Analysis and Evaluation of Rwanda's ICT Policy

Kenta Kono(MJK22001)
National Graduate Institute for Policy Studies,
Public Policy Program, International Cooperation
Concentration Course

GRIPS

政策研究大学院大学
NATIONAL GRADUATE INSTITUTE
FOR POLICY STUDIES

Gateway to
Global Leadership

Executive Summary

- The government of Rwanda has prioritized ICT policy for inducing FDI and self-branding. Many western countries praise Rwanda as "The Miracle in Africa"

- However, ICT policy in Rwanda is not as successful as advertised given the fact that ICT sector does NOT sufficiently generate GDP and job opportunities.

- To achieve economic growth and create decent job opportunities, either adjustments of its strategy or streamlining its tactic is imperative.

Topics

1. Introduction of Rwanda's ICT Policy

2. Design & Implementation of Rwanda's ICT Policy

3. Evaluation of Rwanda's ICT Policy

4. Implications of Rwanda's ICT Policy

5. References

Introduction -How Rwanda's ICT policy looks like?-

Rwanda is regarded as an unique African country that leverages ICT for development while struggling with the legacy of the 1994 genocide
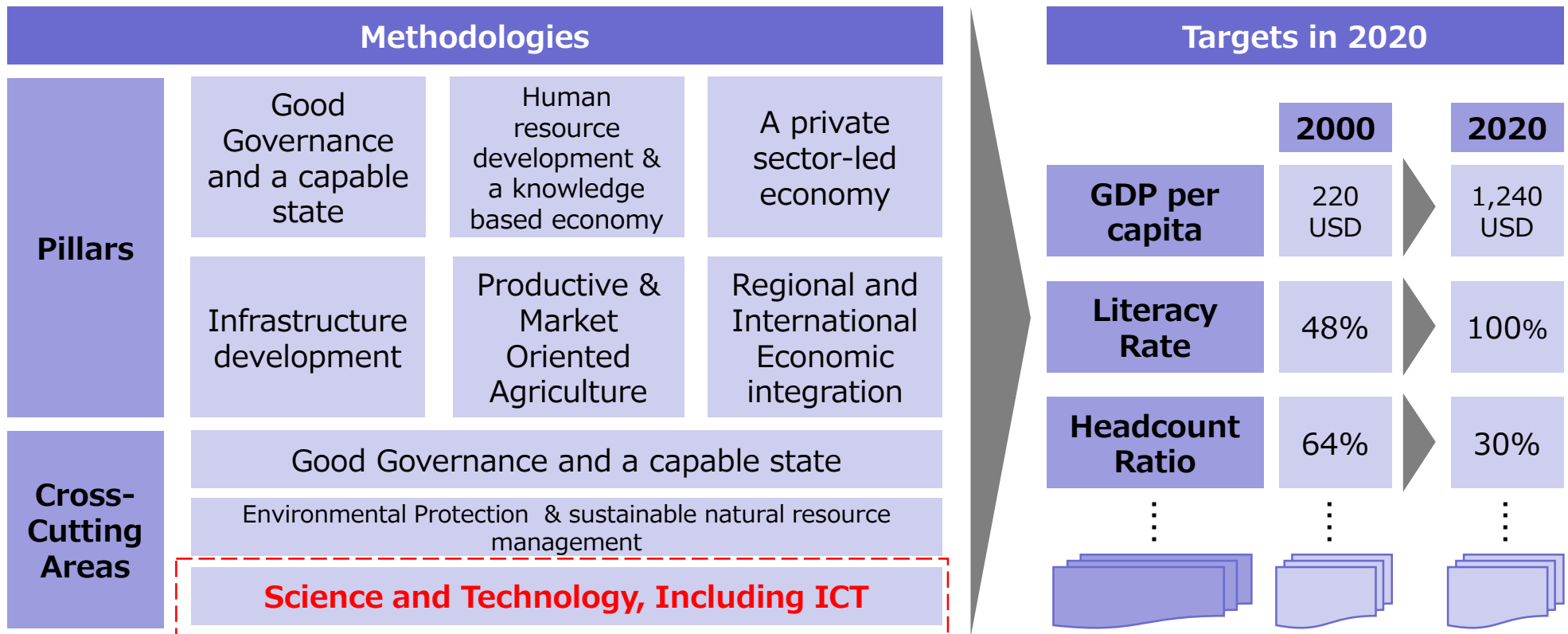
Drone	Urbanization	Edu-Tec

