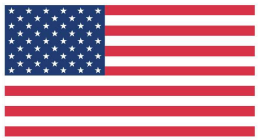

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Narrowing Digital Talent Gap Across Southeast Asia: A Comparative Study

Team 7

Team 7

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Introduction

Problem

What are the main issues behind digital talent gap across Southeast Asia?

Objectives

(i) Map out the root causes that promote widening digital talent mismatch;

(ii) Assess digital related skillsets that are currently in demand;

(iii) Review initiatives available in at least five ASEAN countries to upskill and reskill existing talent pool; and

(iv) Analyze high-level strategies to advocate for in order to improve talent availability in the long run

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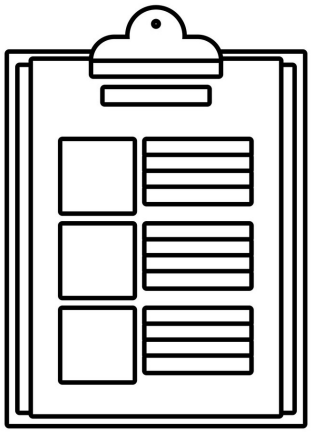
Introduction

Methodology

- Desktop research and document reviews of existing secondary data



Scope and Limitations

- Data reviewed was limited to the 5 countries where the researchers are from: Cambodia, Indonesia, Laos, Philippines and Vietnam
- There was limited time-frame (1 week) to conduct the project
- The research was focused on the objectives presented in the abstract
- Most of the resources used were from published literature available online

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Definition of Term/s

1. Digital Talent:

The **talent**ed employees who are able to adapt and use the existing **digital** technologies by IGI Global. (2021)

Situation: Cambodia

DIGITAL MANPOWER

SHORTAGE ICT SKILL SUPPLY

of businesses in IT Sector are **unable** to hire staff with **adequate IT skills**

Source: World Bank, 2018

KONRAD ADENAUER STIFTUNG in 2019 surveyed 61 companies for about 100 employees. They found out:

1. Only half of the employees surveyed understand what a "**digital economy**" entails.
2. Half of them think their ICT skills are at most "**average**".
3. **82%** of the employees use basic technologies (office, internet, email) while less than **40%** say they do video calling, use online storage and productivity tools.
4. More than **72%** of the employees say they cannot depend on their company to upskill them.

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Root Causes Digital Skill Gaps: Cambodia

Table 21: Summary statistics of ICT scores for difference competence areas

Score type	Mean			St.Dev		
	Hi.Sch	Univ.	EMPL	Hi.Sch	Univ.	EMPL
Hardwar/Software	52.3	49.9	45.4	18.3	17.6	25.2
Information literacy	45.3	52.9	53.1	15.4	16.5	19.2
Content creation	50.0	48.0	62.8	22.8	16.9	30.8
Safety	36.8	38.1	43.2	21.0	19.7	19.5
Overall	47.3	47.9	50.6	15.3	13.0	17.1

The overall results indicate low digital literary scores (averaging between 47 to 51 points) in all of the four competence areas assessed and are consistent across the three youth groups. Safety area received the lowest scores (between 36 to 44 points) among the four tested areas, while all three groups performed poorly in this competence area. Figure 7 provides a more visual clarity to the literacy levels. To be considered digitally literate in a rapidly globalized and connected economy, this study expected the youth to emerge with an average overall score of 75 or higher with no competence area lower than 65.

Based on these results, our immediate attention went to the safety competence area, where youth's ability to safeguard themselves, their peers or colleagues against harmful digital adversaries such as scam, phishing or security breaches is questionable.

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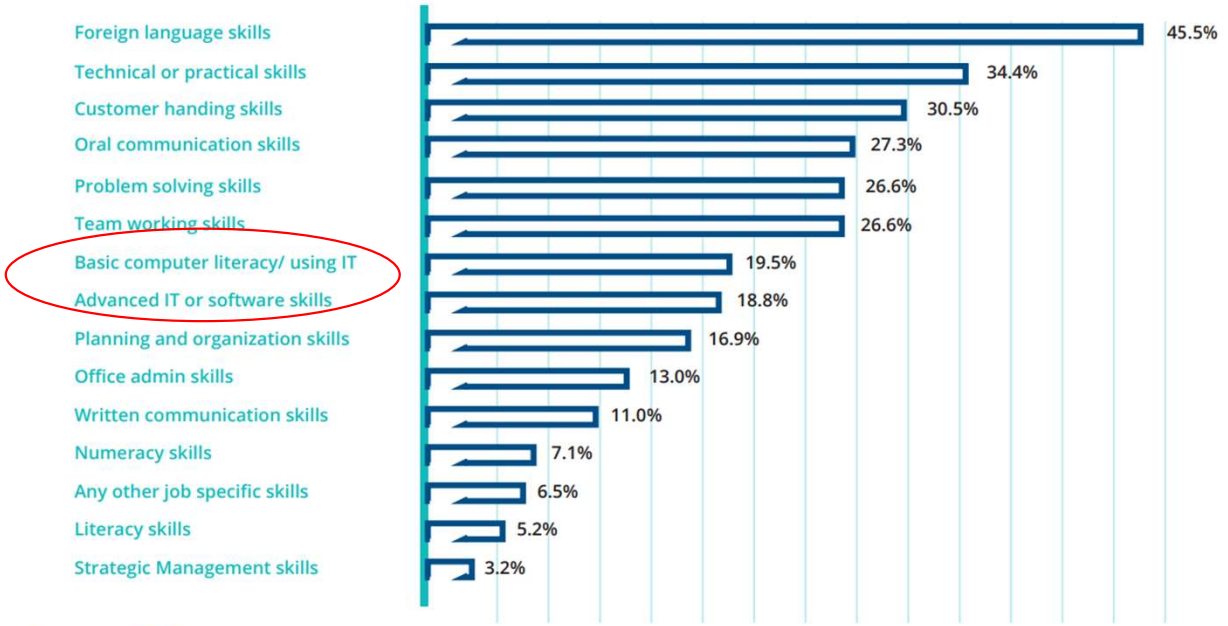
High Demand Skills: Cambodia

