Module 3 Business and People

Welcome to the third Module of the course, which covers the Business and People pillars of Digital Transformation. We will begin with the topic of business and fostering inclusive local digital innovation.

Part 1: Business: Fostering Inclusive Local Digital Innovation

Innovation is an essential driver of economic growth, job creation, human development and poverty reduction. Entrepreneurs and start-ups play an important role in innovation. The word "start-up" is most frequently used for a specific type of business venture, specifically that which is technology-

oriented, versus a more traditional business venture such as a retail store. ICT is a major industry in virtually all the SIDS, generating direct and indirect economic impacts, often accounting for a higher share of GDP in small islands than in other countries. Telecommunication operators in the SIDS are often among the largest companies, contributing significantly to government tax revenues, and are leading sources of employment. ITU defines the digital innovation ecosystem around three engines of growth, the national innovation ecosystem, the entrepreneurial ecosystem and the ICT/Technology Ecosystem and offers an online course for building a competitive ecosystem on the ITU Academy platform. Find additional information in the course materials. We will discuss some aspects here.

Entrepreneurs who wish to start a business embark on a journey during which they move from idea to concept, monetizable concept, formal business concept, and finally, a business that a bank is willing to finance. Along the journey, entrepreneurs need access to a number of elements which will be presented in the next few slides.

In the first place, digital innovators need a safe, conducive and inspiring ecosystem to foster ideas. Such ecosystems include co-working spaces, innovation hubs, tech incubators, tech accelerators, fablabs and technology clusters.

Secondly, digital innovators need entrepreneurship skills if they want to bring their inventions to market. In fact, they need a combination of advanced digital skills and entrepreneurship skills, provided through a mix of education and training, mentoring and coaching. Training programmes for small businesses and entrepreneurs have proliferated across SIDS, particularly as governments and development partners are aiming to support adaptation to COVID-19 pandemic measures and going digital in operations. For instance, in the Eastern Caribbean, UNDP has partnered with the University of the West Indies and the Frankfurt school to offer 350 businesses with training on business skills,

including digital technologies, financial planning, and marketing, with a focus on the tourism sector and women-owned businesses. In Asia-Pacific the UNDP Youth CoLab supports youth entrepreneurship, working closely with governments, civil society and the private sector across the region, to strengthen the entrepreneurship ecosystem and policy environment to better enable young people to take the lead on new solutions that will help meet the SDGs.

Thirdly, digital innovators need different types and amounts of funding at different stages along the journey to becoming a solid business that is eligible for commercial small or medium-sized business loans. Pre-seed funding, the money to help digital innovators turn an idea into a monetisable concept, typically comes from the 3 Fs: the start-up's Founder(s), Friends, and Family. Seed funding, in the form of grants or equity, comes from individuals and organisations willing to take risk. In most countries in SIDS, government agencies, donors and large corporates offer grants to entrepreneurs, with some targeting innovative entrepreneurs. Many innovation hubs channel diversified funding to the start-ups they support.

Finally, digital innovators need an enabling environment to set up and operate a business.

SIDS are characterized by small scale and fragmented markets and these pose specific challenges for creating an enabling environment for digital transformation.

A recent study from the UN Pacific Financial Programme showed that a primary challenge in supporting innovation in SIDS is the question of market scale. Over the past decade the programme has had significant success in extending access to formal financial services, partnering with every major telecom and bank brand in the South Pacific to explore the potential of these models, starting in 2010 with the launch of the first mobile money services in the Pacific. The services showed exciting potential with 25% of the population registered for mobile money in the first year and with important gains for financial inclusion. However, with the notable exception of M-PAiSA in Fiji, all these services have had trouble standing the test of time. Each one has downscaled significantly or discontinued operations after these initial periods of success.

Most business models that drive the digital economy are underpinned by an initial high upfront capital expenditure investment that need to be recouped through a high volume of small value transactions. In SIDS markets this means that commercial investors need to be more patient as the time to break-even can take up to three times more time than has been observed in other markets (e.g. mobile money in African context can take between 3 to 5 years to break even, whereas in the Pacific this has taken more than 10 years for the more successful operators).

