

A graphic of the Sustainable Development Goals (SDG) wheel, showing 17 colored segments arranged in a semi-circle. The colors include red, gold, green, dark red, orange, blue, yellow, and maroon. The wheel is set against a background of light blue circuit board lines.

SDG Digital Inclusion Framework

Advancing UN Global Goals
through Equitable Digital Access

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Transforming our Digital World

IN 2011, THE UNITED NATIONS' HUMAN RIGHTS COUNCIL defined the internet as an indispensable tool for realizing a range of human rights, stressing that Internet access should be a priority for all states. However, as the Internet continues to advance, a growing number of individuals are being left behind. The Covid-19 pandemic has further revealed the extent of this digital divide. We have the responsibility to ensure everyone in our communities can connect to the Internet. Facing the social consequences of the global pandemic outbreak requires acknowledging digital inequality and building bridges to overcome the barriers to digital inclusion.

The University of Toronto's Media Ethics Lab partnered with the City of Toronto to support the project: "The Digital Access: Who is Underserved and Why", in partnership with the City and Ryerson University, University of Toronto, York University, Humber College and Seneca College. We at the Media Ethics Lab have adopted the UN Sustainable Development Goals (SDGs) to facilitate our vision of a more digitally equitable, holistic, sustainable, and inclusive world that includes the five pillars for sustainable development: people, planet, prosperity, peace, and partnership.

Aligning digitally inclusive practices with the SDGs, we have determined that communities must prioritize accessibility within underserved groups by providing digital tools and fostering equitable digital access to lifelong learning opportunities. This approach will increase valuable emerging skills and human prosperity. Furthermore, an equitable and inclusive digital infrastructure strategy will increase sustainable and environmentally-friendly cities and communities that will develop resilient environments and support human well-being efforts.

We are thrilled to present the following report. Join us in creating a more inclusive, equitable, and sustainable smart world by using our SDG Digital Inclusion Framework, reaching out with any questions or suggestions, or getting involved with us at the Lab!



PAOLO GRANATA
Director, Media Ethics Lab
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About Us



Media Ethics Lab

Established in 2019 at St. Michael's College in the University of Toronto, the Media Ethics Lab is a research hub that studies the ways that digital media practices and emerging technologies are marked by ethical issues and decisive political, societal and cultural questions. Serving as a focal point for information related to academic programs, research, and public policy initiatives in the field, the Media Ethics Lab fosters open research, integrated learning, and civic engagement, to explore the potential that information and communication technologies hold for enacting positive social change.

The Digital Access: Who is Underserved and Why

project is a partnership project with the City of Toronto and Ryerson University, University of Toronto, York University, Humber College, and Seneca College. It focuses on populations residing in the City of Toronto who are impacted by the digital divide, and includes both quantitative and qualitative components.

All higher education institutions partners, through review and analysis of related data, will provide advice, commentary and/or recommendations.

Summary of Key Findings

THIS REPORT PROVIDES COMMENTARY AND RECOMMENDATIONS on how City of Toronto's digital inclusion and digital equity initiatives can align to and help accelerate progress towards UN Sustainable Development Goals (SDGs).

FROM SEPTEMBER 2020, STUDENT RESEARCHERS OF THE MEDIA ETHICS LAB at the University of Toronto worked under the supervision of Prof. Paolo Granata to create a SDG Digital Inclusion Framework. Universal in scope and benefitting from a coordinated effort across all sectors, the framework encourages a digital inclusion approach to the UN Sustainable Development Goals with the aims of: contributing to existing efforts to advance and integrate digital inclusion strategies in the SDGs in order to gain a more holistic and systemic perspective, and provide practical guidelines to further illustrate how an equitable digital access can accelerate the progress towards achieving the Sustainable Development Goals.

THE REPORT EXAMINES 24 SELECTED SDG TARGETS AND THEIR INDICATORS, which were chosen based on the potential benefits that digital inclusion initiatives bring to them. While the selected targets are those that are most advanced by information and communication technologies, the Media Ethics Lab approached the framework with a holistic thinking perspective. As such, targets were cross-listed in order to identify connections, discover opportunities for cross-collaboration, and ensure that no targets were left behind.

THE FRAMEWORK ALSO FUNCTIONS AS A PRACTICAL TOOL to review how public institutions and organizations are aligning their digital inclusion practices to the UN's Sustainable Development Goals:

- ✓ first, by identifying the main issues related to the target that must be addressed by the digital inclusion strategies, while emphasizing who is negatively impacted by these issues (Key Overview);
- ✓ second, by addressing how digital inclusion strategies can help advance this target (Direct Impact) and facilitate this target in connect to other targets (Holistic Impact);
- ✓ third, by recognizing groups, organizations and institutions needed to advance this target in the context of digital inclusion (Key Stakeholders);
- ✓ fourth, by determining how to measure the effectiveness of any strategy implemented (Indicators);
- ✓ lastly, by presenting a successful implementation of digital inclusion strategies that advance the target in hopes of inspiring cities to implement good practices.

As we enter a more digitally inclined world, there's always something one can do to build a digitally inclusive world for everyone. It's growing critically important to take a stance in our global community. More than this, however, should public institutions and organizations combine their digital inclusion strategies with the SDGs and their targets, more holistic and equitable results that benefit societies at large could be achieved.

SDG Targets Overview

THE REPORT EXAMINES 24 SELECTED SDG TARGETS AND THEIR INDICATORS, WHICH WERE CHOSEN based on the potential benefits that digital inclusion initiatives bring to them.

- 1.4** By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.
- 3.4** By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- 3.7** By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.
- 3.d** Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.
- 4.4** By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.
- 4.5** By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.
- 4.a** Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.
- 5.5** Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.
- 5.b** Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.
- 8.2** Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.
- 8.3** Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.
- 8.8** Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.
- 9.1** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.
- 9.c** Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020.
- 10.1** By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.
- 10.2** By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
- 11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.
- 11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.
- 11.4** Strengthen efforts to protect and safeguard the world's cultural and natural heritage.
- 12.8** By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.
- 16.7** Ensure responsive, inclusive, participatory and representative decision-making at all levels.
- 16.10** Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.
- 17.6** Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism.
- 17.17** Promote the development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed.



SDG TARGET ID: 1.4

By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to [...] appropriate new technology and financial services, including microfinance.

KEY ISSUES OVERVIEW

The main digital inclusion issues that need to be addressed by digital inclusion strategies are the need of widespread access to (I) information and communication technologies (ICTs); (II) broadband internet connection for those living below the poverty line and vulnerable communities.

Failing to address digital inclusion in Target 1.4. can look like: individuals without the income to purchase appropriate new technologies, individuals without basic broadband internet service (technologies that deliver advertised download speeds of at least 256 kbit/s), those without access to basic resources, and those who live in communities excluded by service providers for the extension and installation of broadband networks and ICT infrastructure. Information and communication technologies are a key enabler of social and economic development. As such, the cycle of poverty is exacerbated for those excluded from access to these resources. If the issue is addressed, everybody benefits: people living under the poverty line are given the tools to break the cycle of poverty and have their basic needs met, while society as a whole experiences higher economic growth, more social cohesion, and increased social stability when the amount of people living in poverty lessens.

DIRECT IMPACT

Digital inclusion strategies have a positive impact on short-term and long-term socio-economic development, as well as on the growth of the digital economy towards building an inclusive digital society. Poverty reduction is directly linked to increased digital infrastructure investment,¹ and inclusive ICT access facilitates economic wellbeing for the poor and vulnerable in numerous ways, such as: providing them with ICT enabled financial services; opening up more channels for communication and networking; giving access to knowledge of job opportunities and skills training; improving the flow of general information dissemination; and reducing the searching and transportation costs normally associated with finding a job.

HOLISTIC IMPACT

Ensuring that those living under the poverty line have access to appropriate new digital technologies and the digital infrastructure through which to use them does not only lower poverty through ICT enabled financial services, but also furthers other SDG targets such as:

- ✓ Target 3.4. as it gives individuals a means through which they can access online health and well-being resources.
- ✓ Target 4.3. as it gives individuals access to educational resources and support online, at a cost that is often more affordable than in-person training.
- ✓ Target 4.4. as it provides more people with information and communication technologies, and therefore gives them the ability to develop skills related to their use.
- ✓ Target 9.1. as creating inclusive broadband access requires infrastructure expansion, network.