1. I

Figure 5: *: Types of skill shortage*



Source: *Employer Survey, 2018*

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Existing Solutions: Cambodia

Key Enablers	Infrastructure	Capacity Building	Innovation Ideas
Government	• Cambodia Digital Policy, • Innovation Center, CamTech University • Cambodia ICT Award • Cambodia Academy of Digital Technology	• Public Forum: Industry 4.0 • Digital Literacy Forum	E-tax, Inter-ministries cloud storage information
Private Company and International	Local Company • Telecom Company offer wide range of internet • Koompi IOS • Kirirum Institute of Technology	• Sister of Code, • Talent Renewal Business Consultancy • Women in Tech Community • Tech for Kids • BarCamp Cambodia • Cambodia 4.0 Center	• Tech Talents Skill Matching Platform
		• Microsoft Innovation Program, • Facebook Blue Certificate • Google Certificate Program • Amazon AWS Training Program.	
NGOs/ International or Regional Agency:	UNDP Cambodia	• ASEAN Digital Innovation Program • YSEALI Programs	HomeApp, KlemBox, S&C, Wheelciti (1)

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Source: Bridging the gap: Reshaping tomorrow for the young Cambodian workforce | UNDP in Cambodia (1)

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Recommendation: Cambodia

Recommendation on how to bridge digital talent gap:

- ✓ Promote **Digital Literacy** in public education and building in **ICT System**
- ✓ Continue to offer **Youths in Upskill & Reskill** training for more employability as well as preparing them in emerging tech-start-ups.
- ✓ Roll-out **Digital Literacy For MSMEs** to effectively gain advantage of e-commerce bubble.

  (Traditional Business Need to Innovate to thrive in the future digital economy)

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2.UNDP Cambodia. (2020). *Digital Literacy for Employability and Entrepreneurship among Cambodian Youth* (p. 44). Phnom Penh: UNDP Cambodia. Retrieved from https://www.kh.undp.org/content/cambodia/en/home/library/assessment-of-digital-literacy-for-employability-and-entrepreneu.html

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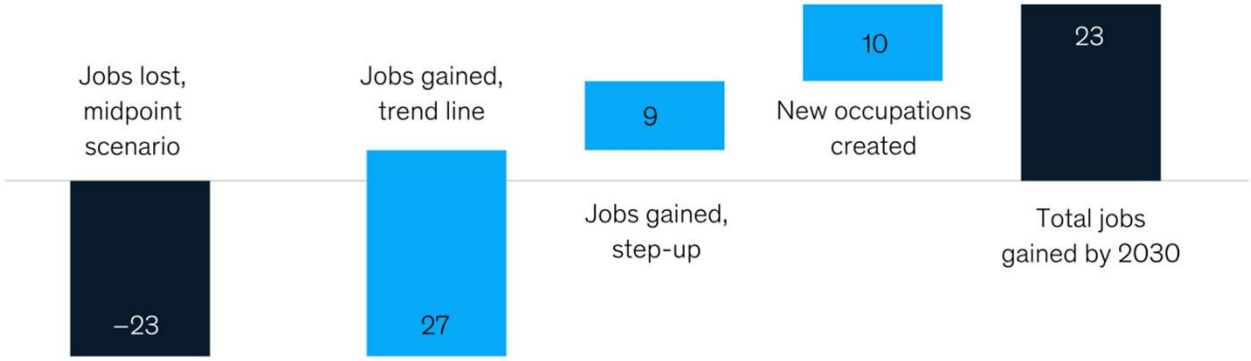
A Myth: Digital Transformation Automates Business Processes and Demotes Occupation

Projections show that, in Indonesia, many more jobs will be created than lost to automation by 2030.

