



Policy Brief

DIGITAL TRANSFORMATION FOR RURAL AREAS AND SMART VILLAGES

Task Force 2

Meaningful Digital Connectivity, Cyber
Security, Empowerment

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Abstract

Rural areas have a strategic position in supporting a country's development priorities. While initiatives like the "Smart Village" can reduce the information gap at the village level, digitalization is not only about automation or implementing technology into existing processes, but should also involve leadership, culture, and governance.

Rural development needs to adopt a smart approach to solve unique problems through innovative ways and increase people's quality of life. Digital transformation and Smart Village initiatives must encourage rural communities to adapt to the latest developments particularly in this era of technological disruption. Information technology interventions in Smart Villages and rural areas should support rural communities and promote the improvement of the economic, social, and environmental sectors.

One of the focuses of the G20 forum this year is digital transformation. G20 governments are expected to share their efforts and investments toward rural areas. Digitalization and digital transformation in rural areas have become important in creating inclusive recovery and assisting rural areas in escaping problems that arise in the economic, social, and environmental sectors.

Challenges

One of the primary drivers of rural-urban migration is a lack of employment in rural areas, which exacerbates the ever-increasing challenges of providing adequate basic infrastructure to an increasing number of unplanned low-income urban settlements. The lack of dependable infrastructure assets in rural areas, resulting in a lack of access to basic social services, markets, and job opportunities, frequently forces the local rural population to migrate. In addition, the approach to developing rural areas is generally still carried out on a sectoral basis without adequate coordination and evaluation mechanisms. Rural development strategies can be explicitly made more pro-poor by optimizing the employment impact of physical infrastructure and service delivery strategies, providing social safety nets, and other alternatives such as unemployment insurance, microfinance, or job training.

Around 43.8 percent of the world's population live in rural areas (World Bank, 2020). Rural areas have a strategic position in supporting the country's development priorities. Therefore, regional economic growth must synergize to strengthen the quality and sustainability of national economic growth. The Smart Village program aims to reduce the gap in the flow of information at the village level. However, digitalization is not only about automation or implementing technology into existing processes, but must also involve leadership, culture, and governance.

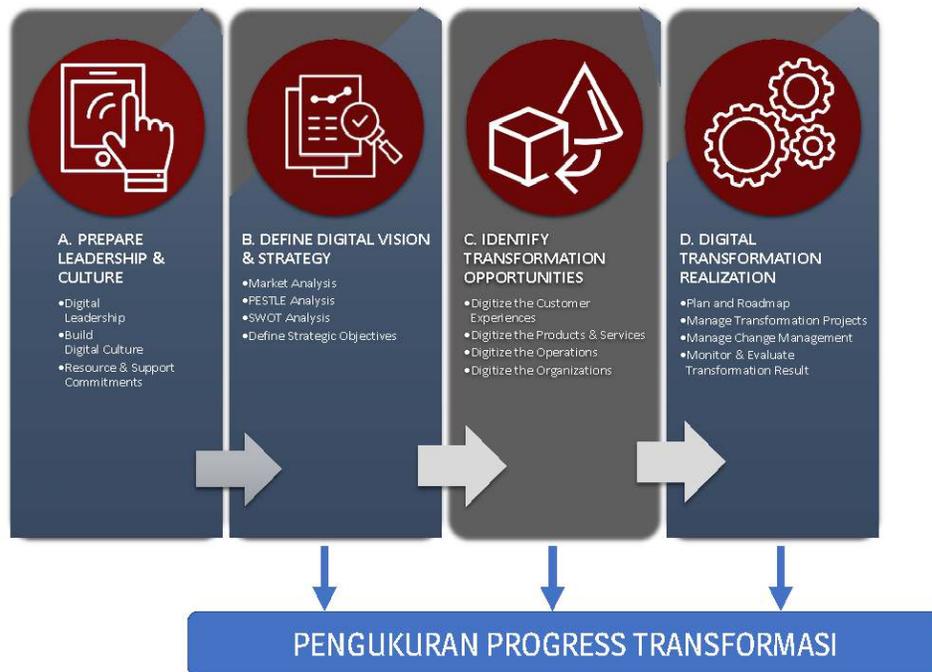
Proposals for G20

Digital transformation is one of the focus of this year's G20 forum. G20 governments are expected to share their efforts and investments toward rural areas. Therefore, Digitization and digital transformation in rural areas have become important in creating inclusive recovery and assisting rural areas in escaping problems that arise in the economic, social, and environmental sectors.