ICT policy in National Development Strategy

Rwanda incorporates ICT policy into a package of policies in 2000 called "VISION2020", a development blueprint aiming at transforming the country into a middle-income country
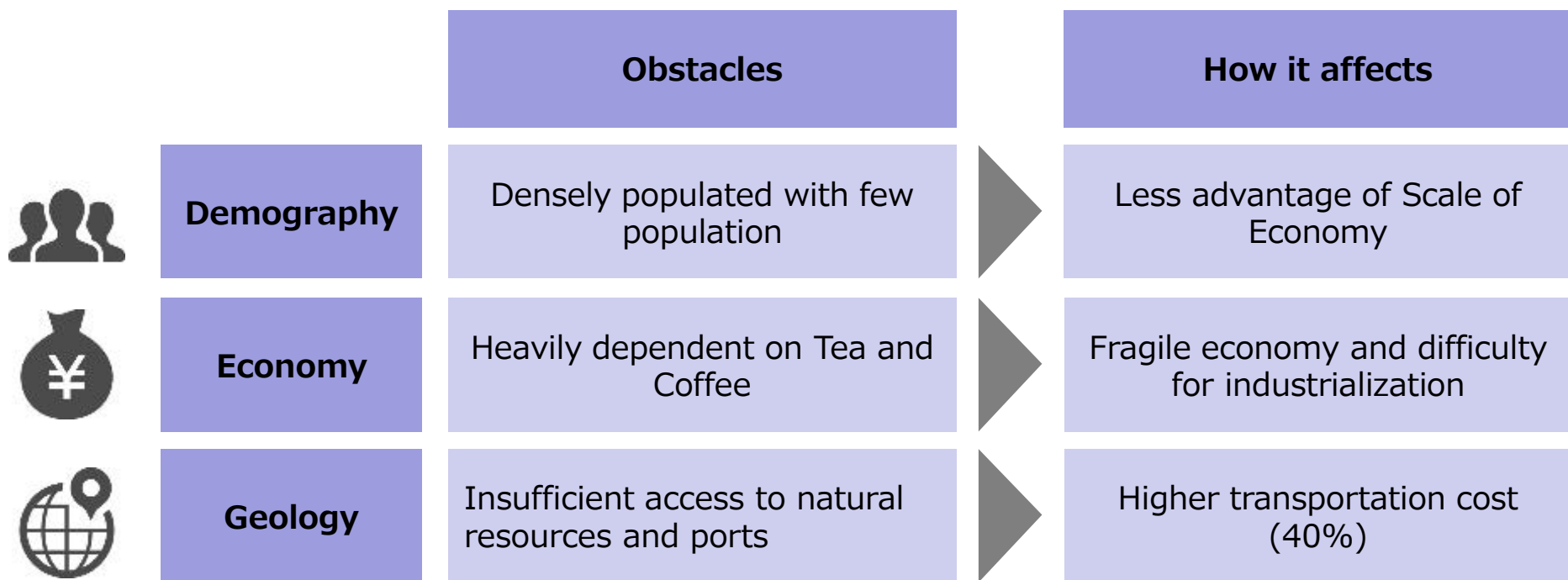
Conceptual Image of VISION2020

Methodologies			Targets in 2020		
Pillars	Good Governance and a capable state	Human resource development & a knowledge based economy	A private sector-led economy		**2000**	**2020**
	Infrastructure development	Productive & Market Oriented Agriculture	Regional and International Economic integration	**GDP per capita**	220 USD	1,240 USD
Cross-Cutting Areas	Good Governance and a capable state			**Literacy Rate**	48%	100%
	Environmental Protection & sustainable natural resource management			**Headcount Ratio**	64%	30%
	Science and Technology, Including ICT			⋮	⋮	⋮

Notes:
• X

Why ICT?

Demographic, Economic, and Geological conditions led Rwandan Government to prioritize ICT policy.