Automation scenarios and additional labor demand from seven catalysts, 2014–30, million



Note: Identified 7 catalysts of labor demand globally (rising income; healthcare spending; investment in technology, buildings, infrastructure, and energy; and marketization of unpaid work), then compared number of jobs to be replaced by automation with number of jobs created by catalysts, as well as change in labor force, between 2014 and 2030. Another study has shown that, on average, 0.5% of workforce has been working in "new jobs" every year.
Source: "Jobs lost, jobs gained: What the future of work will mean for jobs, skills, and wage," McKinsey Global Institute (MGI), November 2017, McKinsey.com; Jeffrey Lin, "Technological adaptation, cities, and new work," *Review of Economics and Statistics,* May 2011, mitpressjournals.org; MGI analysis

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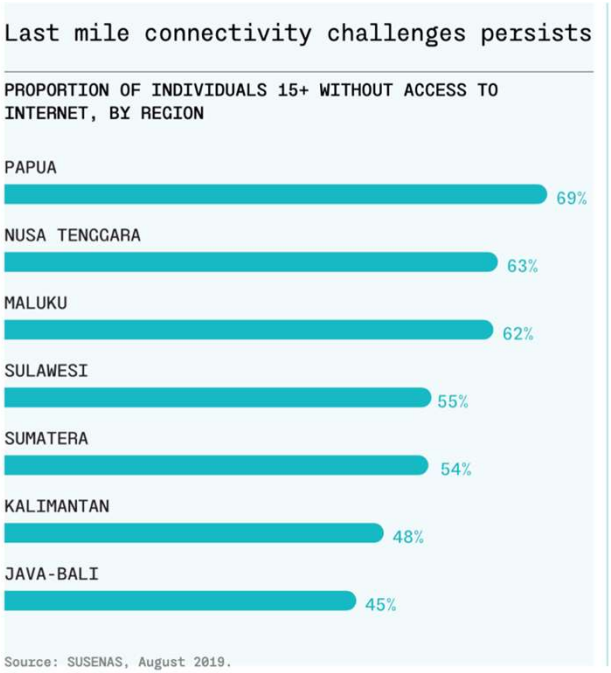
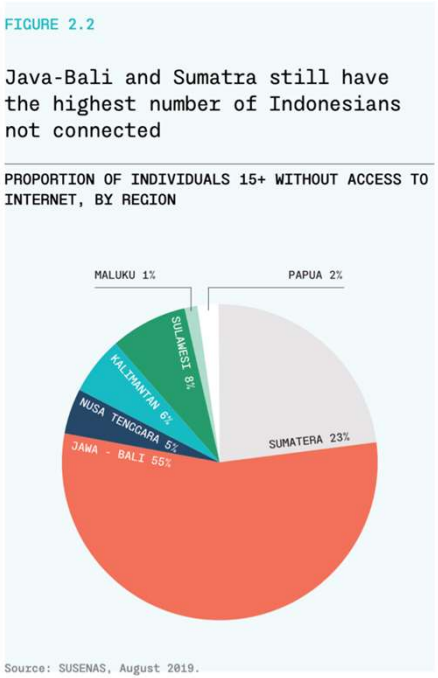
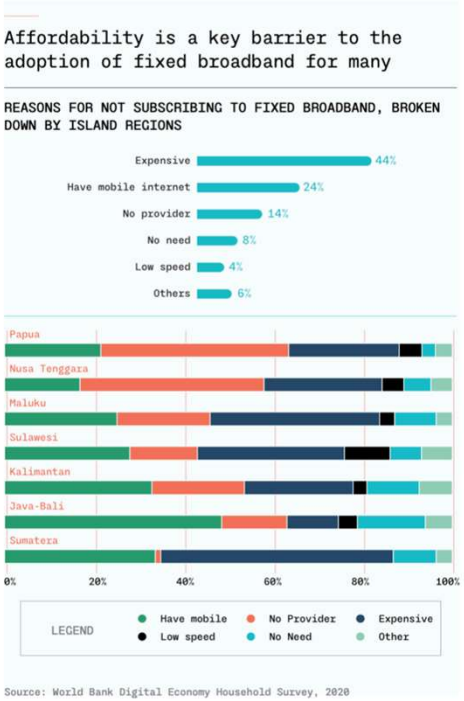
Digital Disconnect Dwarfs Indonesia's Talent Growth







Although connectivity has drastically improved in the last few years, over 49 percent of Indonesians still don't have access to internet.

This deprives half of the country from learning from home during COVID-19 semi lockdowns and from remote, flexible working arrangement (FWA).

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Which Tech Talent Has the Largest Gap?

This exhibit exemplifies the type of job profiles with highest supply-demand gaps.

It reveals that skillsets on public-facing parts of a product are in high demand, including front-end developers and UX/UI designers. Although other profiles are all in deficit!

EXHIBIT 2 | Strategic Workforce Planning Reveals Future Gaps

DIGITAL STAFFING GAPS (NUMBER OF EMPLOYEES)

JOB PROFILES	2016 actual	2017	2018	2019	2020	2021
FRONT-END DEVELOPER	20	–4	–7	–9	–26	–82
DIGITAL PRODUCT MANAGER	4	–1	–2	–12	–73	–63
SOLUTION ARCHITECT	5	0	–1	–1	–1	–2
BACK-END DEVELOPER	15	–5	–27	–9	–45	–52
UX/UI DESIGNER	30	–15	–62	–62	–71	–74

Shortfall (%) –75 –50 –25 –15 –5 5 10 15 20 25 > 25 Surplus (%)

Source: BCG analysis.
Note: Shortfall/surplus data represents percentages of required workforce.

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Short and Long-Term Hacks to Narrow This Gap

SHORT TERM

- **Strengthen tech community:** normalize and deformalize knowledge sharing among experts and professionals.
- **Nurture talents across layers of hierarchy:** digital transformation awareness for decision makers; agile culture in middle management; technical skill updates for the ground troops.
- **Upskill, reskill:** identify types of work with potential automation, protect losers, promote shifts in learning.

