CASE STUDY: DIGITAL TRANSFORMATION FOR EQUATORIAL KUNDU

Introduction

In this assignment, you are tasked with creating a focused Digital Transformation strategy. In this case study, you will find detailed information about Equatorial Kundu, a fictional country, that embodies a combination of traits found in today's complex environments. Your task will be to utilize the information and data provided in this description, apply the knowledge you have acquired from the SIGMA Online Modules, and employ interdisciplinary and creative thinking to develop a solution for one of the three scenarios presented below.

Overview

Equatorial Kundu is a low-income country that has suffered from free-trade exploitation, acute inequalities, and lost its capacity for domestic sustainability. The country is a mostly unregulated economy with untapped natural resources, but no capital markets, a weak judicial system, poorly enforced contracts, and rampant government corruption. Equatorial Kundu faces challenges to improve education equity, healthcare, and the environment to boost long-term economic growth. Child mortality rates are rising and while traditionally high, literacy rates are dropping.

Population clustering is heaviest along the Kundu River Cities in the north and the capital Azunaka. Deforestation and erosion, aggravated by bushfires and the use of firewood as the primary source of fuel, are serious concerns as well as the environmental toll of the mining industry. Mining is a mainstay of the economy, accounting for more than one-fourth of GDP and employing roughly 80% of the population.

Scenario

Equatorial Kundu seeks assistance from a wealthy impact investor who grew up in the country herself, to support solutions for the country's socio-economic crisis through digital transformation (DT). She made her money through platform economies, and she knows from personal experience how some win and some lose with digital transformation. Having worked with big tech companies she is not willing to commit to a large monetary investment in digital transformation without some critical evaluation of certain conditions.

The impact investor calls a meeting of key stakeholders so that she can lay out a strategy for digital transformation that is responsible in terms of its commitment to social, environmental as well as economic infrastructural development. She sets out the challenge to award a 5-year contract to a consortium of interests who can design a digital transformation strategy that is 'not like all those models that big consultancy organizations sell to small businesses and countries.' She wants 'responsible' digital transformation, and along with the broad economic benefits DT offers, she requires <u>two</u> of the <u>Sustainable Development Goals (SDGs)</u> to be a specific focus and achievable for the strategy. In addition, she wants the bidder to be mindful of:

- Unsustainable dependency relationships created by DT
- The relationship between AI technology and climate change
- The sensitive use of personal data and data monetization in the context of digital economy
- The risk of techno-colonialism; and
- The North/South World digital divide.

The impact investor announces that <u>one of the three specific digital transformation settings</u> should be worked-up in each bid:

1. The enhancement of general economic policy with a special interest in improved trade bargaining and sustainable domestic markets. In the past, the nation has been a major exporter of cobalt and forest products, while depleting the natural resources of its domestic markets in these areas.
2. The enhancement of a struggling consumer-based business organization (a start-up in the early stages of development) that needs a national DT strategy to be implemented to innovate in a manner that complements sustainable national economic goals as well as business profitability.
3. The enhancement of the capital city, which has 'smart city' urban development aspirations. The special interest should be equitable urban development. There have been calls for better balancing between private and public actors in the management of transport; considering social inequality and data privacy; surveillance technologies; data bias between rich and poor neighbourhoods and implementation of AI predictive policing, etc.

Your task - Steps to be taken

Put together a stakeholder team to create a winning bid. As a group follow these steps:

1. After reading the country data summarized below, discuss the country's situation and state what is known. Identify the circumstances that are relevant for the three settings and analyze how they are interlinked. What SDGs might be relevant for the chosen setting?
2. As a group, decide on <u>one</u> of the three DT settings you want to focus on in your strategy. Also decide which SDGs you will address in your bid.
3. Brainstorm possible approaches where the use of DT comes in to promote and improve the social and economic situation of the country in response to your elected scenario and SDGs.
4. Identify what is still open/unknown and derive what you need to research.
5. Based on what you have elaborated, develop a sustainable DT strategy that considers the aspects described in the scenario.
6. Your submission includes a written proposal and a short video pitch. You will find instructions for both formats below.