How to Foster Inclusive Local Digital Innovation

1. **Develop national innovation strategies**
2. Support innovation hubs and clusters
3. Support digital entrepreneurship skills development
4. Support funding for digital entrepreneurs
5. Support enabling environment for digital entrepreneurs

Governments that wish to foster local digital innovation can work with stakeholders to develop a national innovation and entrepreneurship strategy. They can support the development of local innovation ecosystems, support digital innovation and entrepreneurship skills development, and build an enabling environment that improves the ease of doing business and protects intellectual property rights. All these measures will help to convince international and local investors and funders to provide more capital to innovative entrepreneurs.

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Tech hubs play an important role in building fledgling entrepreneurial ecosystems and helping start-ups, but they struggle to earn revenue and become financially sustainable. Secondly, hubs are held back by the fact that the scope they have to connect companies with investors, or providing them with

a clear pathway to fundraising, is limited. Governments can support innovation ecosystems in several ways. For example, by fostering:

- · Hubs by or in partnership with local corporates or local research centres
- · Public-private partnerships for the establishment and operation of hubs
- · Partnerships, knowledge transfer and collaboration between hubs

Another policy that has proven to be successful is the establishment of regional technology clusters

Digital innovators need entrepreneurship skills to be able to commercialize the products and services they design and realize their potential for growth. Governments can support digital innovation and entrepreneurship skills in several ways. For example, they can map and analyze the available offer of entrepreneurship education and training. Then, with stakeholders, they can identify strengths and weaknesses in the available offer, and jointly develop a national entrepreneurship education and training strategy. Governments can also support collaboration and coordination between entrepreneurship skills development programs. It is important that governments make sure the outcomes from implementation are monitored, and evidence is used to improve the strategy.

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International and local investors benefit from all the support that governments can give to digital start-ups, including national innovation strategies, support for ecosystems, entrepreneurship skills development and the enabling environment. Other measures that can help are business plan competitions that provide high potential digital innovators with starting capital as well as non-financial support, or fiscal measures that allow young enterprises to make a profit as soon as possible, such as tax exemptions for digital start-ups and tax incentives for angel investors or venture capital funds that focus on innovative start-ups. International visa programmes can also help to catalyse the domestic sector. Governments can also reserve certain public contracts to start ups.

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Digital innovators need supportive regulation that makes it easy for them to set up and operate a business. Governments can help by working with stakeholders to make an inventory of business regulation currently obstructing the establishment and development of digital start-ups, prioritize laws and regulations that require reform, draft more supportive laws and regulation and get them approved, and finally implement the new laws and regulations.


The rise of networks and alliances between hubs and ecosystem builders, is creating new opportunities for digital innovation. Joining forces helps hubs to increase their exposure, avoid repetition, and share and adopt best practices. Initiatives linking government with private sector and development partners can help to incubate new ideas and some focus on supporting key sectors for SIDS, such as tourism, blue economy or climate action.

Cabo Verde offers a good example of a SIDS country where public leadership is helping to drive innovation and bring together the key stakeholders. The national government has placed a high priority on the digital transformation for the country with support to the innovation ecosystem as a key pillar. Cabo Verde Digital was established as a public agency to support innovation and incubation of start-ups through training, acceleration programmes and digital challenges. Cabo Verde Digital brings together a strong network of national and international partners that support its programmes and initiatives who are also committed to the vision of developing Cape Verde's digital economy, namely mobile operators, private sector entities, foundations, universities and international organizations, innovation incubators and technology companies. Together with UN and technology sector partners Cabo Verde Digital launched digital challenges in 2020 and 2021 to address key challenges stemming from the COVID pandemic, such as the need to re-invent tourism in the face of declining numbers. As a result of these efforts and their other efforts, in the past year Cabo Verde has risen by 11 places in the global rankings of the global Innovation Index of 132 countries, and is now ranks 4th in all of Africa.

To further support the innovation ecosystem UNDP has launched the Accelerator Lab network, the world's largest and fastest learning network on sustainable development challenges. The network now directly supports innovation in 29 SIDS countries, with many offering incubation and training to start-ups with solutions to development challenges, often featuring digital components.