		Obstacles	How it affects
	Demography	Densely populated with few population	Less advantage of Scale of Economy
	Economy	Heavily dependent on Tea and Coffee	Fragile economy and difficulty for industrialization
	Geology	Insufficient access to natural resources and ports	Higher transportation cost (40%)

Notes:
- X

Topics

1. Introduction of Rwanda's ICT Policy

2. Design & Implementation of Rwanda's ICT Policy

3. Evaluation of Rwanda's ICT Policy

4. Implications of Rwanda's ICT Policy

5. References

Implementation

Rwandan Gov. launched National Information Communications Infrastructure(NICI) policy to realize full digitalization in four 5 year stages.

Conceptual Image of NICI Policy

	NICI Ⅰ (2000-2005)	NICI Ⅱ (2006-2010)	NICI Ⅲ (2011-2015)	NICI Ⅳ (2016-2020)
Objectives	Groundwork of ICT sector	ICT Infrastructure	Service Delivery	knowledge-based economy
Goals	To build the foundation and create an enabling environment for ICT development	To develop and deploy world class ICT infrastructure	To accelerate service development through ICT	To consolidate the NICI process towards achieving a middle-income country status
Primary Project	Opening telecommunication market	nationwide internet 4G fibers	"One Laptop per One Child" program	Private sector and community development

Groundwork of ICT Infrastructure(NICI Ⅰ)

	NICI I (2000-2005)	NICI Ⅱ (2006-2010)	NICI Ⅲ (2011-2015)	NICI Ⅳ (2016-2020)
Objectives	Groundwork of ICT sector	ICT Infrastructure	Service Delivery	knowledge-based economy
Goals	To build the foundation and create an enabling environment for ICT development	To develop and deploy world class ICT infrastructure	To accelerate service development through ICT	To consolidate the NICI process towards achieving a middle-income country status
Primary Project	Opening telecommunication market	Set up of Data Centre, nationwide internet 4G fibers	"One Laptop per One Child" program	Private sector and community development

As one of the primary projects of NICI Ⅰ, the Gov. of Rwanda created telecommunication market as a basement for following ICT development to come. From 2000 to 2020, internet penetration rate rose from 0% to 28% and internet service providers rose from 2 to 12.
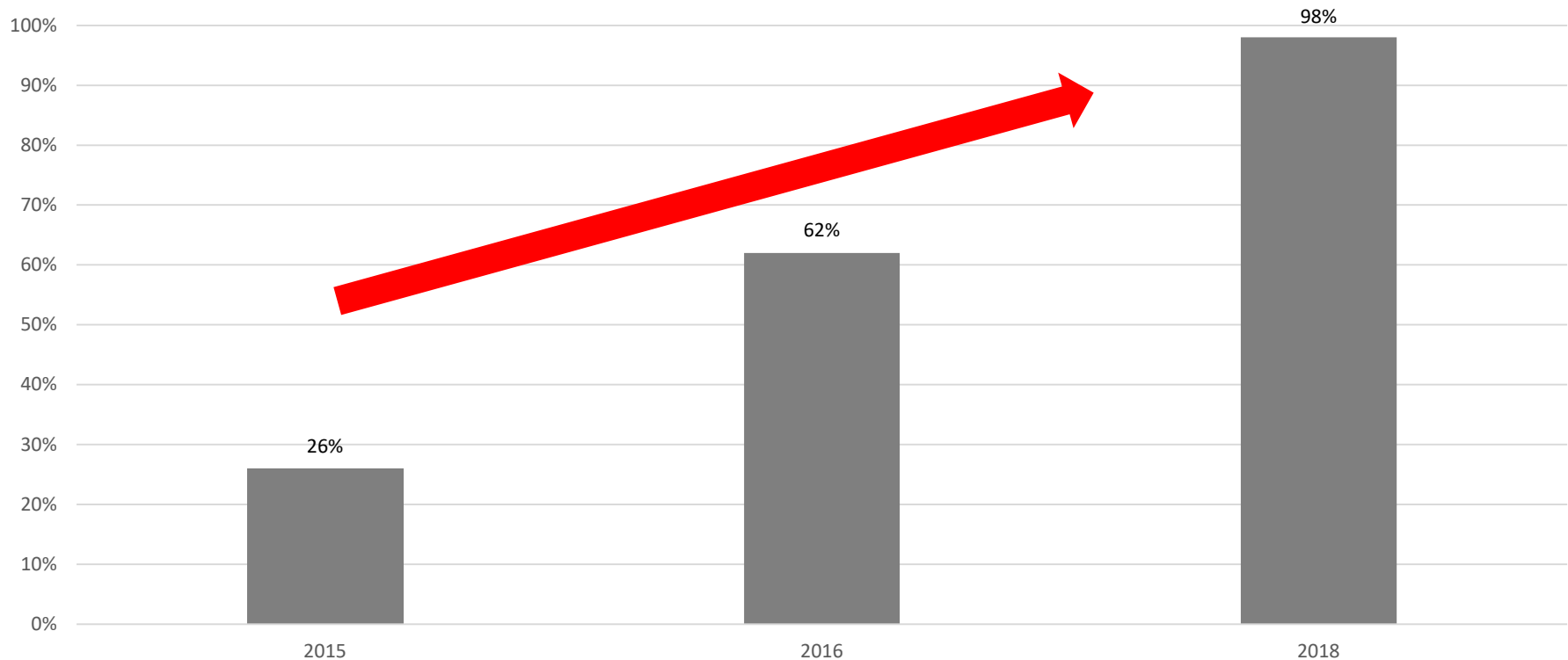
Internet penetration rate