LONG TERM

- **Stimulate open-source culture:** improve documentation, crowdsourse solutions; decommercialize learnings.
- **Modernize curriculum:** including vocational schools and capacity building for teachers; mainstream soft skills to agile ways of working, data analysis, ethics and problem solving behind algorithm and programming language.
- **Increase connectivity and investment in ICT:** design inclusive infrastructure, improve analogue support that enable vibrant digital ecosystem (including logistics and electrification) to enable remote learning and FWA.

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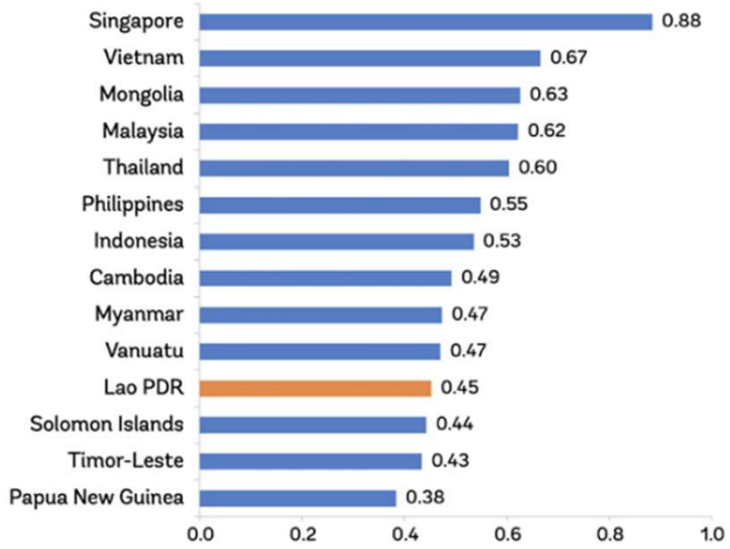
Situation in Laos

Figure 38: Despite progress over time, Lao PDR's HCI still lags other countries in the region, 2017



Source: World Bank Human Capital Project.

- Laos is one of the youngest populations in Asia Pacific, with roughly 60% of the populace **under the age of 25**
- **Human Capital Index** of Laos is still lagging other countries in the region.
- The government of Lao PDR has embarked on a **strategy to accelerate digital transformation** focusing on key priorities, such as infrastructure readiness, the development of supporting technology, nurturing digital talent and literacy, and improving regulations on the digital ecosystem.
- We are all adapting to the new normal and are **accelerating digital solutions to support business** continuity.
- In 2019, there were 2,603 registered ICT companies; increased by **37% from 2017**.

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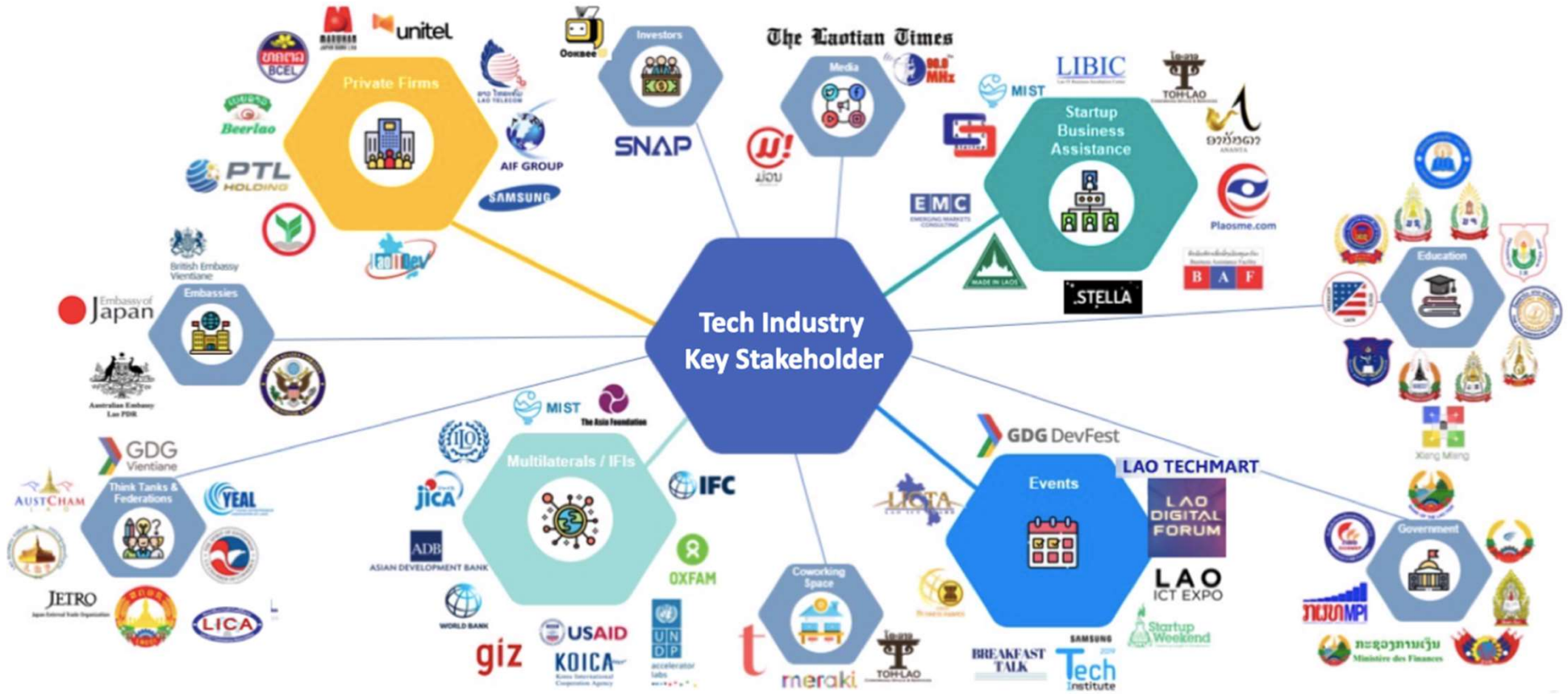
Key Stakeholder in the Industry



