of 20 and 40. JSC has tried to reach a larger audience in a variety of ways. The app developers regularly provide training, and publicity and awareness measures are taken both online and offline. Online, the JSC Implementing Unit publicizes through social media channels with content ranging from articles, photos, and infographics, to audio and video. Offline, the team raises awareness through public figures and participation in events and exhibitions. The public reporting system incentivizes participation by gamifying the app, in which users create avatars and score “points” for making reports, but still not many people participate.

Self-monitoring and evaluation systems are in place too. A major component of JSC is data analytics, which are used by the government to make policy recommendations and by third-party app developers, but are also used to self-monitor progress and efficacy. Monitoring and identifying the sustainability aspects of the complaint information layer in the Jakarta Smart City portal through the Monitoring Room is one form of community complaints management. JSC also collects and analyzes the aspirations and complaints from the other six channels by utilizing the social media functions of the Jakarta Provincial Government. The management of community complaints was conducted with effective coordination between the Jakarta Smart City team and various government departments. The Jakarta Smart City Management Unit often conducts studies to monitor the performance of the bureaucracy in responding to complaints and to evaluate the complaints system of each application. Implementation and results of the application of this technology include cutting down the convoluted bureaucratic process and reducing costs of the Jakarta Provincial Government.
Despite the technological and bureaucratic infrastructure in place, the use of the app has fallen off sharply in the last year (there is much less public reporting currently compared to a year before), and it is not clear why. Some reasons for non-adoption may include lack of awareness and lack of trust toward the government.

**CHALLENGES**

**Data management** – Data management is difficult because of the relative lack of communication between of the different government departments, with a low degree of cooperation and compatibility across them.

**Outreach** – The government tried to incentivize digital reporting by neighborhood managers, but this quid pro quo model incidentally incentivized false or irrelevant reports. Those with prior knowledge of ICTs, only about 200,000 users, are also still only using the app. The government tried to use social media to publicize and raise awareness, but this does still not reach users who do not already use social media.

**Limited knowledge and familiarity by government officials** – The conventional management styles of the government generate a resistance to innovation and to new technologies to learn. Some government officials are still not keen on using the app, and even though there are training programs that target government officials, resistance still persists.

**Sustainability** – The initiative was brought by the previous government, and now that there is a new governor, there is uncertainty over to what extent the system will continue. It is also challenging to balance the provision of basic infrastructure and smart infrastructure simultaneously, under a high demand for adequate financial resources to fund any development and improvement of the city.

**Reluctance of the citizens** – Citizens do not trust the government to be responsive to their reports, and some officials do not trust public reporting because they do not think citizens have any business directly interfacing with the government.

**JSC’S SUGGESTIONS FOR FUTURE PROJECTS**

**Increase awareness** – Increasing awareness means both publicizing the new applications and websites, and also alerting citizens and government officials to a new culture of interactivity with the government.

**Create communication strategies to reach out to citizens of all kinds** – It is difficult to attract new users who are not ICT literate by advertising exclusively online. The challenges faced by JSC indicate a positive outreach strategy includes diverse channels and ways to publicize the initiative and educate users.

**Provide more training to government officials** – Government officials often require training in preparation for a new style of interaction with the citizens, how to handle the reports that users generate, and how to handle the new technologies used to generate the reports.
Data management – For optimum data management, open communication between government departments, between citizens and government, and with third-party developers (in this case Qlue and IBM) is useful.