KEY STAKEHOLDERS

- ✓ Governments can create programs, initiatives, and policies that ensure the poor and marginalised are given access to appropriate new technologies and access to affordable broadband networks.
- ✓ Infrastructure construction and civil engineering companies need to build the appropriate structures for the main types of broad band services in otherwise overlooked areas.
- ✓ Cellular Service Providers play a major role in determining whether their products and services are inclusive and contribute to poverty reduction.
- ✓ Philanthropic Endeavours of independent organisations and registered charities can deliver access to needed ICTs among underserved communities.

INDICATORS

A good capacity for data management, data collection, and data monitoring is needed in order to ensure nobody is left out through the computation process.¹ Using household surveys and census, the proportion of population living in households with access to appropriate technologies and service can be tracked.

CASE STUDIES

In Rwanda, the **SMART Rwanda** plan leverages ICTs for social and economic transformation. The initiative works with the Rwandan government and private agencies towards the objectives of: increased access to financial services and information; introduce meaningful products and services for the underbanked and unbanked population; create an interoperable domestic and global financial ecosystem; increased government efficiency for collection and disbursement, enhanced by ICT; increased national competitiveness for growth and change in Africa.¹

In Peru, **Modelo Perú** is driving financial inclusion. Launched by the Peru National Bank Association, the initiative aims to accelerate the transition from cash to digital payments in order to reduce poverty and drive inclusive growth.²



By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.

KEY ISSUES OVERVIEW

The main digital inclusion issues that need to be addressed by the digital inclusion strategies are the need of widespread access to ICTs in healthcare among low-income or geographically isolated communities; smooth adoption of said tools through digital literacy workshops; and enforced application among central healthcare institutions.

The parties who could benefit from digital inclusion initiatives catered to Target 3.4 are the public healthcare sector who can be relieved of some responsibilities; private healthcare sector; and those deeply impacted by non-communicable diseases (NCDs) like mental disorders, cardiovascular disease, cancer, diabetes, chronic respiratory diseases. Socioeconomically disadvantaged communities are negatively impacted by neglecting to incorporate digital inclusion practices according to this target as they're disproportionately targeted by non-communicable diseases.¹ More so, those who are geographically unable to access healthcare institutions that can capacitate quality healthcare services or do not have a means of transportation to access these institutions otherwise are also negatively impacted without the implementation of digitally inclusive practices.

DIRECT IMPACT

With digital inclusion strategies in place, those afflicted by NCDs can access various ICTs to increase autonomy with matters regarding their health by being able to order prescriptions or book appointments at their convenience; use resources to care for minor ailments where applicable; or access low-cost healthcare services conducted through ICTs. Additionally, people living with mental disorders can access vital mental health resources and services, as well as instantly connect with free, confidential, and local crisis resources and support such as suicide prevention hotlines and chats when having a mental health crisis.

HOLISTIC IMPACT

With an overall better quality of life and more independence within healthcare matters, those afflicted by NCDs are able to not only become more autonomously involved in their health and wellbeing, but are able to access potentially affordable services by using ICTs that can decrease costs of digitally providing services.¹ This furthers SDG targets like:

- ✓ Target 1.4 as it increases equal access to basic services, specifically new technology;

- ✓ Target 10.2 as it provides impoverished and indispensed communities a chance to be and remain socially, economically, and politically involved in society;
- ✓ And target 16.6 as it encourages government involvement in public health.

KEY STAKEHOLDERS

To establish and advance digital inclusion strategies within this particular context of digital healthcare resources and services and all the challenges associated with it:

- ✓ Governments would need to provide funds and enact tangible policies to support and remain accountable for digitally inclusive practices in healthcare.
- ✓ Public healthcare sectors need to adopt, train staff, and hold online or face-to-face workshops on relevant ICTs.
- ✓ Philanthropic endeavors of telecom & internet companies can deliver access to needed ICTs among underserved communities to partake in digital healthcare.
- ✓ Compared to the other stakeholders involved, community health centres (CHCs) and community mental health programs (CHMPs) are in much more localized position to ensure those disproportionately impacted by NCDs can access such digitally inclusive resources.

INDICATORS

The effectiveness of digital inclusion strategies can be measured through evaluative surveys following the implementation of said strategies. As per the NHS' Widening Digital Participation Programme evaluation report,¹ its effectiveness can be measured:

- ✓ Through its reach and accessibility in terms of how many people out of a given sample size actually use the ICTs, digital literacy support, or any other provided resources or services;
- ✓ Along with its tangible impact through how many people use said resources and services to learn about their health, "improve mental health and wellbeing," book appointments, order prescriptions, and other such practices depending on the services made available.

CASE STUDY

The **Good Things Foundation's** NHS Widening Digital Participation Programme being enacted in the United Kingdom has a number of successful case studies that directly benefitted from the implementation of digital inclusion strategies in their healthcare systems. One specific case study subject who possesses Type 2 diabetes became more involved in his condition's management through the program.¹ Through his general practitioner connecting him to local computer classes and a Digital Surgery at Sloan Medical Practice, he found more information on low carb diets and food recipes, and as a result has lost weight, reduced his blood sugar levels, and now feels "much happier in himself and his health."



By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.

KEY ISSUES OVERVIEW

In contemporary society, sexual and reproductive health and rights (SRHR) remain sensitive subjects or taboos due to stigma, discrimination, or a lack of education that root from bigger social systems and structures such as culture or religion.

Sexual and reproductive healthcare provides a wide array of resources and services such as education, counseling, birth control methods, and contraceptive methods. It is often women who are impacted by barriers to these services and usually “the poorest who cannot access these services.”¹ As such, it’s pertinent for digital inclusion strategies to consider the importance of providing sexual and reproductive healthcare services in an affordable, private, and discreet way through ICTs as this would grant women autonomy in regard to if and when they should wish to start a family; allow them to lead a safe sex life; help them make choices that could make a mortal difference; and ensure their equal participation in society.

DIRECT IMPACT

Some people aren’t able or comfortable to seek sexual or reproductive healthcare services from practitioners within their local health institutions due to a whole host of reasons like SRHR services being stigmatized, by the patient themselves not being able to pay for services, fearing discrimination due to their race or immigration status, having a disability, being transgender, or being a sex worker to name a few. Digital inclusion strategies like in-school and healthcare sector-implemented campaigns that create awareness around ICTs like instant chat bots, e-mails, online videos, general online resources, and other such information technologies would allow women, transgender men, gender non-conforming female-bodied individuals, and adolescents of reproductive age to freely and discreetly explore sexual and reproductive healthcare resources and services.

HOLISTIC IMPACT

Digital inclusion in sexual and reproductive healthcare furthers SDG targets like:

- ✓ Targets 1.2 and 2.2 as one can plan their family size according to the resources they can access or acquire;
- ✓ Targets 3.1 and 3.2 as youth mortality can be reduced by affording healthcare services that provide proper professional maternal and natal care;
- ✓ Target 4.3 as access to contraceptive resources or safe abortions can prevent unplanned pregnancies from compromising girls’ educations;

- ✓ Targets 5.5, 10.3, and 10.4 as sexual and reproductive freedom affords the equal participation of women in society;
- ✓ Targets 5.6 and 5.b as such ICTs empower women by granting them access to sexual and reproductive healthcare;
- ✓ And target 8.5 as by these services allow women the chance to eventually have a productive, decent career.

KEY STAKEHOLDERS

To create and advance digital inclusion strategies within this particular context of digital SRHR resources and services and all the challenges associated with it:

- ✓ Governments can create policies that can rid disparities in sexual and reproductive healthcare, provide federal funding to institutions that provide such services, and mandate sex-education curricula.
- ✓ Mass media can be used to disperse SRHR information and resources relevant to women, transgender men, gender non-conforming female-bodied individuals, and adolescents of reproductive age.
- ✓ Schools and community and youth support centres & services (some of which are already online to reach digitally literate youth) can advocate for proper sex education or serve as a safe space where the aforementioned groups can be referred to resources or services.

INDICATORS

The effectiveness of digital inclusion within sexual and reproductive healthcare (SRH) can be measured through evaluative reports that state:

- ✓ How many subjects within a given sample size use SRH ICTs over in-person services;
- ✓ Which groups are predominantly using these services and how can other groups who are also disproportionately barred from SRH services be more effectively included;
- ✓ By how much did the incorporation of digitally inclusive practices reduce SRH service costs for patients and general burden on healthcare institutions;
- ✓ How have resources been allocated to account for those who live in rural, remote, underserved areas;
- ✓ And how have confidentiality and privacy been prioritized in these digital inclusion strategies.