1. Digital Transformation Approach for Rural Areas and Smart Villages

Rural areas have their own unique potential and characteristics as well as different problems. Rural development needs to adopt a smart approach to solve these problems through innovative ways. A “Smart Rural Area” concept needs to be developed so that rural communities can identify local problems (sensing), understand the context and conditions (understanding), and manage (controlling) various existing resources effectively and efficiently. This needs to be supported through the provision of infrastructures and services to improve quality of life based on their unique potential and characteristics. Digital transformation and Smart Village initiatives in rural areas help rural communities adapt to the current era of disruption. A good disruption places rural communities and local wisdom as the predominant capital in planning, implementing, and evaluating rural development, so that a holistic information technology system intervention can emerge without adversely affecting existing values. The intervention of information technology in Smart Villages and rural areas—such as in the areas of agriculture, plantation, forestry, marine, and fisheries—should be able to grow in a positive direction for rural communities and should promote the improvement of the economic, social, and environmental sectors.

Jika Transformasi Digital sudah/ sedang berjalan, memungkinkan ditambahkan pengukuran progress transformasi.



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Digital Transformation Frameworks (Source: SCCIC ITB)

Sustainable National Economic Growth needs rural economic growth to be synergized, and rural areas have a strategic position to this extent. Rural development should strike a balance between maintaining a community's existing values while at the same time promoting improvements in the local community's economic, social, and environmental sectors.

To promote digital transformation across rural areas and Smart Villages, the G20 leaders could implement the following steps:

- First, leadership and culture preparation. Included in this step are:
 1. Digital Readiness Assessment
 2. Design Leadership Initiatives
 3. Design Culture Initiatives
- Second, explore strategy and transformation opportunities. Included in this step are:
 1. Context and Strategic Analysis
 - a. Define Strategic Analysis
 - b. Find Transformation Opportunities
 - c. Breakdown each initiative
 - d. Identify Supporting Organization Changes needed
- Third, propose a roadmap. Included in this step are:
 2. Initiative Prioritization
 3. Define Implementation Roadmap

These steps should be applied for each area targeted for rural and Smart Village digital transformation.

2. Smart Services Implementation Based on Local Potential and Characteristics

The following are two case studies of smart services implementation for Smart Village and rural areas based on the steps defined in the previous section.

Case Study 1: Revitalization of the Role of Village Maternity Homes (Polindes) through Digital Service Applications

Village Maternity Homes, known locally as Polindes, is a center for maternal and children's health and family planning services managed by the local village administrator with participation and assistance from village residents. Polindes serves as a place for: 1) pregnancy check-ups, 2) delivery assistance, 3) other health services, as well as 4) health consultation/education. It is a type of public service primarily serving pregnant women and breastfeeding mothers, who are especially at risk due to the Covid-19 pandemic and the virus' latest variants. Although rural areas are far from urban activities that are vulnerable to the spread of the Covid-19 virus, rural areas serve as a buffer for cities and a source of supply for basic needs in urban traditional markets.

As such, it is crucial for pregnant women and breastfeeding mothers to be aware of the existence and services of Polindes. In a Polindes, midwives are stationed full-time as administrators and managers, and are provided with basic facilities, including: a Midwife Kit, IUD kit, basic immunization for pregnant women, mother's weight and height measurement, infusion set and 5 percent dextrose fluid, 0.9 percent NaCl, simple incubator, simple medicines and uterotonics, maternal and children's health guidebook, family planning and other health guidelines. Digital transformation can be implemented to improve the efficiency of services by providing application-based information materials, including information on reducing the risk of maternal and infant mortality, especially in the Covid-19 and Post-Covid-19 eras. This way, even during social restrictions, for instance, pregnant women and breastfeeding mothers can still access information and guidelines that are essential to them.

Revitalizing the role of Polindes through digital-based information and services will prevent the acceleration, spread, and transmission of the COVID-19 virus while at the same time increase awareness of the protection of pregnant women and breastfeeding mothers. The knowledge base provided in this application—such as information on maternal health, childbirth, breastfeeding, stunting prevention—will help promote the priority agenda of the G20 Indonesian Presidency in 2022.

Case Study 2: New Normal Smart Village in Likupang for Tourism and Marine Activities