Part 2 People: Inclusive Digital Skills
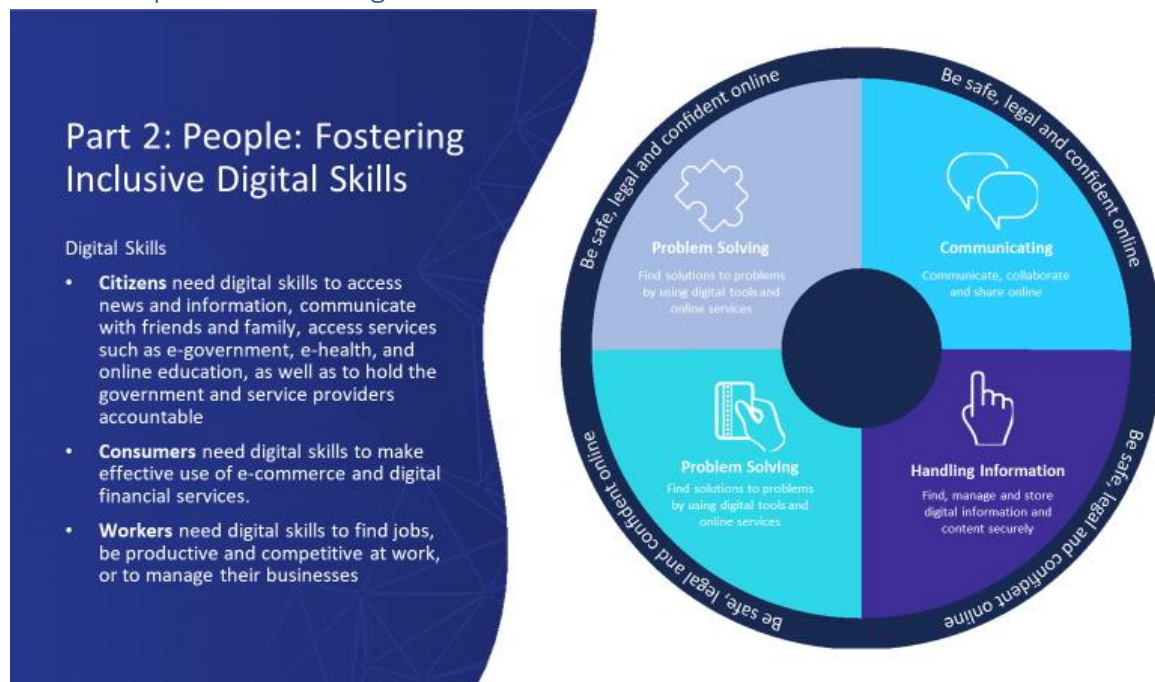
The second part of this module will focus on people and the importance of inclusive digital skills as a driver of digital transformation.

The digital transformation journey cannot be fully reached without ensuring all people in a society have the literacy and digital skills necessary to use the internet and basic applications and to participate in the development of digital solutions.

· As citizens, people need digital skills to access news and information, communicate with friends and family, access important services such as e-government, e-health, and online education, as well as to hold the government and service providers accountable.

· As consumers, they need digital skills to make effective use of e-commerce and digital financial services.

· As workers, they need digital skills to find jobs or to manage their businesses

Unless people develop digital skills, any investments in the enabling environment, digital infrastructure and digital innovation will not reach its potential.

Key Concepts

- Digital Skills
- Digital Literacy
- Digital Competence

A number of key concepts are presented in the course manual of this module that I encourage you to read. In this module we share UNESCO's definition of digital skills as a range of abilities to use digital devices, communication applications, and networks to access and manage information. We also provide definitions of the related concepts of digital literacy and digital competency.

Digital skills can be divided into Basic digital skills (Fundamental skills that enable people to function at a minimum level in society), Intermediate digital skills (Skills needed to participate as engaged citizens and productive workers), and Advanced digital skills (Skills needed by specialists in ICT professions such as computer programming, data science and network management). You can find the ITU Digital Skills toolkit in the resource material which develops these concepts further, along with recommendations for policy makers.