CASE STUDY

In rural Nepal, a study was conducted regarding the use of telemedicine, “the delivery of healthcare services from a distance using information and communication technologies (ICTs),” in decreasing “gender-based barriers” faced by women and girls in Nepal’s “rural areas” in accessing healthcare services. <https://doi.org/10.1016/j.tele.2017.05.006>



Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks.

KEY ISSUES OVERVIEW

The COVID-19 pandemic has brought to light just how much we rely on digital access to keep the systems we live in running as smoothly and close-to-normal as possible. The pandemic is not just an emergency strategy but an ongoing one, especially as people’s actions are largely inseparable from the internet.

A digital inclusion based strategic approach to Target 3.d. needs to address: (I) how the digital divide hinders people’s ability to complete everyday tasks, attend work or school, and maintain social connections during a national or global health risk, and; (II) how the digital divide weakens a country’s capacity for early warnings and risk reduction and management. Marginalised individuals are the most negatively impacted by digitally exclusive responses to national and global health risks, as they are the least protected by social services and most excluded from access to information. However, the health and safety of the entire community benefits from a digitally inclusive approach to early warning, risk reduction, and management of national and global health risks.

DIRECT IMPACT

ICTs have shown to be essential both to boosting long-term resiliency against future pandemics and to resolving the secondary challenges that emerge within a socially distanced environment.¹ Since most infectious diseases spread through human movement, access to mobile communication technologies are especially important during national and global health risks. ICTs enhance disease surveillance, reporting and emergency and disaster response: the accuracy of disease surveillance improves when more people have the technology that is used for reporting and gathering information, and the effectiveness of a country’s early warning system is improved when more people have access to the ICTs and similar digital technologies on which to receive these warnings.

HOLISTIC IMPACT

Using digital inclusion strategies to strengthen the capacities of all countries for early warning, risk reduction, and management of national and global health risks can further other SDGs, such as:

- ✓ Target 1.5. as providing the poor and those in vulnerable situations with access to information and communication technologies makes them better equipped to handle extreme events and other economic, social, and environmental shocks and disasters.

- ✓ Target 3.7. as engaging people in infectious disease reporting also helps them become more aware of and involved in their own health. 1
- ✓ Target 11.b. as a digitally inclusive, early warning and risk reduction system contributes to more holistic and integrated policies of mitigation, resilience, and adaption to climate change disasters.
- ✓ Target 13.3. as more wide-reaching early warning system means that more people are educated and made aware of climate change mitigation, adaption, impact reduction and early warning information as well.

KEY STAKEHOLDERS

- ✓ Governments, leading public health authorities and software developers would need to collaborate in order to develop technical tools and software to combat health emergencies.
- ✓ Public Health Authorities need to develop targeted medical responses that are also inclusive, in the event of natural disasters and other emergencies
- ✓ The General Public needs to be engaged in infectious disease reporting, as crowdsourcing data allows researchers to gather important information in real time and prevent further spreads.
- ✓ Technology providers and software developers must ensure that the phones and other ICTs are pre-loaded with necessary software.
- ✓ Philanthropic Endeavours of independent organisations and registered charities can deliver access to needed ICTs among those who need them.

INDICATORS

The effectiveness of digital inclusion strategies regarding Target 3.d. can be measured through online reporting tools, that use one to three indicators for each of the thirteen IHR capacities needed to detect, assess, notify, report and respond to public health risks and events of domestic and international concern, as checkpoints that countries can use to score their capacity.

CASE STUDIES

Flowminder, in collaboration with Digicel, is an example of the first use of mobile operator data for humanitarian operations. They provided analyses to relief agencies on the distribution and movements of displaced people after the 2010 earthquake and cholera outbreak, using the movements of two million anonymous mobile phones in Haiti.

The **COVID alert app** is the Government of Canada’s free exposure notification app that can be installed on a smartphone from the Apple Store and Google Play. It uses Bluetooth – so user privacy is protected – to alert users of potential exposure before they might experience any symptoms, therefore preventing even more possible exposure and limiting the extent of any outbreak.



By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

KEY ISSUES OVERVIEW

As workplaces increase the use of digital technology, the demand for digital skills are critical in finding a job. However, not everyone has access to this technology or quality education to learn such skills. The lack of these skills is a key barrier that keeps people from fully benefiting from these technologies. As a result, people are left unemployed while ICT talent is in demand.

By providing increased and more diversified learning opportunities for all, the population can acquire relevant skills and knowledge for decent work and life. According to ICTC, the number of Canadian ICT graduates is insufficient to satisfy ICT market needs.¹ If given education and employment opportunities, Indigenous people can fill this gap. People in low-income households and those who do not have the means or resources to access educational programs can also fill this gap. Increasing their participation in the ICT labour force can generate a greater pool of skilled workers and satisfy the demand of this growing industry. This will also directly create economic benefits and improve health and well-being for individuals and their communities.

DIRECT IMPACT

Addressing this target requires the implementation of policies and creation of programs aimed at improving ICT access and education in Indigenous and low-income communities. This will enable these communities to have access to this technology and learn how to use it. As a result, they will acquire the relevant skills needed to get a job in the ICT-related fields. This will decrease unemployment rates in these communities.

HOLISTIC IMPACT

Because the world is advancing in technology, the education of and access to ICTs continue to be essential. Access to quality education and ICTs is an important enabler for people in different circumstances. Digital Inclusion strategies can help to facilitate this target in connect to the following targets:

- ✓ Target 4.5 (elimination of gender disparities)
- ✓ Target 5.b (enabling technology in the promotion of women empowerment)
- ✓ Target 8.5 (productive employment; equal pay)
- ✓ Target 9.2 (industrialization; raise GDP)
- ✓ Target 9.c (increase access to ICT; affordable access to the Internet)

KEY STAKEHOLDERS

- ✓ The government is needed to fund programs for adults to increase ICT skills and access to ICTs (ex: in libraries, subsidize home computers for low-income households). It needs to direct more funding to schools. It needs to ensure that its population has access to ICTs (ex: schools in remote areas).
- ✓ The Ministry of Education needs to update the school curriculum, taking into account students who do not have access to technology at home. This body must also review the given data in order to better service the population or communities that are disadvantaged and contribute to a more inclusive society.
- ✓ Teachers need an updated training on how to teach students how to use and work with ICTs in and out of the classroom.
- ✓ Organizations and businesses could organize workshops to train adults (out of secondary school or post-secondary education) to use ICTs and in digital literacy.

INDICATORS

The effectiveness of digital inclusion strategies can be measured through evaluation reports of the following data (collected through a survey or tests):

Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill (%)¹

CASE STUDY

The **Digital Literacy Exchange** program invests in Canadian not-for-profit organizations in their delivery of digital literacy training initiatives. This targets Canadians who need to upgrade their education and skills in order to “enable all Canadians to participate in—and benefit from—a connected and digitally engaged society.”¹ These Canadians include: seniors, people with disabilities, newcomers to Canada, and Indigenous peoples, among other vulnerable communities. In 2019, the government invested \$750,000 in a Peel Multicultural Council project to develop fundamental digital skills. For instance, MediaSmarts and YWCA Canada provide workshops on digital and media literacy across the country to under-represented groups, like Indigenous women and low-income Canadians. This is to “create a safer digital world for women and girls while addressing the need for safety privacy training for women to empower them online and offline.”

Notes

1. https://www.ictc-ctic.ca/wp-content/uploads/2017/06/Indigenous_Supply_ICTC_FINAL_ENG.pdf
2. given by UN
3. http://www.ic.gc.ca/eic/site/102.nsf/eng/h_00000.html
4. <https://mediasmarts.ca/press-centre/press-releases/new-digital-skills-workshops-under-represented-women-across-canada>



By 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples and children in vulnerable situations.

KEY ISSUES OVERVIEW

According to the UN Development Programme, women make up 30% of the world's researchers in STEM fields, while they represent only 35% of students enrolled in STEM courses.¹ Moreover, men are paid more than women for their research. Women, also, experience glass ceilings in workplaces and come across less career opportunities.

Despite these obstacles, women in these fields continue to contribute ground-breaking research. By addressing gender disparities, more women can work in STEM fields and achieve even more for the world. Moreover, it can be difficult for vulnerable communities to access quality education due to different circumstances, which makes it harder for these individuals to find decent work and have a decent life. In ensuring equal access to all levels of education to these communities, decent work and life will also become more accessible to them.

DIRECT IMPACT

To advance this target, access to quality education and ICTs is essential. Digital Inclusion strategies can help to facilitate the dissemination of knowledge to all students and provide them with the tools needed to have decent work and life. This means that these should be easily accessible to women and individuals in vulnerable circumstances in order to ensure equality. Moreover, education and the delivery of training should also be more inclusive of different communities and circumstances. This is to say that training looks different for persons with disabilities versus people who don't have disabilities.