The Covid-19 pandemic has the potential to cause a recession: it is predicted that most countries will experience a negative economic growth, and only three G20 member countries are expected to show positive economic growth in 2020—Indonesia, India, and China. Recession also affected the tourism sector, causing a sharp decline in tourist visits in various parts of the world. Along with increasingly massive vaccinations, as an archipelagic country, the tourism industry in Indonesia is closely related to the development of coastal and marine areas. Indonesia is a country that has an ocean area larger than the land area, where the number of islands in Indonesia, both large and small, reaches 17,580. As an archipelagic state, it is necessary to look for new strategies and patterns of tourism (Saksono, 2013). Following the pandemic, the tourism sector has begun to experience revival, especially since 2021, where tourism activities are back open with due observance of strict health protocols. In Austria, the Covid-19 pandemic offers an opportunity to discuss the resumption of tourism with experience during the closing period in spring 2020 (Jiricka-Pürerer et al., 2020). Tourism must be promoted to trigger the growth of other sectors and areas. In the Likupang coast, for instance, tourism sites can be developed to attract visitors—while still maintaining health protocols—and encourage community participation. In line with the spirit of sustainable tourism under the Smart Village program, the promotion and marketing can be initiated by local communities through digital channels. Furthermore, the manufacture of handicrafts and the development of family-based MSMEs, the management of tourism services as well as the economic development of tourism waste bank development can be carried out through environmentally friendly smart technology. Tourism development in supporting this activity must be reflected in every community activity, and if managed properly, this will generate foreign exchange earnings for the state and increase the community's economy. This can be achieved through a coordinated policy arrangement with tourism supporting communities such as local governments, academics, businesses, start-up communities, and also the media by prioritizing the role of women as tourism drivers.

The provision of facilities and infrastructure as well as the development of appropriate infrastructure are important supporting factors to attract tourists to visit a tourist attraction. A visit to a tourist attraction will provide an opportunity for investors to open up investment land to develop tourism, including in the Manado coast. The concept of smart tourism needs to be developed and oriented towards the development of technology, people, and institutional logic, an entrepreneurial ecosystem approach helps strengthen smart destinations on their journey to encourage the development of a sustainable role (Eichelberger et al., 2020). The expansion of tourism development will certainly boost employment in the tourism sector, providing job opportunities for the community both in the tourism location and in the vicinity, which will in turn

increase the community's welfare due to the economic turnaround as a result of the tourism (Risman et al., 2016). Government support for tourism is essential, including through asset lending for tourism activities as these assets are managed professionally. Asset management in the public sector is important to provide quality public services. One of the important public assets is regional property managed by the local government (Eichelberger et al., 2020).

Tourism has been an avenue for eliminating unemployment, poverty, and encouraging economic growth which is still a classic problem for us to this day (Saksono, 2012). Tourism that relies on community mobility is severely disrupted with this pandemic (Muhyiddin & Wardhana, 2020). However, tourism must be encouraged again, and with appropriate health protocols, it will certainly reignite regional competitiveness. Tourism can contribute to conservation and development and involve, at a minimum, positive synergistic relationships between tourism, biodiversity, and local communities, facilitated by appropriate management (Ross & Wall, 1999). Tourism has been adapted rapidly to various worlds, including Indonesia, and created significant harmonization of economic, social and cultural uses (Roy et al., 2021). As a series of economic activities, tourism trades the character of special places as is done on the Gold Coast, Australia, the state adopts a neoliberal interpretation of the public interest where increasing the global competitiveness of destinations is the main goal that is pursued together through community empowerment (Dredge, 2010). Many investors invest and open businesses on the coast in Likupang and its surroundings, especially investors from outside the region. If this is done continuously, regional revenues can increase.

Conclusion

Rural areas have a strategic position in supporting a country's development priorities. The Smart Village is a program that aims to reduce the gap in the flow of information at the village level. The activities we propose have very high relevance to the activities of the G20, since digital transformation is one of the focus of this year's G20 forum. Rural development needs to adopt a smart approach to solve local problems through innovative ways to increase people's quality of life. Digital transformation and smart village initiatives in rural areas help rural communities adapt to the current era of disruption. Sustainable National Economic Growth needs rural economic growth to be synergized, and rural areas have a strategic position to this extent.

To promote digital transformation across rural areas and smart villages, the G20 leaders could implement the following steps:

- First, leadership and culture preparation.
- Second, explore strategy & transformation opportunities.
- Third, propose a roadmap.

This policy brief proposes the following recommendations:

- a. Establish a regulatory framework for the development of Smart Villages and rural areas that supports sustainability in terms of social, economic, and environmental aspects by empowering the penta helix ecosystem.
- b. Synchronize the management of Smart Villages and rural areas in an environmentally friendly manner through the use of technology by involving local governments, academics, businesses, communities, start-ups, and media.
- c. Formation of a cross-sector Smart Village and rural area development team to create synergy and collaboration to ensure a sustainable ecosystem.
- d. Capacity building of Human Resources (HR) not only among Regional Apparatus Organizations, but also in the community through training to implement development using a digital transformation approach.
- e. Cooperate with universities to carry out research on the development of Smart Villages and rural areas through a digital transformation approach.
- f. Monitor Smart Village and rural area development activities by prioritizing digitization through start-up communities, utilizing technology with the digital transformation approach.
- g. Mapping of the Smart Village and rural area development model using the principle of community participation, followed by mapping the technology-based circular economy process.

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