Ghana — Kenya — Rwanda — • Uganda

NICI Ⅰ

NICI Ⅳ

Development of ICT Infrastructure(NICI Ⅱ)

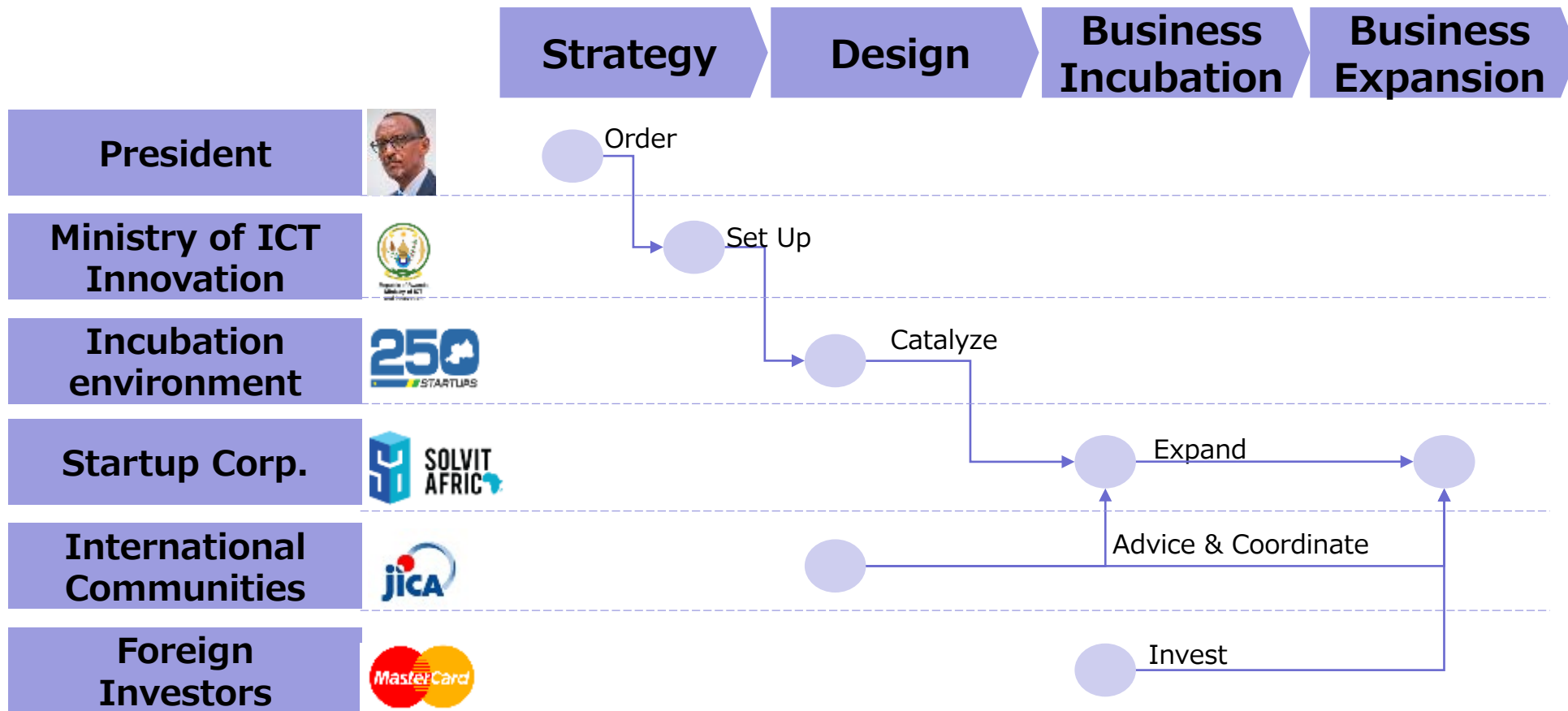|	NICI Ⅰ (2000-2005)	NICI Ⅱ (2006-2010)	NICI Ⅲ (2011-2015)	NICI Ⅳ (2016-2020)
Objectives	Groundwork of ICT sector	ICT Infrastructure	Service Delivery	knowledge-based economy
Goals	To build the foundation and create an enabling environment for ICT development	To develop and deploy world class ICT infrastructure	To accelerate service development through ICT	To consolidate the NICI process towards achieving a middle-income country status
Primary Project	Opening telecommunication market	Set up of Data Centre, nationwide internet 4G fiberf	"One Laptop per One Child" program	Private sector and community development