EQUATORIAL KUNDU COUNTRY DATA

GEOGRAPHY

Area

land: 652,230 sq km

water: 0 sq km

CLIMATE

Semiarid in northwest; northeast and south has cool, dry season (May to October) and hot, rainy season (November to April)

NATURAL RESOURCES

antimony, phosphates, coal, manganese, rare earth elements, cobalt, chromate, oil and gas deposits, timber, hydropower, arable land
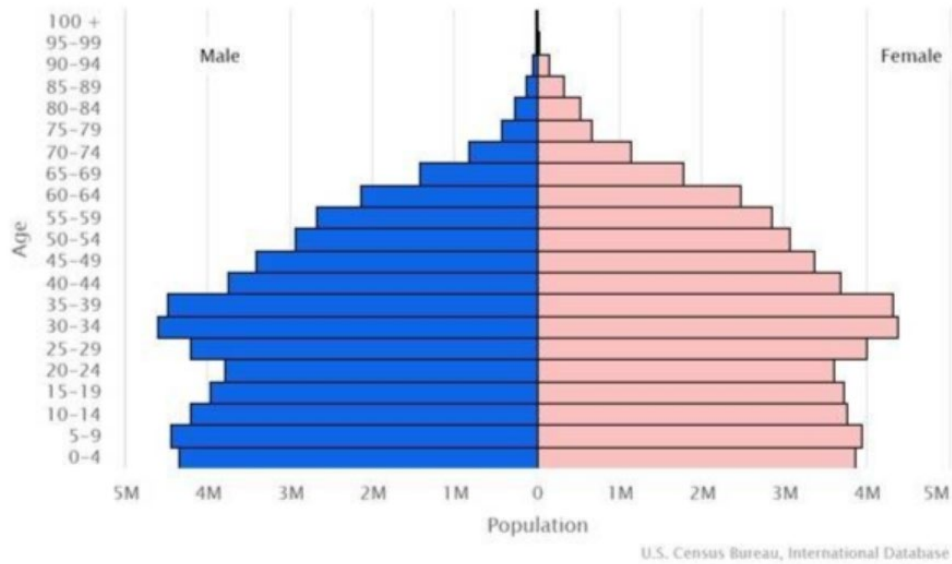
PEOPLE AND SOCIETY

Population: 242,923,845 (2022 est.)

Population growth rate: 1.95% (2022 est.)

Median age and population pyramid

total:	male:	female:
31.9 years	30.8 years	33 years (2020 est.)

U.S. Census Bureau, International Database

Dependency ratios

Dependency ratios are a measure of the age structure of a population. They relate the number of individuals that are likely to be economically "dependent" on the support of others. Dependency ratios contrast the ratio of youths (ages 0-14) and the elderly (ages 65+) to the number of those in the working-age group (ages 15-64). Changes in the dependency ratio provide an indication of potential social support requirements resulting from changes in population age structures.

total dependency ratio: 45.1	youth dependency ratio: 33.6	elderly dependency ratio: 11.4	potential support ratio: 8.8 (2020 est.)

Sex ratio

Total population: 1.01 male(s)/female (2022 est.)

at birth: 1.11 male(s)/female	0-14 years: 1.12 male(s)/female	15-24 years: 1.06 male(s)/female	25-54 years: 1.02 male(s)/female	55-64 years: 0.9 male(s)/female	65 years and over: 0.5 male(s)/female

Maternal mortality ratio

43 deaths/100,000 live births (2017 est.)

Infant mortality rate

total: 14.75 deaths/1,000 live births	male: 15.09 deaths/1,000 live births	female: 14.38 deaths/1,000 live births (2022 est.)

Life expectancy at birth

total population: 75.52 years	male: 72.95 years	female: 78.37 years (2022 est.)

Total fertility rate

2.05 children born/woman (2022 est.)

Contraceptive prevalence rate

76.5% (2018/19)

Children under the age of 5 years underweight

13.4% (2017)

Education expenditures

5.1% of GDP (2020 est.)

Literacy
defined as: age 15 and over who can read and write

total population: 81.5%	male: 85%	female: 78.2% (2018)

ECONOMY

Low-income; natural resource rich; extreme poverty; return of political stability has helped growth; sharp tax revenue drop due to COVID-19; leading cobalt producer; environmentally fragile

Real GDP (purchasing power parity)	Real GDP growth rate	Real GDP per capita	GDP (official exchange rate)	Inflation rate
$41.82 billion (2020 est.)	4.2% (2017 est.)	$1,500 (2020 est.)	$13.964 billion (2019 est.)	5.6% (2019 est.)

note: data are in 2017 dollars

Population below poverty line

70.7% (2012 est.)

Household income or consumption by percentage share

lowest 10%: 2.2%

highest 10%: 34.7% (2010 est.)