HOLISTIC IMPACT

The elimination of gender disparities and ensuring equal access to education in all vulnerable communities are important steps in achieving certain rights and eliminating poverty altogether. Digital Inclusion strategies can help to facilitate this target in connect to the following targets:

- ✓ SDG 5 (gender equality)
- ✓ Target 1.4 (equal rights)
- ✓ Target 1.b (poverty eradication)
- ✓ SDG 10 (reduced inequalities)
- ✓ Target 8.5 (productive employment)

KEY STAKEHOLDERS

- ✓ The government can implement mentorship programs for girls and the vulnerable, as well as ensure appropriate funding for vulnerable communities and disadvantaged students.
- ✓ The media can create ads to bring attention to these particular issues and help bring about a positive mentality in society.
- ✓ Organizations can create special programs for women and the vulnerable, including children with disabilities, indigenous peoples and children in vulnerable situations
- ✓ STEM programs and employers can create opportunities for women and the vulnerable.
- ✓ Teachers (and family members) can provide encouragement and support for their students facing these issues.

INDICATORS

The effectiveness of digital inclusion strategies can be measured through evaluation reports of the following data (collected through a survey or tests):

- ✓ Parity indices (female/male, rural/urban, bottom/top wealth quintile and others such as disability status, indigenous peoples and conflict-affected, as data become available) for all education indicators on this list that can be disaggregated¹

CASE STUDY

The **UNICEF TechnoGirl Programme** partnered up with the South African Department of Education to help underprivileged girls between the ages of 15 and 18 with good academic. They "are placed in corporate mentorship and skills develop initiatives" in order to develop confidence and the skills they need to successfully participate in the labour market. There is an emphasis placed on STEM programs because there is a significant gender gap in these fields. More than 5,000 girls have received post-secondary scholarships.¹ Although this practice focused on eliminating gender disparities, a similar mentorship program can be replicated for vulnerable and disadvantaged individuals.



Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.

KEY ISSUES OVERVIEW

To harness the potential of education as a driver of human wellbeing and deliver the kind of progress envisioned by SDG 4 requires an enabling environment.

Digital Inclusion initiatives allow us to create this environment twofold: firstly, through promoting the use of digital technologies and innovation that is designed with disabilities, children, and gender in mind, and secondly, expanding access to these technologies, so that everyone who needs them can use them. Moreover, through ICTs, the learning space is no longer limited to a traditional classroom, as educational delivery is shifting online.

DIRECT IMPACT

Promoting inclusive societies and institutions, includes amplifying accessibility of education to persons with disabilities. Removing barriers, such as web inaccessibility, helps create learning environments that are inclusive for all. Through online educational facilities, and ICT capabilities that are child, disability and gender-sensitive, everyone is given the opportunity to have an equal educational experience. For instance, geographical location can heavily impact traditional education systems, with proximity to school affecting student attendance and the quality of education; digital technologies can deliver high quality content regardless of location, especially to those whose disabilities make it harder to physically attend school.

HOLISTIC IMPACT

With better access to education and a learning environment conducive to quality learning for all, other SDG targets are furthered:

- ✓ Target 1.2. as access to education provides critical skills and competencies that will open job opportunities, and thus help people escape from poverty.
- ✓ Target 5.b. as women and girls are disproportionately affected by the global education gap. ICT-based remote learning is a way through which girls can continue their education, thus increasing gender parity.
- ✓ Target 3.7. as youth-friendly health education and sexual education is made more accessible.

KEY STAKEHOLDERS

- ✓ Governments need to prioritize education in their budgets and allocate funding to support impactful and inclusive education programs, practices, and policies, so that they can move forward.
- ✓ The Education Sector needs to provide teachers with the appropriate training for digital teaching and practices and enforce accessibility standards to be met.
- ✓ Philanthropic and Community Organisations can deliver access to needed ICTs among underserved communities so that they can take part in digital education.
- ✓ Public-Private Partnerships and impact investing can provide funding for global education. Private sector education trainers can team up with governments to design cost-effective delivery models, as seen with the Connect to Learn Program on Myanmar.¹

INDICATORS

Establishing a Continuous student monitoring framework (for example, developmental assessments) based on industry-wide indicators can highlight gaps in student understanding and support a responsive design. Access to real-time data can identify gaps in implementation that can be bridged with strategic planning. Online Questionnaires can paint an accurate picture of student responses and suggestions in regard to digital leaning. Governments can survey existing websites to measure their accessibility and create targets for web accessibility guidelines based on the insights gained.

CASE STUDY

The **Estonian e-Learning Development Centre** (ELDC) is a unit within the Estonian Information Technology Foundation that works to support the development of e-learning for learners with disabilities. The country serves as an ideal example of remote learning and focuses on creating more accessible and flexible methods of education. Umbrella organisations of disabled people were consulted throughout the planning process of the ELDC activities (2004-2005), in order to ensure that the needs of students with disabilities were taken into account in all priority areas of the Centre, especially in infrastructure and e-learning content development.



Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life.

KEY ISSUES OVERVIEW

In most cases, women face more hurdles than men in being able to participate in political, economic and public life. Because women often take on family duties and responsibilities, they struggle to balance familial duties and responsibilities with work life. Also, there is a lower literacy rate among women worldwide as boys attend more years of education than girls.

As a result, around 65% of people in management positions in Canada are men.¹ We see a similar pattern in regards to the proportion of seats held by men in national Parliament, which is 70%.² However, having women fully and effectively participate in different aspects of life is essential to ensure proper representation. Women also offer alternative yet important perspectives, allowing new concerns to be highlighted and more inclusive solutions to be implemented. By consequent, both women and society in general will benefit from Digital Inclusion strategies.

DIRECT IMPACT

The implementation of Digital Inclusion strategies will enable women to access more opportunities that they would otherwise not come across. It also helps women overcome hurdles in regard to family circumstances and what they can manage to do to balance work-family life. For instance, ICTs and the Internet are an important source in women empowerment. This is because employers can reach out to women faster and more effectively than traditional methods. The Internet can also become a platform for women to voice out and share their concerns, problems, and suggestions, as well as access different services and tools.

HOLISTIC IMPACT

Ensuring women's participation and equal access to education is an important step in eliminating disparities and inequalities between women and men. It removes many key barriers in women's achievement of education, employment and other aspects of life. Making services more accessible to and inclusive for women allows for greater equality and representation in all sectors and aspects of life. Digital Inclusion strategies can help to facilitate this target in connect to the following targets:

- ✓ Target 1.b (gender-sensitive development strategies)
- ✓ Target 4.5 (eliminating gender disparities)
- ✓ Goal 5 (gender equality)
- ✓ Target 16.7 (responsive, inclusive, participatory and representative decision-making at all levels)

KEY STAKEHOLDERS

- ✓ The government can update policies to make them family-friendly and allow women to more efficiently balance work and family life.
- ✓ Workplaces and employers (including Parliament) can adopt more family-friendly policies (more flexible) that effectively benefit women.
- ✓ Organizations can provide women with services and tools and connect them with resources.

INDICATORS

The effectiveness of digital inclusion strategies can be measured through evaluation reports of the following data (collected through a survey or tests):

- ✓ Proportion of seats held by women in (a) national parliaments and (b) local governments¹
- ✓ Proportion of women in managerial positions²
- ✓ Indicator 16.7.1: Proportions of positions (by age group, sex, persons with disabilities and population groups) in public institutions (national and local), including (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions.

CASE STUDY

Opportunity International "aims to bring the mobile revolution to underserved groups whose members have historically been on the wrong side of the digital and economic divides."¹ In Ghana, Opportunity provided a single mother of three children with a mobile phone and some training. She now has a business of selling used clothing.

Having more flexibility at work can increase the employment rate among mothers. For example, countries, like Sweden and Denmark, that have a high rate of women working from home demonstrate a higher employment rate among mothers. As shown on the graph (Figure 1), there is a strong correlation between the two.



Enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women.

KEY ISSUES OVERVIEW

The main issue to be addressed by digital inclusion strategies for target 5.b. is the exclusion of women from the digital environment. For example, women journalists feel the brunt of online harassment and the Coronavirus pandemic has further exposed and exacerbated the gender digital divide.

Digital inclusion strategies must aim to increase the access to and use of digital technologies among women, as well as create a digital environment that is safe and empowering for them to be in.