Source: Department of Small and Medium Size Enterprise

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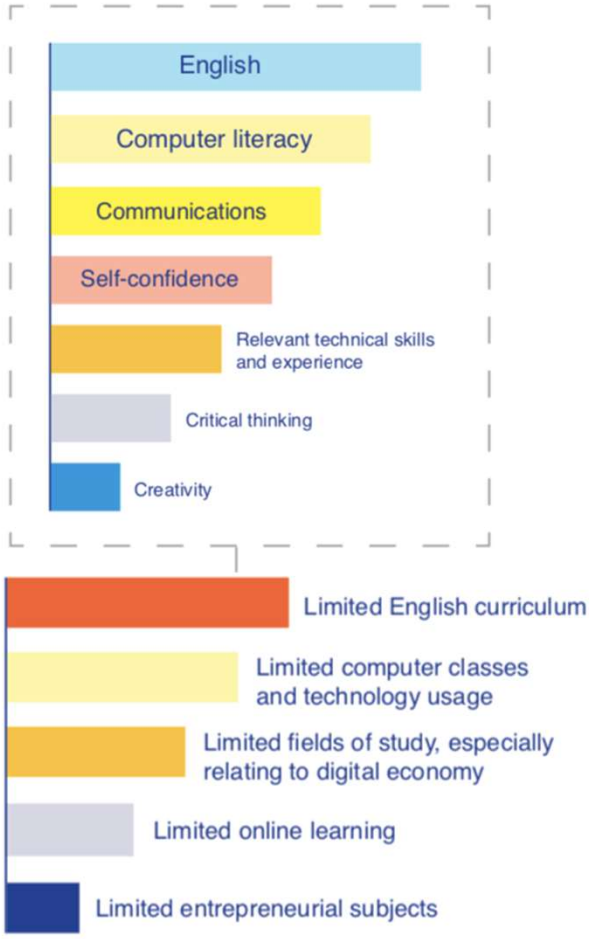
Root Causes of Talent Mismatch in Laos

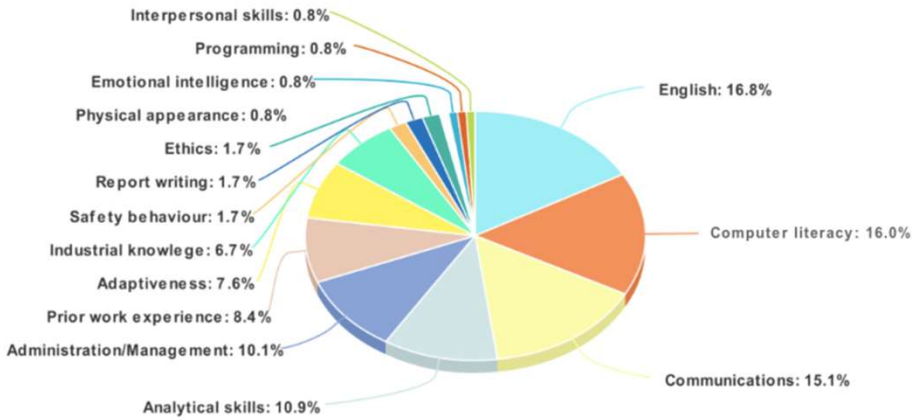
Recruitment issues faced by employers



- 69% of software development work is outsourced overseas to providers from Thailand, Singapore and India.
- According to the survey with 20 startups and 47 IT companies, 69% of businesses stated they need better qualified staffing candidates in tech field.
- According to the Report on Youth Unemployment Issues in Lao PDR by UNDP found that 100% of the unemployed respondents stated that colleges and universities do not effectively prepare graduates for the job market.
- Policy: inadequate communication between policy makers, schools, and the private sector hinders employment opportunities and creates more of an imbalance in supply and demand

Source: UNDP

Digital Related Skillsets Currently in Demand



Skills that employers require from job applicants

Source: UNDP

The following specific skills are needed for ICT sector according to the survey:

- Software Development: solid programming language and algorithm knowledge
- Mobile and web-based application development: Flutter, React Native, Android Java/Kotlin, IOS swift
- Platform development language e.g. Kubernetes, Docker, VM, TCP/IP knowledge
- High level network infrastructure planning and cloud architecture
- Language skills: English, Chinese, Vietnamese
- Soft skills: Project management, sales and marketing, design thinking
- Telecommunication engineering on satellite and mobile technologies
- Sectoral know-how: FinTech, new technology
- Graphic design