As one of the primary projects of NICI Ⅱ, Data center was build in the capital city Kigali and nationwide 4G internet fiber was developed.

4G expansion rate

98%

62%

26%

2015   2016   2018

"One Laptop Per Child" Project (NICI Ⅲ)

	NICI Ⅰ (2000-2005)	NICI Ⅱ (2006-2010)	NICI Ⅲ (2011-2015)	NICI Ⅳ (2016-2020)
Objectives	Groundwork of ICT sector	ICT Infrastructure	Service Delivery	knowledge-based economy
Goals	To build the foundation and create an enabling environment for ICT development	To develop and deploy world class ICT infrastructure	To accelerate service development through ICT	To consolidate the NICI process towards achieving a middle-income country status
Primary Project	Opening telecommunication market	Set up of Data Centre, nationwide internet 4G fiber	"One Laptop per One Child" program	Private sector and community development

As one of the primary projects of NICI Ⅲ, One Laptop Per Child(OLPC) was implemented to enable Primary school students an early access to. As a result, 267,000 laptops have been deployed to over 900 schools

Business Acceleration Overview (NICI IV)

政策研究大学院大学
NATIONAL GRADUATE INSTITUTE
FOR POLICY STUDIES
GRIPS
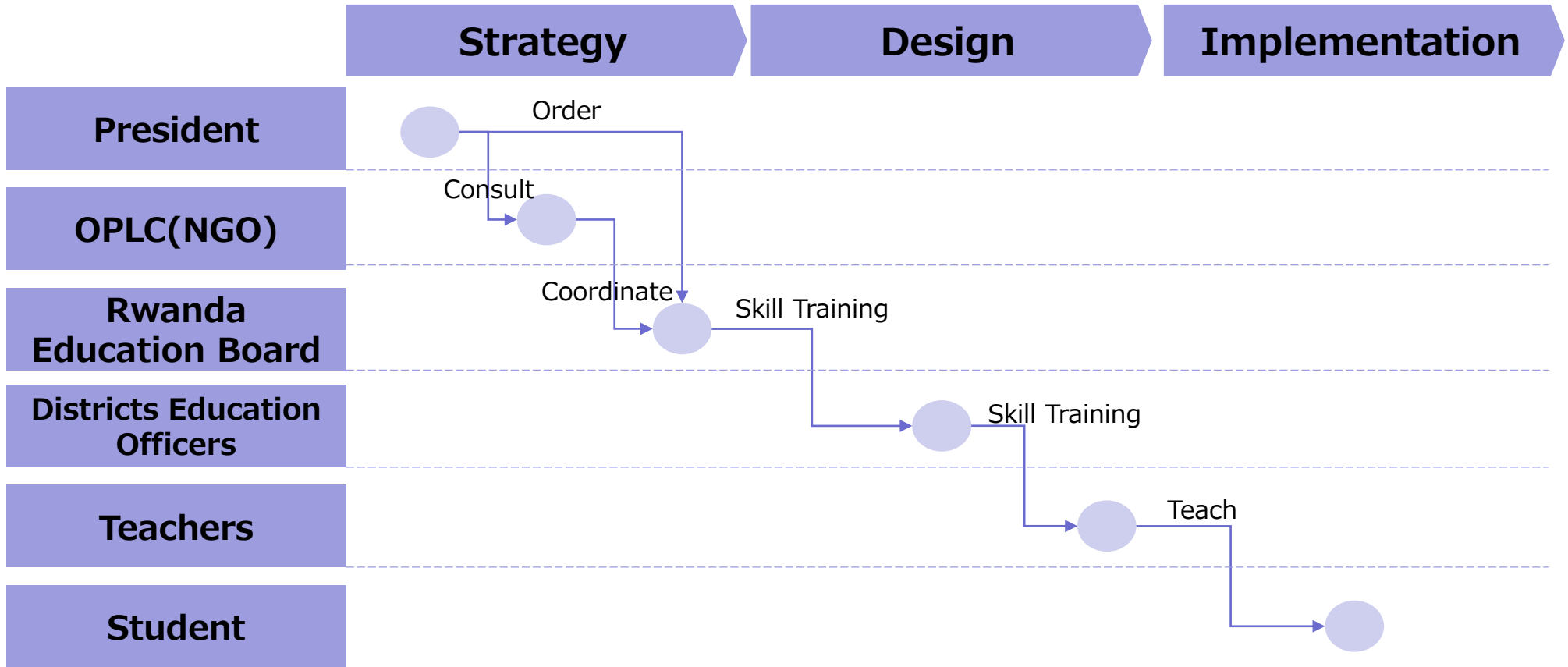
	NICI I (2000-2005)	NICI II (2006-2010)	NICI III (2011-2015)	NICI IV (2016-2020)
Objectives	Groundwork of ICT sector	ICT Infrastructure	Service Delivery	knowledge-based economy
Goals	To build the foundation and create an enabling environment for ICT development	To develop and deploy world class ICT infrastructure	To accelerate service development through ICT	To consolidate the NICI process towards achieving a middle-income country status
Primary Project	Opening telecommunication market	Set up of Data Centre, nationwide internet 4G fiber	"One Laptop per One Child" program	Private sector and community development

NICI IV attempted to create knowledge-based economy through empowering entrepreneurs. As a result, more than 40 startup companies were created.

Strategy > Design > Business Incubation > Business Expansion

President		Order
Ministry of ICT Innovation		Set Up
Incubation environment	250 STARTUPS	Catalyze
Startup Corp.	SOLVIT AFRIC	Expand
International Communities	jica	Advice & Coordinate
Foreign Investors	MasterCard	Invest