DIRECT IMPACT

ICTs empower women by giving them easier access to alternate communication channels and information providers, which leads to the broadening of perspectives, greater understandings of their situations, and the option to communicate with the world beyond their communities.¹ The process of learning how to use ICTs also brings empowerment by building the self-confidence of women and girls, so that they can critically reflect on their position within society – resulting in an increased ‘power within.’² Access to information, facilitated by digital technologies, can promote gender equality and be a tool to empower women across all communities. Access to cable television, for instance, has been found to help shape attitudes about gender roles and change society’s perception of women’s role.

HOLISTIC IMPACT

Women’s empowerment is the key to achieving all seventeen sustainable development goals.¹ If all interventions and policy attempts regarding the SDGs are made with gender equality in mind, they will trigger positive multiplier effects across the spectrum of development. Ensuring that women are given access to and use of digital technologies furthers other SDG targets such as:

- ✓ Target 3.7 as sexual and reproductive health-care services are more accessible to women who have and can use technology.
- ✓ Target 4.4. as there would be more women with basic ICT skills, and women with higher (post-secondary) level ICT skills.
- ✓ Target 4.5. as increased access to technology brings more opportunities for women to access education and vocational training.
- ✓ Target 5.A. as women’s control over their own finances is increased.
- ✓ Target 8.5. as women could use ICTs for their businesses, particularly for product marketing.

KEY STAKEHOLDERS

- ✓ Women as increased empowerment denotes increasing agency; the ability to act on one’s own behalf brings more choices and opportunities.
- ✓ Governments can create programs, initiatives, and policies that ensure that women are connected to technology and trained in how to use it.
- ✓ Cultural Institutions, community leaders, and churches can act as institutions of influence and cultural change by promoting women’s empowerment in instances where culture may be a barrier to a woman’s ability to access technology.
- ✓ Philanthropic and Community Organisations can deliver access to needed ICTs and digital technologies among women who need them so that they can access the digital environment.

INDICATORS

Existing data on mobile phone ownership shows that women own less of them than men.¹ Data on mobile phone ownership is well suited to monitor the progress of Target 5.B. as phone ownership provides women with a degree of independence, autonomy, and access to information, for both professional and personal purposes. As per the SDG Indicators: Metadata Repository countries can gather and monitor this data through national household surveys, and further break down information based on gender and region, so that targeted initiatives can be implemented.

CASE STUDIES

Rotondi et al (2020) found that on an individual level, data shows that, “women who own a mobile phone are better informed about sexual and reproductive health services and empowered to make independent decision.”

<https://doi.org/10.1073/pnas.1909326117>

Poveda and Gatti’s (2018) report on the iWomen Inspiring Women Project, To Enable Positive Behavioural Change, Does Development Need a Structured Approach to Inspiration? includes testimonials from rural women in Myanmar who benefited from the creation and implementation of a mobile-supported app. Their collected data shows that the women’s levels of confidence increased to 43% in 2017 from 15% in 2013, their discomfort in dealing with government officials regarding issues in their communities decreased by 35%, their access to information about skills training events increased to 46% from 7%, and their access to funding increased to 63% from 9%.

https://i.unu.edu/media/cs.unu.edu/attachment/4031/iWomen_Report_2018.compressed.pdf



To achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors.

KEY ISSUES OVERVIEW

Before COVID-19, global economic growth slowed to a 2.0 percent GDP per capita growth and 1.5 percent GDP per capita growth, and during COVID-19, GDP per capita is expected to decline by 4.2%.

In the second quarter of 2020, COVID-19 could cause 400 million job losses and in the informal economy, 1.6 billion people could lose their livelihoods (“Goals 8”). Digital inclusion advancements can help to solve low economic productivity, non-diversification, technological illiterate societies, and low-value labour, especially in developing countries, low-income families, minorities, women, children and people with disabilities. Implementing digital strategies will benefit everyone, especially above-mentioned vulnerable groups.

DIRECT IMPACT

Technology allows equal access to all; therefore, digital inclusion will enable equal access, in which all genders, races, nationalities, religions, age, income, and disabilities can equally use technology to increase economic productivity. When authorities provide digital inclusion access to people, people can use these technologies to gain valuable technical skills and learn new skills to increase their labor value and high-level job opportunities and to minimize job losses and increase workforce participation and sustainability, especially in the digital COVID-19 workforce. Technological upgrading and innovation can further enhance technical and labour skills among populations to increase economic productivity.

HOLISTIC IMPACT

Digital Inclusion strategies can indirectly facilitate target 8.2 in connection to targets 4.4, 4.a, 8.3, 8.5, 8.b, 9.1, 9.2, 9.5, 9.b, 9.c, 12.a, and their associated indicators.

- ✓ Providing digital access to students, especially the 90 percent of students, who remained out of school due to school closures, and to 500 million students, who cannot access remote learning, can increase digital access and inclusion, especially in education during the COVID-19 pandemic.
- ✓ Digital inclusion strategies also ensure equal gender access to gain valuable technical and financial skills and support that can be used in different sectors (e.g. finance, tourism and trade), especially in the digital COVID-19 workforce, to minimize job losses and increase workforce participation and GDP

KEY STAKEHOLDERS

Key stakeholders of target 8.2, who can use digital inclusion strategies to advance the target and fix issues, include governments, economic development institutions and technology institutions of developing and developed countries. Developed countries and their institutions have the most quality resources to support and guide developing countries and their institutions to enhance economic productivity, diversity, technology, and labour.

- ✓ Specifically, economic development and technology institutions of developed countries specialize in these key target areas to help the related counterparts of developed countries that can help to increase global economic growth, GDP per capital growth, GDP per capita, job opportunities, and livelihoods.

INDICATORS

As target 8.2 states, indicator 8.2.1 is the “annual growth rate of real GDP per employed person” that can measure effectiveness of the target (“Goals 8”). Following the formula of the indicator, another indicator could be the annual growth rate of GDP per capital growth in each country and world and the annual growth rate of GDP per capita in each country and world. Target 8.2 can also have the indicator of the global economic growth per year. The indicator of the annual growth of employees in technology sectors can measure the growth of technology and high-level labour and the indicator of the annual growth of employees in minorities in specialized labour can measure the growth of diversity across specialized sectors.

CASE STUDY

A successful implementation is how some executives programs in the Silicon Valley are fostering diversity, especially for women and minorities, and technological innovation in their high-value workforce (Dickey). In the most recent years, the technology hub has tried to eliminate its stereotype as a “(white) boy’s club” and has provided more jobs to diverse backgrounds in technology, creating “a leap forward” as Freeda Kapor Klien, co-founder of Kapor Capital and the **Kapor Center of Social Impact**, says (Dickey). Maxine Williams, the Chief Diversity Officer of Facebook, highlights that Facebook has “increased the number of black women by 25x and black men by 10x over the last five years” (Dickey).



Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services.

KEY ISSUES OVERVIEW

Proposed digital inclusion strategies include microfinance & microcredit through innovative digital crowdfunding platforms. Potential for Peer-to-peer lending (P2P lending), robust VPN networks.

Who is negatively impacted are low-income families, minorities, women, children and people with disabilities (70% of the world's poor are women). A well regulated crowdfunding digital platform could increase microlending, diversify the economy, increase financial transparency and reduce costs. Provides benefits for cultural creators in recognition, project awareness, marketing, civic engagement, feedback and access to low-cost capital.

DIRECT IMPACT

Crowdfunding as a target digital strategy for microfinance and microcredit to diverse economic activity. The World Bank report "Crowdfunding's Potential for the Developing World" states that "While crowdfunding is still largely a developed world phenomenon, with the support of governments and development organizations it could become a useful tool in the developing world as well. Substantial reservoirs of entrepreneurial talent, activity, and capital lay dormant in many emerging economies...Crowdfunding and crowdfund investing have several important roles to play in the developing world's entrepreneurial and venture finance ecosystem."

HOLISTIC IMPACT

These digital inclusion strategies potentially connect with:

- ✓ Target 1.3/2.1, labour right policy & social protections;
- ✓ Target 4.4, youth employment);
- ✓ Target 9.1, quality, reliable, sustainable and resilient infrastructure;
- ✓ Target 9.5, enhance scientific research;
- ✓ Target 12.a.1, research and development for sustainable consumption and production and environmentally sound technologies.

KEY STAKEHOLDERS

Potential groups/organizations/institutions needed to advance this target :

- ✓ Government, NGOs, Indigenous Services, Telecoms (Both Public & Private), Internet Server Providers, Web Hosting
- ✓ International Organizations supporting Digital Micro Financing: FINCA, NWTF, Whole Planet Foundation, MCPI, Women's World Banking.