Existing Initiatives to upskill and reskill

Education Sector

Private Sector

International Organization

Other institute

LICA
Lao ICT Commerce Association

THE MAKER BOX

GDG Vientiane

STELLA

Xiang Miang

ACSTEMlab

LJI
LJI Exchange Activity Division
ພະແນກແລກປ່ຽນກິດຈະກຳ ສະຖາບັນລາວ-ຍີ່ປຸ່ນ

Ministry of SMEs and Startups

U.S. EMBASSY
Vientiane

Australian Embassy
Lao People's Democratic Republic

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Strategies to improve talent availability in the long run

- Improve the coverage and quality of education.
- Join force with private sector on building ready to use tech talent.
- Organize nationwide workshop to promote digital literacy and tech talent.
- Conduct a market need research and apply in the curriculum design.
- Collaborate with international organization in order to encourage international exposure for the young people.
- Strengthen and promote tech and startup industry.

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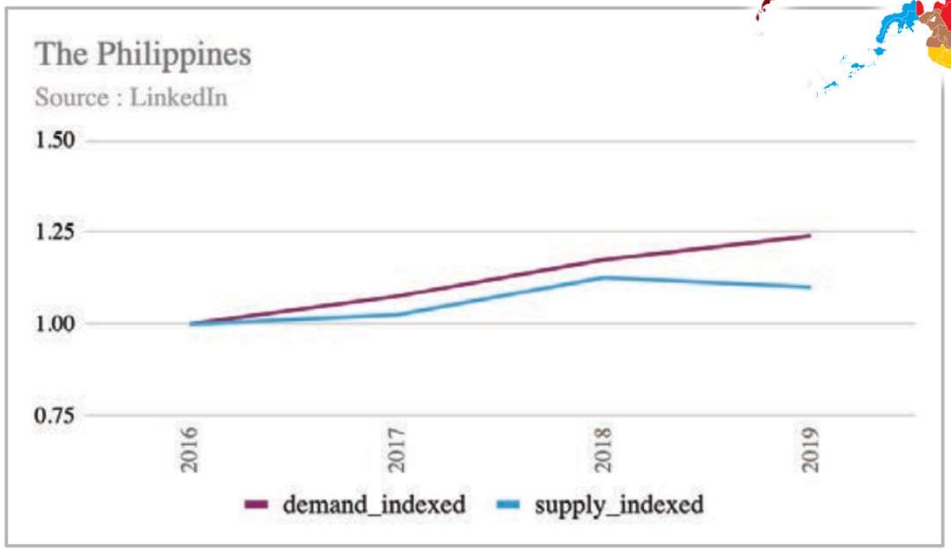
Situation: Philippines

- 73.91 million internet users
- 72.1% of total population has a smartphone
- In urban areas, 82.5% of Filipinos aged 10 to 64 surf the internet for social media
- In rural areas, 52.3% of Filipinos aged 10 to 64 surf the internet for research work and email
- About 96.1% of Filipino households have at least 1 ICT device



A4.8 - Graph 3: Digital supply and demand

Source: Data Reportal and Philippine Statistics Authority

Source: APEC/LinkedIn

Root Causes Behind the Digital Talent Gap in the PH

Lack of ICT Infrastructure

Lack of equity in access to digital tools

Lack of access to quality education

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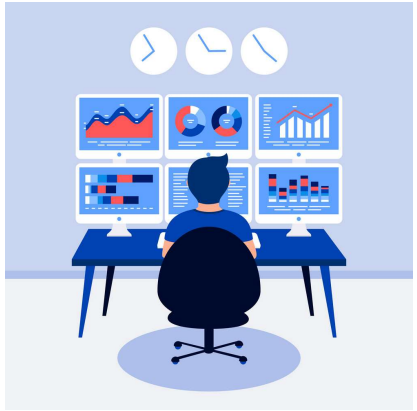
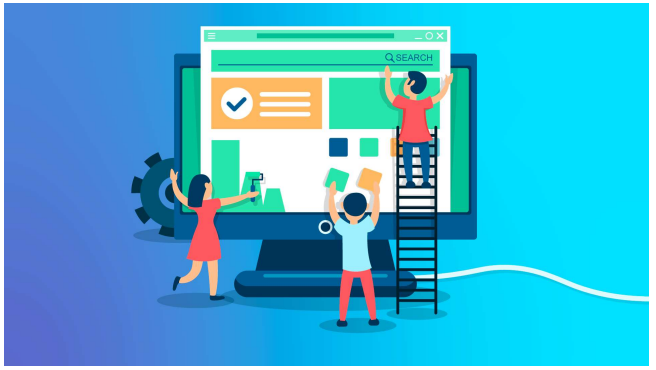
Digital Skillsets in Demand

Software and Information Technology



Data Analytics



Graphic and Web Design

Digital Marketing

Game and Mobile App Development

Computer and Networking Support

Customer Relationship Management

Source of Images: VectorStock/ShutterStock

Existing Solutions & Efforts Initiated to Upskill & Reskill

Executive Order 127

Philippine Skills Framework

Sector Information, Career maps and pathways, Job roles, Competencies

DEVCON

Non-profit organization that empowers Filipino developers and future geeks.