Measuring Digital Skills

One reason for the extreme scarcity of data is the complexity of defining different levels of digital skills

ITU and UNESCO have developed frameworks to measure progress on:

- SDG Indicator 4.4.1 % of youth/ adults with ICT skills

- SDG Indicator 4.4.2 % of youth/ adults who have achieved at least a minimum level of proficiency in digital literacy skills

Countries are encouraged to use these frameworks to collect data

A key problem for SIDS policy makers is the scarcity of objective data on digital skills. One of the reasons for the lack of data is the difficulty of defining different levels of digital skills, and selecting the most appropriate indicators to monitor. The international push to align national education goals with global Sustainable Development Goal 4 on Education has been accompanied by the development of a framework to measure digital skills. It includes two indicators:

· Indicator 4.4.1 The Percentage of youth/adults with information and communications technology skills, by type of skill, and

· Indicator 4.4.2 The Percentage of youth/adults who have achieved at least a minimum level of proficiency in digital literacy skills.

Countries are encouraged to use the framework to collect data. ITU and UNESCO have developed frameworks for these indicators and are collecting data from countries.

Digital Skills Channels

The various levels of digital skills can be imparted through formal educational channels, non-formal channels, and time-bound campaigns.

· Formal primary and secondary schools are ideally positioned to instill basic and intermediate digital skills. However, the formal education sector is slow to adopt curricular change. Besides, many schools do not have the necessary physical and human resources to be able to provide basic and intermediate digital skills training. Rural and low-income children, and especially girls are also excluded from schooling, and hence also to any formal digital skills training.

· Non-formal education channels complement the formal education system. They include community centres, public libraries, NGOs, after-school programmes, tech clubs, maker spaces and faith-based organisations. Increasingly the private sector is building capacity for MSMEs and others to improve digital skills. These channels can be used to provide basic and intermediate digital skills to in school as well as out-of-school children and youth, and adults. Critically, they tend to be more flexible than the formal school system, and thus able to react faster to changing needs.

· Digital skills promotion campaigns are a way to build awareness, create excitement and motivate people to learn basic and intermediate digital skills. A number of recent efforts at coordination and harmonisation are helping to streamline the multiple efforts at building digital skills. The ILO and ITU's Digital Skills Campaign under the Decent Jobs for Youth programme is one such effort to address fragmentation and catalyse effective, innovative and evidence-based action at a country and regional level. The purpose is to share and collaborate in order to unify disparate initiatives and scale up their impact in order to create sustainable change.

Digital Skills Channels

For advanced and specialised technical skills, learners have traditionally turned to higher education or technical and vocational education and training institutions. However, SIDS countries face several challenges here. Many people of working age cannot afford to stay in school for several years. Universities and institutions have a hard time to keep their curricula relevant to the world of work. And well-educated ICT-specialists face many temptations to seek employment outside their country.

· In terms of non-formal channels, commercial and non-commercial training providers offer an alternative to the formal education system. Some of these providing courses in advanced digital skills are expensive and may be out of reach for some and certificates may not be accredited or recognized. However non-formal online trainings are becoming increasingly accessible or even offered for free and are filling these gaps.

· Many governments organise campaigns to open the eyes of young adults to a career in ICT. To do this, some participate in global or regional campaigns, while others organise their own in partnership with private companies, NGOs or donors.
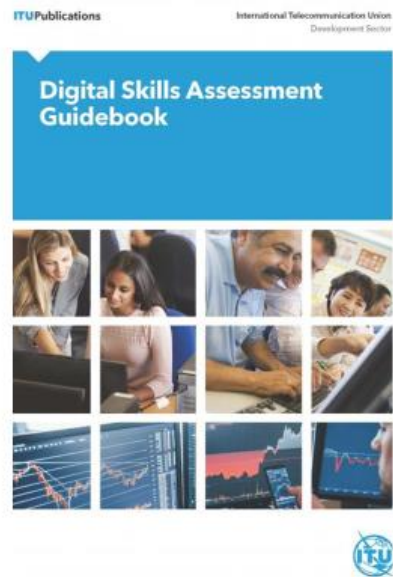
Before embarking on the development of specific policies or programmes, a national digital skills assessment should be carried out. ITU's Digital Skills Assessment Guidebook provides a step-by-step approach to assess the current demand and supply of digital skills, to identify gaps and to determine future skills requirements.