INDICATORS

- ✓ Proportion of informal employment in non-agriculture employment, by sex;
- ✓ Unemployment rate;
- ✓ Average hourly wage and gaps between groups;
- ✓ Proportion of youth (aged 18-24 years) not in education, employment or training;
- ✓ GDP per capita;
- ✓ What programs have telecom & ISPs have been put into action;
- ✓ Economic Diversity Indicators;
- ✓ Whether microcredit has increased incomes.

CASE STUDIES

The **Microfinance Network** is a network of 20-25 of the world's largest microfinance institutions, spread across the world. The Microfinance Network provides a space to discuss opportunities and challenges that arise from emerging technological innovations in inclusive finance. Members include Al Majmoua, BRAC, BancoSol, Gentera, Kamurj, LAPO, and SOGESOL. <https://microfinancenetwork.org/>

The **Microcredit Summit Campaign**, an American non-profit organization, started as an effort to bring together microcredit practitioners, advocates, educational institutions, donor agencies, international financial institutions, non-governmental organizations and others involved with microcredit around the goal of alleviating world poverty through microfinance. <https://www.mycreditsummit.com/about/>



Protect labour rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants, and those in precarious employment.

KEY ISSUES OVERVIEW

Digital inclusion strategies have the ability to assist in labour rights' protection and creating safe working environments for all workers.

Workers whose labour rights aren't maintained (usually women migrants) due to a wide array of reasons like their immigration status or involvement in precarious labour, which is becoming an increasingly standard work paradigm globally that exploits migrant labour,¹ need to be included in digital inclusion strategies as they're disproportionately isolated from the digital world due to having a low socioeconomic status,² being digitally illiterate, or for not wanting to improve their digital literacy for fear of being tracked or legally reprimanded for attempting to use free, public resources to do so—which is usually the case among migrant workers. Using ICTs as tools is essential to their safety and rights as workers and can create an overall better quality of life for them.

DIRECT IMPACT

By advocating for digitally inclusive practices and digital literacy among workers, particularly among migrant workers and workers in precarious employment, these vulnerable groups will be able to:

- ✓ Create a digital trail of important work documents;¹ Access services like “legal support, welfare assistance and online training opportunities”;²
- ✓ Learn more about and independently assert their rights;
- ✓ Create communities where vulnerable groups can organize and provide each other with support;
- ✓ Educate and develop workers' unions, associations, and even organize movements regarding policies and regulations (or a lack thereof) concerning labor, immigration, and social services;
- ✓ And access a whole network of other groups and institutions that can advocate for them.

HOLISTIC IMPACT

Using digital inclusion strategies to protect labour rights and ensure safe working environments for all workers can further SDGs like:

- ✓ Target 1.3 as by working toward national compliance of labour rights can implement social protection systems and measures for the vulnerable groups of workers;
- ✓ Target 2.1 as by enforcing their labour rights and securing a job with a livable wage, they'll be able to access and afford safe and sufficient food annually;
- ✓ And targets 10.4 and 10.7 as by providing vulnerable workers with resources regarding labour rights, migrants can safely make a living in their country of destination.

KEY STAKEHOLDERS

To form and support digital inclusion strategies within this particular context of digital, accessible labour resources and services that protect vulnerable workers and all the challenges associated with it:

- ✓ Governments and their institutions like embassies that provide consular services must enforce the consolidation of multilingual digital literacy workshops into integration courses; policies that hold business and non-profit sectors to be legally responsible for the education of their workers regarding their rights and right to safe workplaces through the use of ICTs; and fund digital literacy workshops among public institutions like libraries or even non-profit organizations that advocate for vulnerable workers.
- ✓ Philanthropic endeavors of telecom & internet companies can deliver access to needed ICTs among underserved communities to partake in ICTs central to their work lives.

INDICATORS

The effectiveness of digital inclusion strategies regarding this particular target can be measured through:

- ✓ What policies or programs has the government enacted or how much in funds, if any, have been allotted to ensure vulnerable workers' access to and understanding of labour rights resources and support services built around the ILO's six indicators of forced labour, as well as the compliance of business and non-profit sectors employing them;
- ✓ What programs have telecom & internet companies launched to support vulnerable workers' access to labour resources and services through ICT tools;
- ✓ And anonymized data of how many vulnerable workers were able to access ICTs and digital literacy courses or workshops and gained new skills or knowledge in the process.

CASE STUDY

Contratados is a platform that was created by the Centro de los Derechos del Migrante (CDM) and “co-designed with migrant workers” to “increase transparency in the recruitment system and empower migrant workers by enabling them to share and access information about recruiters, employers, and agencies.”¹ This platform is set up in Spanish and English and serves as an anonymous digital space for workers to organize as a community and inform each other of work conditions, as well as access labour rights resources.



Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

KEY ISSUES OVERVIEW

Before COVID-19, tariffs and trade tensions declined manufacturing growth and during coronavirus, research and development needed accelerated growth and small-scale industries needed finance to survive the crisis.

Digital inclusion issues lower the possibility of quality, sustainable, and dependent infrastructure; furthermore, digital inclusion issues of affordability decrease economic development, human health and equal access. These digital inclusion issues impact everyone, especially populations of least developed countries and low-income families and employees of the manufacturing, research and development, and small-scale industries.

DIRECT IMPACT

Digital inclusion strategies can enhance target 9.1 through building and offering resilient, inclusive, sustainable and environment-friendly technologies that offer universal and affordable Internet access, especially in the least developed countries. By 2020, digital inclusion initiatives can increase technical, technological and financial skills and support, employment and GDP in least developed countries, landlocked developing countries, and small islands (“Goals 9”). Through the above increase, people will increase economic development, human well-being and equal access in all demographics. Therefore, digital inclusion integration can add 1 million employees in the research and development field by 2030 (“Goal 9”) and can add more employees in the manufacturing and small-scale fields.

HOLISTIC IMPACT

Digital Inclusion strategies can indirectly facilitate target 9.1 in connection to targets 4.4, 9.5, 9.2, 9.3, 9.4, 9.5, 9.a, 9.b, 9.c, 11.1, 12.a, 17.8, 17.9, 17.19 and their associated indicators, and SDG 16. Digital access can provide students equal access to remote learning that increases digital inclusion and skills (Goal 4). Digital inclusion strategies ensure equal gender access to gain valuable technical and financial skills and support that can be used in different sectors (e.g. finance, tourism and trade), especially in the digital COVID-19 workforce, to minimize job losses and increase workforce participation and GDP (Goal 9, 12). By increasing technology and knowledge, people can collect data, mobilize resources, and assist development in order to enhance ICT, technology, bank and science sectors, eradicating poverty and increasing global sustainable development (Goal 17).

KEY STAKEHOLDERS

For Target 9.1, key stakeholders include the government, technology industry, sustainability industry, and economic development industry of developed, least developed countries, landlocked developing countries, and small islands (Goal 9).

- ✓ Governments can facilitate the implantation, integration, and execution of the digital inclusion resources of developed countries into developing countries and small islands.
- ✓ The technology, economic development, and sustainability industries collaborate to create innovative and environment-friendly digital technology that increase technical, technological and financial skills and support, employment and GDP. These key stakeholders increase economic development, human well-being and equal access across industries, especially research and development, manufacturing and small-scale.

INDICATORS

As target 9.1 states, indicator 9.1.1 is the “proportion of the rural population who live within 2 km of an all-season road” and indicator 9.1.2. is the “passenger and freight volumes, by mode of transport” to measure effectiveness of digital inclusion strategies (“Goals 9”). Suggested indicator 9.1.3 is the annual growth of GDP per capita in each least developed country, landlocked developing country, and small island. Suggest indicator 9.1.4 is the annual growth of those with digital access among genders in each least developed country, landlocked developing country, and small island. Suggested indicator 9.1.5 is the average life expectancy between genders in each least developed country, landlocked developing country, and small island.

CASE STUDY

A relevant example of this digital inclusion issue and potential solution is when the **International Monetary Fund** (IMF) declared that member governments can borrow money for green infrastructure projects that will increase jobs and economic development in the COVID-19 pandemic (Elliot). The fiscal monitor of the IMF “showed that increasing public investment by 1% of national output would create 7m jobs directly, and between 20m and 33m jobs via the knock-on effects on the rest of the economy” (Elliot). Furthermore, public investment can generate two to eight jobs for “every \$1m (£770,000) spent on traditional infrastructure, and between five and 14 jobs for every \$1m spent on research and development, green electricity and efficient buildings” (Elliot).



Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries.

KEY ISSUES OVERVIEW

Proposed digital inclusion strategies include Satellite Internet, either low flying or high orbit, for universal public access.

Current digital divide impacts low-income families, minorities, women, children, people with disabilities and communities in remote locations. Satellite based Internet systems can deliver low cost high speed broadband, with minimal hardware investment & installation.

DIRECT IMPACT

Satellite based Internet systems can facilitate access to multimedia online e-learning, skill trading and civic engagement for socioeconomic groups and communities in remote locations. Benefits including reducing the global digital divide.

HOLISTIC IMPACT

This satellite digital inclusion strategy connects ideally with education & literacy targets 4.1/4.2/4.3/4.4/4.5/4.6/4.7/4.a/4.b/4.c.

KEY STAKEHOLDERS

The Potential groups/organizations/institutions needed to advance this target :

- ✓ Government, NGOS, Public Education Sector, Indigenous Services, Telecoms (Both Public & Private), Internet Server Providers, Web Hosting.

INDICATORS

- ✓ Proportion of population covered by a mobile network, by technology;
- ✓ Percentage of households that have access to fixed broadband Internet access services;
- ✓ Percentage of households, schools and small businesses having access to speeds 50+ Mbps download, 10 Mbps upload and unlimited data.

CASE STUDY

OneWeb is building the world's first global communications network in space to deliver high-speed services capable of connecting everywhere, to everyone. Currently launching the first large-scale mass-produced constellation of satellites in Low Earth Orbit at 1,200km altitude.
<https://www.oneweb.world/launchprogram>



SDG TARGET ID: 10.1

By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average.

KEY ISSUES OVERVIEW

As the available information and resources continue to increase online, a lack of internet access creates significant obstacles, especially because majority of the jobs now require technology proficiency and computer literacy skills to be hired.

Without digital access/digital literacy and or being under-connected, finding employment and continuing ones' education becomes much more difficult and creates a significant obstacle in achieving a sustainable income. People who are affected tend to be those below the poverty line, or just above, live in low-moderate income areas, citizens without a high-school degree/higher education, minorities, and low skilled/low-literate citizens.

DIRECT IMPACT

With the increasing digital divide, digital inclusion initiatives and public policy can complement each other to widen the opportunity gap, and tackle inequality financially. Digital access can promote the widespread use of online marketplaces and can promote small business' in addition to start-ups, proportionately boosting small businesses in low-income/rural areas through e-commerce. Moreover, such digital inclusion strategies can reduce the imbalance of educational resources in low-income areas, with zoom and digital access, students in low income areas can join classrooms online remotely, not having to worry about additional transportation fees.

HOLISTIC IMPACT

Lowering the cost of data and internet coverage plans would have a significant impact to almost all of the sustainable development goals. Research conducted by McKinsey analyzing India's massive digital growth has shown that when data costs are lowered, digital adoption skyrockets. As more and more people come online, there is an impetus for firms to innovate and digitize their businesses. Moreover, ICT strategies help facilitate almost all SDG's by resolving the barriers to quality education, increases the chances of securing a job (employment security) which in turn increases household-income, and thus closing the inequality gap, which contributes to a strong economy and ultimately resulting in a more sustainable community. The SDG's primarily furthered are:

- ✓ Target 11.1, as it increases the opportunity gap educationally and financially, people have more employment options which mean more sustainable incomes;
- ✓ Target 1.4, as affordable ICT's ensure increased equal access to basic online services and economic resources

- ✓ Target 4.4, as affordable ICT's can provide adequate quality education universally, which consist of digital literacy support and access to other resources which can aid and strengthening the skills needed for the employment sector;
- ✓ Target 8.5, as these digital inclusion strategies would enable women to further their career, whether it's through Academia or strengthening their skills to successfully participate in the work force.

KEY STAKEHOLDERS

- ✓ Considering affordability is one of the primary barriers to receiving universal access to internet, one of the groups and organizations necessary to advance this target involve active participation and collaboration from major telecommunication and internet networks/companies which can aid in the process of delivering access to the low-income communities.
- ✓ The government is also a primary key stakeholder, as public policy must be drafted to ensure equal and affordable access to internet to people in low-income areas, meaning cutting costs of Wi-Fi-subscription fees, and data packages, and other affordable digital literary resources.
- ✓ Educational institutions would be an additional supportive group that would help advance this target by ensuring classrooms provide an adequate amount of technology in classrooms for students who aren't able to receive it at home, including 24/7 hours library access, take-home tablets/computers, etc., in addition to non-profit organizations that can offer digital literary trainings, ranging from basic classes on how to send e-mails, to more advance courses consisting of researching, etc.

INDICATORS

Using government records to determine if household's wages have increased with the universal access to information communication technologies and digital inclusion strategies is one approach to measure the effectiveness. A further approach to measure effectiveness would be to implement a survey such as the Survey of Adult Skills which provides a direct measurement of what youth and adults actually do with the technology they are provided and how those skills are associated with other quality of life indicators such as,

- ✓ Assessments of literacy/educational history as well as parents educational background
- ✓ Personal employment/earnings history
- ✓ Use of skills at work/everyday life
- ✓ Self-reported health and wellness



SDG TARGET ID: 10.2

By 2030, empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

KEY ISSUES OVERVIEW

In low to medium income areas, there is often a lack of digital infrastructure and knowledge. This lack of access further propagates the digital divide, as these communities cannot engage in modern uses of technology.

Disenfranchised communities are negatively impacted by this issue, as they are not able to engage in societal conversations or be aware of ongoing issues in society without access to the internet. If this issue of access was solved, these communities would be empowered to contribute to political discussions as they have new means to connect and discuss issues they face with people in similar circumstances.

DIRECT IMPACT

The direct impact digital inclusion would have would be including all people of society in conversations. Time and time again we have seen how the media generally portrays the views of the dominant group, without the input of other groups. Access to the internet would allow all people irrespective of age, sex, disability, ethnicity, religion, or economic status to engage in meaningful conversations with those around them, to provide different viewpoints on common issues. With this new group of people participating in societal conversations and the political will it generates, there can be more solutions geared towards helping to lift these people up and help them prosper in a more communicative and inclusive society.

HOLISTIC IMPACT

Overall, with more people able to access information and participate in political conversations, it will enable public policy makers to hear a more diverse set of views thereby making new policy platforms much more inclusive to those who were previously without voices in our digitally dominated society. This potential upward movement spurred by digital inclusion would also greatly benefit the respective economies, as there would be more families with increased cash flow to spend on themselves or back into the economy.

- ✓ Targets 10.3 and 10.6, as the more information one is exposed too, the more resource they have access too, which results in better informed decisions from societies citizens and improved representational/inclusive policies that address the needs beyond the dominant classes (such as underserved communities).
- ✓ Target 5.5, as more voices are being heard and included with such digital inclusion strategies, structural inequalities, found

in income, education and opportunity become addressed, which ultimately closes the digital gender gap.

- ✓ Target 4.3, as it would ensure the equal access for all individuals to receive affordable and quality education and would educate students on political/social engagement
- ✓ Target 4.7, as it would ensure all learners and individuals have the proper skills and education to participate socially and politically to promote a sustainable development and lifestyles.

KEY STAKEHOLDERS

- ✓ Government agencies would need to be the most involved in this process, as they can provide crucial supports for telecommunication firms to install new infrastructure and reduce their costs. They can also enact public policy to help drive the movement to get people online. This would be a mutually beneficial arrangement as the government would be seen as helping those in need and telecom firms would not lose revenue by simply lowering prices as an act of goodwill.
- ✓ Schools and Community Support Centers & Services which would encourage the participation and voices of minorities in and outside of class activities ensuring social inclusion and education attainments for all children regardless of personal circumstances and family backgrounds.

INDICATORS

One way to measure effectiveness is to see if an individual's banking, socials, and any other governmental documents are online to see if they have access to the online information politically, socially, and medically, as this would show if they are actively participating in political discussions, attending social events, and being updated on what is occurring in the news. An additional way to measure effectiveness would be to monitor yearly what programs the government enacted to promote the social, political, and economical inclusion of all citizens, and how much funding has been provided for such programs.

CASE STUDY

1. A case study conducted in South San Francisco by **The Community Technology Network (CTN)** provides digital literacy training to seniors, low-income residents, and citizens with disabilities. CTN recognizes the barriers these individual's face and facilitates mobile tech-in events where students and other individuals bring their own mobile devices to which they are most comfortable with, receiving training from volunteered teachers from tech companies, ensuring such individuals know how to use their devices to the fullest extent, help them find significant resources, etc.¹



By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

KEY ISSUES OVERVIEW

Proposed digital inclusion strategies include digital crowdfunding solutions for civic & international housing investment and development. Use of philanthropy NGOs that facilitate the support of specific philanthropic projects.