National Broadband Plan

Building Infostructures for a Digital Nation

Multi-stakeholder collaboration

Microsoft

Skilling initiative to assist Filipinos

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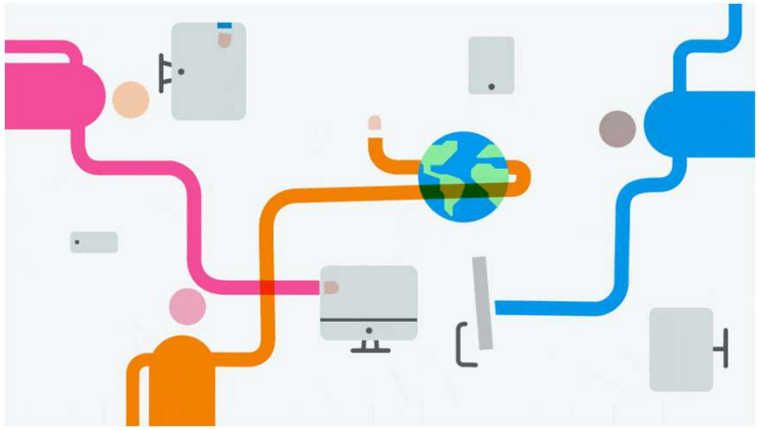
Strategies to Improve Talent Availability in the Long Run

- Whole of Government and Society Approach to Address the Existing Digital Skills Gap
- Strengthen Public-Private Partnerships
- Empowerment of Businesses through Digital Acceleration
- Build coalitions and networks that would drive innovation
- Integration of other skills to bridge the digital talent gap



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Digital Situation in Vietnam

- According to the 2020 Global Innovation Index (GII), Vietnam maintained its 42nd position for the second year in a row.
- Rank 96th in the 2020 Global Talent Competitiveness Index (GTCI)
- The Vietnamese talent pool can meet about 80 per cent of employers' requirements in manufacturing. In IT, technology (AI, Automation), the Vietnamese talent pool can only meet about 60 per cent of requirements.

Ranking in 2020	Country comparison in South East Asia						
	SG	MY	TH	ID	PH	VN	VN (2019)
GII[2] (out of 131 countries)	8th	33rd	44th	85th	50th	42nd	42nd
GTCI[3] (out of 132 countries)	3rd	26th	67th	65th	46th	96th	92nd

https://www.pwc.com/vn/en/publications/2021/pwc-vietnam-digital-readiness-report-en.pdf text

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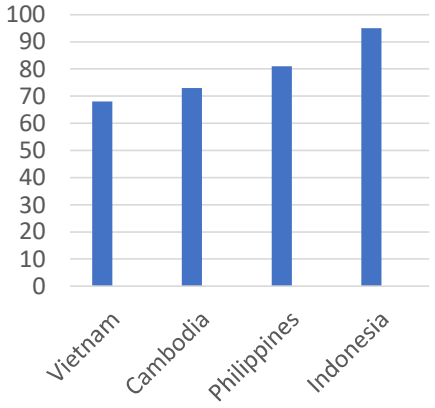
Existing problems in Vietnam

Some existing problems:

- 68% of training institutions in Viet Nam reported feeling well-equipped for 4 industry revolution
- Only 4% of training institutions in Viet Nam reported using online training platforms
- 18% reported using augmented reality and virtual reality tools for training
- Most company are doing **outsourcing** for American, Singapore and Japanese companies
- Do not have a **mature ecosystem**
- Vietnam's **culture** (competitive, gender, …)



https://www.adb.org/news/viet-nam-deepen-skills-development-transition-industry-4-0-adb

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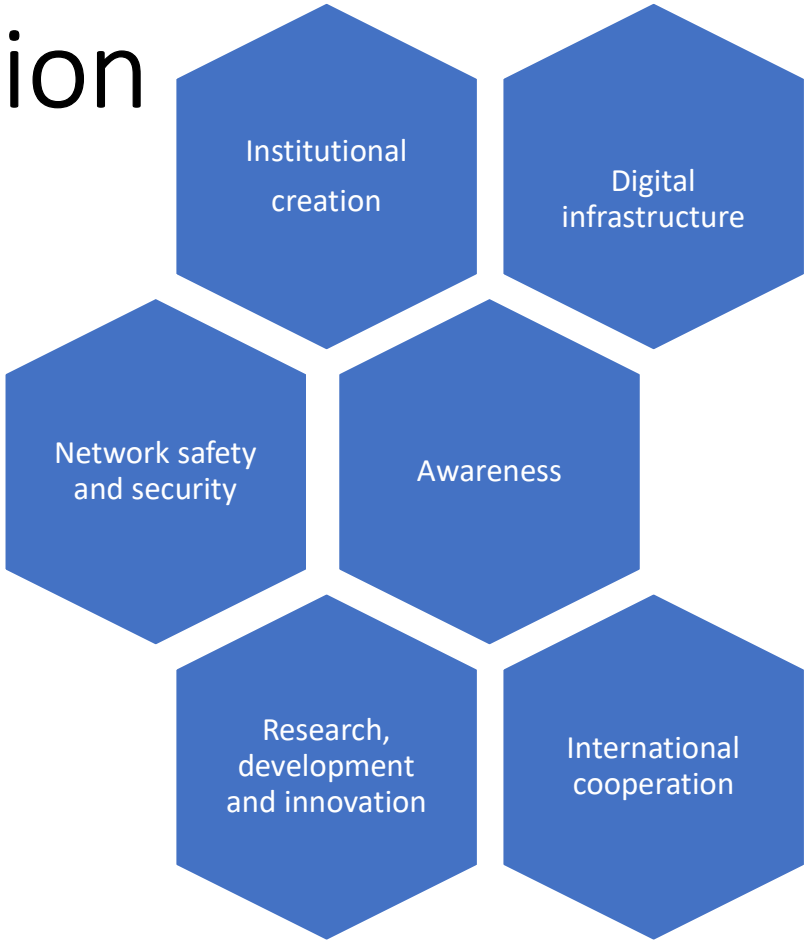
Government Action