A digital skills strategy is a helpful tool to focus government efforts on digital skills development. ITU's Digital Skills Toolkit recommends a three-step process: 1) Engaging with stakeholders, 2) Making an inventory of needs, and 3) Drafting a digital skills strategy (or reviewing an existing strategy).

A digital skills strategy can include policy and regulatory measures, fiscal measures, as well as other measures to catalyse digital skills development. When it comes to policy and regulatory measures, many governments incorporate digital skills into the national curriculum for primary and secondary schools, make curriculum guidelines more flexible or encourage extra-curricular digital skills activities. To encourage non-formal digital skills training, some government re-assess their systems for accreditation and recognition of certificates.

In terms of fiscal measures, most governments invest public funds in formal school connectivity infrastructure and teacher digital skills training. Many also support non-formal providers, and invest in experiments with innovative approaches to digital skills training such as those offered by hubs. Some give financial support to stakeholders like NGOs that educate or train vulnerable groups. Others provide fiscal incentives to private companies to send their staff for digital skills training, or to tech companies to develop and implement affordable or free digital skills training.

Promotion of digital skills training is another role of the government. Many set the example by funding the up-skilling and reskilling of public employees, or championing digital skills campaigns. Some develop or encourage public-private, or formal-nonformal partnerships that promote digital skills. And others play a leading role in stimulating new approaches to digital skills training.

Digital transformation is offering a range of opportunities to people in SIDS. Those with strong connectivity infrastructure and well-educated populations, digital globalisation is also opening up a range of new remote job options to people in SIDS. For instance, through the Dominica Work Online programme, IsraAid, UNDP and the Dominican government are offering hands-on training to individuals to market their skills to access remote work online, with many graduates securing jobs with North American and UK-based companies without having to leave home.   International donors are making major efforts to connect schools to the internet. Some donors are building their own digital skills development platforms while others are working with incubators and accelerators to develop digital skills. International tech companies have also started collaborating with governments and private sector partners to develop digital skills.

Giga, a joint collaboration between ITU and UNICEF, is an initiative to connect every young person in the world to information, opportunity and choice. Devised before the onslaught on COVID-19, the project addresses the underlying inequities in access to the Internet. However, it is also a platform for creating the infrastructure necessary to provide digital connectivity to an entire country, for every community and for every citizen. With schools as a focal point, Giga seeks to build robust digital ecosystems, so communities everywhere can cope with shocks such as COVID-19 and ensure that no one is left behind. To achieve this goal, Giga builds on four pillars: map, finance, connect, empower. The Empower pillar brings e-learning solutions connectivity to schools to empower learners to support the development of digital skills.
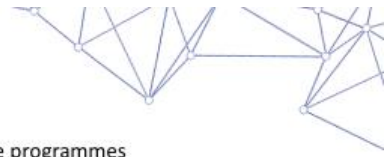
Case Example: Papua New Guinea

Building digital skills through Connect the Schools and Digital Transformation Centre programmes

Papua New Guinea has been investing in expanding digital skills and capacity through formal education channels. Under the Connect the Schools Project the government used its Universal Service Funds to connect 8 teachers' colleges to the Internet and to fund the provision of Internet service to the schools for 2 years. Later the Papua New Guinea University of Technology was selected for the Digital Transformation Centre Initiative, an ITU-Cisco partnership launched in 2019, to become part of a global network of institutions to accelerate the uptake of digital technologies among citizens and boost the capacity of young entrepreneurs and SMEs to succeed in the digital economy. It is one of Papua New Guinea's largest technological institutions, playing a vital role in the education of PNG elites, now contributing tremendously to the development of the country.

Under the initiative the university has implemented four digital skills training programs to support basic digital skills and trainings of trainers on women's Entrepreneurship through ICT, Digital Financial Literacy and Agricultural Technology.

This brings us to the end of Module 3 on Business and People. In the next module we will look at the central role of government in supporting the whole-of-society digital transformation journey, and how it can set the example and lead innovation through the provision of e-government services. We will also explore diagnostic tools available to support the process.