Topics

Evaluation of Achievements

Promotion of ICT policy did not contribute to meeting many of provisioned KPIs

VISION2020's ICT-related KPIs
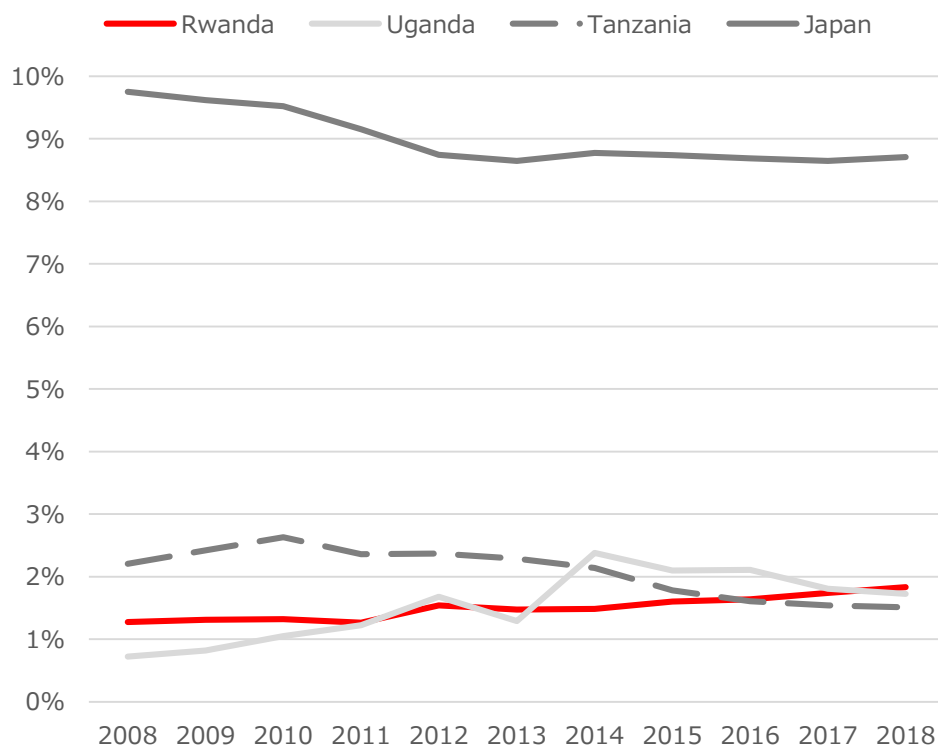
	Situation in 2000	Target in 2020	Achievement in 2020	Evaluation
GDP per capita	220 USD	1,240 USD	797 USD	✗
GINI Index	48.5	35	43(2016)	✗
Electronic payment transaction	0.3%	75%	27%	✗
Access to electricity	6.2%	35%	47%	○
Internet Penetration Rate	0.1%	50%	27%	✗
Mobile Subscription Rate	0.5%	60%	82%	○
Urban Population Rate	15%	30%	17%	✗

Evaluation of Achievements (Cont'd)

Rwanda's ICT sector neither contribute to GDP nor create job opportunities.

Proportion of ICT Sector accounting for Total GDP

Legend: Rwanda, Uganda, Tanzania, Japan

Proportion of Employment by Sector(2021)

Sector	Value
Total Employment	100%
Agriculture, forestry and fishing	52%
Manufacturing	4%
Construction	9%
ICT	0.3% (9,905)
Others	34%
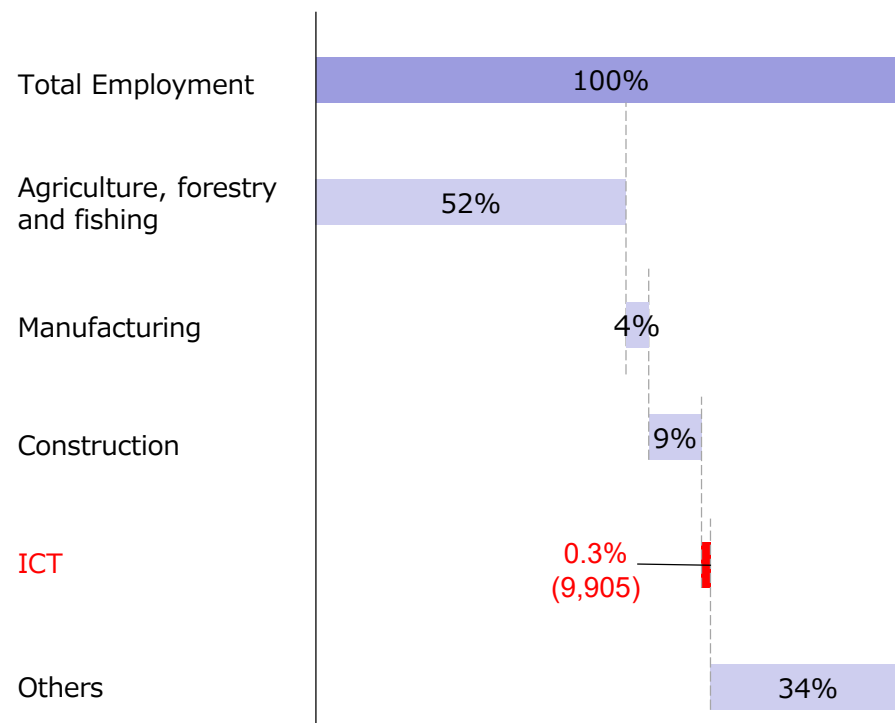
Obstacles