Government's Policy

- Convert awareness
- Institutional creation
- Development of digital infrastructure
- Develop digital platform
- Creating trust, ensuring network safety and security
- International cooperation, research, development and innovation in a digital environment



http://asemconnectvietnam.gov.vn/default.aspx?ID1=2&ZID1=14&ID8=99391

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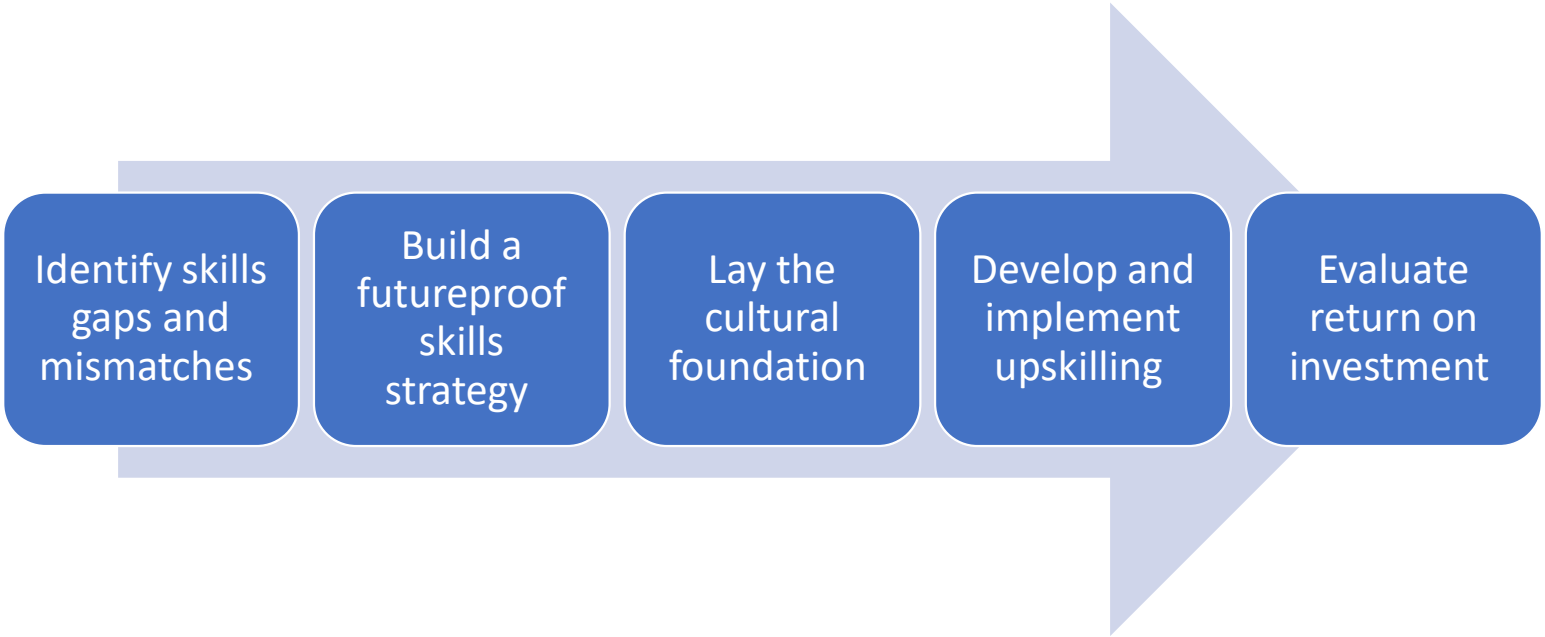
Vietnam

Private sector's solutions

- Establish institutions (FPT University, Phenikaa University, Vin University,…)
- Organize activities for students (Hackathon, Conferences, Summer school, …)
- Provide free the internet connections and computers for school (Viettel, FPT...)
- Develop applications for teaching, seminars and self-studying (Viettel Study, …)

Recommendations



https://www.pwc.com/vn/en/publications/2021/pwc-vietnam-digital-readiness-report-en.pdf

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Conclusion

- Talent is core engine for digital transformation, there's a tech talent gap in the market and it is challenging growth of the region.
- In order to narrow down the gap it requires collaborations from many sectors together such as educators, private sectors and international organization.
- Create awareness, promote digital literacy and nurture the tech industry is a must.

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