Exports - partners

United States 19%, France 18%, United Arab Emirates 7%, China 6%, Japan 6%, Germany 5%,
India 5% (2019)

Exports

$4.09 billion (2019 est.) *note: data are in current year dollars*

Imports - partners

China 24%, France 11%, United Arab Emirates 9%, India 7%, South Africa 5% (2019)

Imports

$4.7 billion (2019 est.) *note: data are in current year dollars*

ENVIRONMENT AND ENERGY

Environment - current issues

water pollution; inadequate supplies of potable water; water scarcity and periodic drought in the north; soil erosion; desertification; deforestation; loss of biodiversity

Electrification

total population: 47% (2019)	urban areas: 71% (2019)	rural areas: 35% (2019)

Electricity

installed generating capacity: 4.354 million kW (2020 est.)	consumption: 9,682,060,000 kWh (2019 est.)	exports: 0 kWh (2019 est.)	imports: 0 kWh (2019 est.)	transmission/distribution losses: 4.599 billion kWh (2019 est.)

Electricity generation sources

fossil fuels: 43.5% of total installed capacity (2020 est.)

nuclear: 0% of total installed capacity (2020 est.)

solar: 0.1% of total installed capacity (2020 est.)

wind: 0% of total installed capacity (2020 est.)

hydroelectricity: 55.5% of total installed capacity (2020 est.)

tide and wave: 0% of total installed capacity (2020 est.)

geothermal: 0% of total installed capacity (2020 est.)

biomass and waste: 0.9% of total installed capacity (2020 est.)

Energy consumption per capita

8.047 million Btu/person (2019 est.)

Petroleum

total petroleum production: 66,900 bbl/day (2021 est.)

refined petroleum consumption: 137,700 bbl/day (2019 est.)

crude oil and lease condensate exports: 12,900 barrels/day (2018 est.)

crude oil and lease condensate imports: 9,000 barrels/day (2018 est.)

crude oil estimated reserves: 5 billion barrels (2021 est.)

Refined petroleum products - production	Refined petroleum products - exports	Refined petroleum products - imports
94,830 bbl/day (2015 est.)	8,541 bbl/day (2015 est.)	24,340 bbl/day (2015 est.)

Natural gas

production: 0 cubic meters (2021 est.)

consumption: 0 cubic meters (2021 est.)

exports: 0 cubic meters (2021 est.)

imports: 0 cubic meters (2021 est.)

proven reserves: 84.95 billion cubic meters (2021 est.)

Carbon dioxide emissions

17.319 million metric tonnes of CO_2 (2019 est.)

from coal and metallurgical coke: 0 metric tonnes of CO_2 (2019 est.)

from petroleum and other liquids: 17.319 million metric tonnes of CO_2 (2019 est.)

from consumed natural gas: 0 metric tonnes of CO_2 (2019 est.)

INSTRUCTION ON THE PRODUCTION OF A CASE CAST

- Your submission consists of two parts: A written proposal with the case study analysis and a short video pitch.
  The proposal makes transparent the elements of the bid, how you'll address the solution, and your bid's expected impacts.
  Format: 10 - 12 slides (ppt.) or 3 - 4 pages (word, single-spaced, max. 12 pt.) without cover sheet/title slide and appendix.
- Present your main findings from this task in a short video pitch of **2.5 minutes** (preferably screencast).
  The following instructions may help you to develop your pitch and proposal.

Aspects to be addressed in your video pitch	Additional information
How do you want to address the issues described in the scenario? **Why did you choose this approach?**	- Shortly outline the problem by listing the factors you identified in the scenario - Explain your solution in 1-2 sentences
How do you want to achieve this?	- Describe your strategy, your team and stake-holders involved - Describe how it considers the "responsible" aspect
What does the success of your strategy look like in a 1-3-10 years?	- Outline the overall success - The success for the stakeholder subgroups - Tech/business model improvements - Broader impacts

Aspects to be addressed in your proposal	Additional information
What does your proposal include?	- Shortly outline the problem by listing the factors you identified in the scenario - Explain, how different issues are interlinked and what solution you as a group propose
Who and what is included?	- Explain who and what is included and why - Explain who and what isn't included and why - Describe your plan to address gaps

How do you plan to implement it?	Develop a rough project plan including:
	  - Resource analysis
	  - Stakeholder analysis
	  - Time plan

What are expected outcomes and Impacts?	- In 1-3-10 years - Success metrics - Sustainability plan – expected obstacles and management plan - Critical reflection
Appendix	Includes - A complete list of references (APA Style guide-lines) - List of each group member's contribution (e.g., table or bullets)