Different aspects stretching from strategy, preconditions, and business skills, dampen Rwanda's ICT policy

	Problems	Issues
Strategy	Feasibility of job creation	It might be better to prioritize other domain which could create more job opportunities
Design & Blueprint	Non-Decent IT Infrastructure	Low Internet Penetration Rate
		Limited Awareness of ICT's benefits
Implementation	Low Survival rate of ICT Startups	Issue with Customer acquisition
		Issue with Financial management

Topics

1. Introduction of Rwanda's ICT Policy

2. Design & Implementation of Rwanda's ICT Policy

3. Evaluation of Rwanda's ICT Policy

4. Implications of Rwanda's ICT Policy

5. References

Implications

Implications from Rwanda's ICT policy imply the importance of grounded and inclusive development policy

Theme		Implications
1	**Strategy**	Although DX sounds arresting, inclusive economic growth cannot be attained when a majority of citizens engage with primary sector in rural area with inadequate infrastructure.
2	**Job Creation**	Instead of a leap-frog approach, incremental and realistic approach may be necessary to generate decent employments, because highly digitalized-business takes lots of time and investments
3	**Monetization**	Comprehensive HR development approach is imperative because being knowledgeable in ICT and operating & expanding business require different skills.

Topics

1. Introduction of Rwanda's ICT Policy

2. Design & Implementation of Rwanda's ICT Policy

3. Evaluation of Rwanda's ICT Policy

4. Implications of Rwanda's ICT Policy

5. References

References

Page	Title	Link
5	RWANDA VISION2020	https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/RWANDA%29%20Rwanda%20Vision%202020.pdf
6	ルワンダの開発と政府の役割 ― 開発ガバナンスと民主的ガバナンスの相剋―	https://cir.nii.ac.jp/crid/1390853649334379776
8	National ICT Strategy and Plan NICI	https://www.itu.int/en/ITU-D/Cybersecurity/Documents/National_Strategies_Repository/Rwanda%20NCSS%20NICI_III.pdf
9	Internet Penetration Rate	https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=RW
11	Rwanda OPLC	https://wiki.laptop.org/go/OLPC_Rwanda
12	STARTUP250	https://www.250.rw/
15	World Bank Database	https://data.worldbank.org/country/rwanda
15	National Institute of Statistics of Rwanda, "GDP National Accounts (First Quarter 2022)"	https://statistics.gov.rw/publication/gdp-national-accounts-first-quarter-2022
15	National Institute of Statistics of Rwanda, "Labor Force Survey Trends-February 2022(Q1)"	https://www.google.com/url?client=internal-element-cse&cx=013903359814662352932:ensiaa7intk&q=https://www.statistics.gov.rw/publication/1808&sa=U&ved=2ahUKEwivuarBn9n4AhWcpVYBHSMUDMsQFnoECAIQAg&usg=AOvVaw28dubQsdBcwZzr86Pbe2xo
15	Uganda Bureau of Statistics, "GDP Expenditure Fiscal Year 2018"	https://www.ubos.org/explore-statistics/statistical-datasets/
15	Tanzania National Bureau of Statistics, "National Accounts of Tanzania Mainland 2020"	https://www.nbs.go.tz/index.php/en/census-surveys/national-accounts-statistics/na-statistics-by-subject?highlight=WyJnZHAiXQ==
16	The New Times, "Why do majority of local ICT startups fail?"	https://www.newtimes.co.rw/business/why-do-majority-local-ict-startups-fail

Notes:
• All Data is accessed on July 7, 2022