Digital platforms that provide investors to browse through a selection of projects proposed by NGOs worldwide. Digital platforms that provide civic cooperation, access to low-cost capital and facilitate sustainable development policies. Who is negatively impacted are low-income families, minorities, women, children and people with disabilities (70% of the world's poor are women). A well regulated crowdfunding digital platform could attract many new investors for sustainable housing projects and reduce costs.

DIRECT IMPACT

Crowdfunding as a target digital strategy for affordable sustainable housing. The World Bank report "Crowdfunding's Potential for the Developing World" states that "While crowdfunding is still largely a developed world phenomenon, with the support of governments and development organizations it could become a useful tool in the developing world as well."

HOLISTIC IMPACT

Digital Crowdfunding platforms for affordable sustainable housing connects to targets 8.9 (sustainable tourism) and targets 15.1/15.5 (heritage & natural protection projects).

KEY STAKEHOLDERS

Potential groups/organizations/institutions needed to advance this target : Governments for permits and planning, World Bank, NGOs, Tourism industries, Mortgage and Housing Corporations, Indigenous Services.

INDICATORS

- ✓ Proportion of urban population living in slums, informal settlements or inadequate housing;
- ✓ Percentage of the population who use emergency shelters;
- ✓ Percentage of households in core housing need, by type of need;
- ✓ Reduce chronic homelessness by 50% by fiscal year 2030;
- ✓ How much new funding allocated to new housing projects;
- ✓ The increase of new investors.

CASE STUDY

Habitat for Humanity International (HFHI)

<https://www.habitat.org/> - Homes are built using volunteer labor and Habitat makes no profit on the sales. Habitat has helped more than 29 million people construct, rehabilitate or preserve homes since its founding in 1976. As of 2013, Habitat was the largest not-for-profit builder in the world.



By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries.

KEY ISSUES OVERVIEW

Proposed digital inclusion strategies include the facilitation and development of ‘Smart Cities’ through Mobile Apps, Urban Wifi and Digital PSA/Social Platforms.

Current digital divide in urban environments impacts mental health, congestion, waste management, air quality and people with disabilities and respiratory health problems.

DIRECT IMPACT

A connected ‘Smart City’ as a target digital strategy for sustainable urban living and digital inclusion. A smart city improves access to the information and data a city needs to help it become an economically, socially and environmentally-connected community. Provides finding new ways for residents and businesses to improve navigation or accessing government services while democratically engaging with local policymakers.

HOLISTIC IMPACT

These connected ‘Smart City’ strategies potentially connect to Target 4.7 (heritage protection), Target 5.5 (cultural participation), Target 8.9 (sustainable tourism), Target 12.8/12.b (global citizenship, sustainability).

KEY STAKEHOLDERS

Potential groups/organizations/institutions needed to advance this target:

- ✓ Governments for permits, civic engagement and planning. Transport and Infrastructure Sector (Public and Private). Tourism Industry. Telecoms (Public & Private). Urban Planning Agencies & Consultants. Mass Transit.

INDICATORS

- ✓ Percentage of population living in areas where ambient air quality standards are met;
- ✓ Productivity Lost due to Congestion Index;
- ✓ World’s Real-time Air Quality Index;
- ✓ Ratio of land consumption rate to population growth rate;
- ✓ Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically;
- ✓ Percentage of Population living within 500 meters of a public transport stop;
- ✓ Quantity of waste diverted per capita, by type of diversion;
- ✓ Percentage of population with access to quality housing.

CASE STUDY

Smart Cities Collaborative 2020 America Mission is to maximize the transformative potential of emerging technologies and new mobility options to increase access, safety and economic opportunity for all residents while reducing congestion, vehicle miles traveled and greenhouse gas emissions. <https://smartcities.t4america.org>



Strengthen efforts to protect and safeguard the world's cultural and natural heritage.

KEY ISSUES OVERVIEW

The intersection that connects culture and technology is one that stretches centuries across human history and is found in almost all of the UN's SDGs at each goal's core lies the spirit of sustainability.

It is only right that digital inclusion strategies address our world's cultural and natural heritage, testaments to humanity and the human spirit, and the issues that surround it such as a lack of funding in the ethical use and application of modern technology in the preservation, restoration, or conservation of cultural and natural sites and objects. The general public, governments, and stakeholders can benefit from the use of ICTs that allow marginalized groups' experiences of witnessing and appreciating these cultural and natural gifts from generations that preceded ours (e.g. mobile tourism apps) that would not have experienced it otherwise and further draw attention to the importance to preserve said gifts for future generations.

DIRECT IMPACT

ICTs can be used to preserve cultural objects like endangered texts, old films, or linguistic artifacts can be preserved through multimedia, digital platforms. Tourism industries can also employ technology in preserving natural heritage tourist sites or use ICTs to create campaigns to draw awareness to such efforts as public participation is vital to the protection of cultural and natural heritage. The digitization of cultural, natural, or mixed objects through digital libraries and museums not only sustainably preserves them but allows marginalized groups (e.g. low-income families) to become involved in and experience cultural and natural heritage, impart knowledge, and participate in society.

HOLISTIC IMPACT

With digital inclusion strategies in place to support cultural and natural heritage, we can develop other SDGs such as:

- ✓ Target 4.7 as heritage protection would foster interest in sustainable development, a culture of peace, global citizenship, and appreciation of cultural diversity as cultural and natural heritage know no bounds;
- ✓ Target 5.5 as it would advocate for equal cultural participation for all;
- ✓ Targets 8.9 as it would encourage a sustainable tourism industry;
- ✓ Targets 12.8 and 12.b as it would encourage global citizenship, sustainability, and sustainable tourism;
- ✓ And targets 15.1 and 15.5 as certain natural heritage projects would prevent these.

KEY STAKEHOLDERS

To form and support digital inclusion strategies within this particular context of protecting the world's cultural and natural heritage

- ✓ Governments can fund conservation and preservation efforts and enact policies that support and protect cultural and natural heritage like disaster risk reduction legal frameworks.
- ✓ Museums, archives, libraries, and scholars from institutions of higher learning can act as forefront agents in the preservation of endangered cultural and natural heritage sites or artifacts through digitization projects or other forms of technological innovation.
- ✓ Tourism industries can incorporate ICTs to support and promote sustainable tourist practices.
- ✓ The general public can advocate for cultural and natural heritage by pressuring their governments into supporting said endeavours by using ICTs to organize accordingly.

INDICATORS

The effectiveness of digital inclusion practices within cultural and natural heritage endeavours can be measured through:

- ✓ How much funding has been allotted to digitally inclusive efforts in the cultural and natural heritage projects;
- ✓ How have the government and other stakeholders or partners maintained transparency with the public in regard to providing regular updates as to which expenditures have been attended to;
- ✓ How many policies have been created to safeguard cultural and natural heritage projects;
- ✓ And to what extent has the general public been allowed to become involved with the process and in what ways has this fostered social cohesion.

CASE STUDY

The **Europeana** platform is Europe's digital cultural platform that "allows for responsible, sustainable and innovative tourism" as it supports cultural heritage empowerment through its display of digitized collections of cultural heritage from the EU member states.¹ The platform is inclusively built as it's available in multiple languages, has plenty of digitized cultural work, creates and applies guidelines for interoperability within the digitization of cultural material, and serves as a digital space for cultural specialists to digitally contribute knowledge.



SDG TARGET ID: 12.8

By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature.

KEY ISSUES OVERVIEW

Eleven thousand scientists worldwide warn that “planet Earth is facing a climate emergency.”¹ They explain that we have to change our lifestyles and implement major transformations in order to secure a sustainable future. The issue addressed by this specific target is that many people do not have access to relevant information and are not aware of sustainable development and lifestyles.

As a result, there are more vulnerable communities facing extreme weather conditions and experiencing the detrimental effects of climate change that will only continue to get worse. By ensuring that everyone has relevant information and is aware of what they can do to participate in mitigating the climate crisis, we can curb its disastrous effects and possibly avoid human extinction.

DIRECT IMPACT

The Internet and ICTs are vital in educating society about the effects of climate change and what each individual and group can do to help mitigate these effects. Digital Inclusion strategies can help advance this target by ensuring that everyone has access to up-to-date news and research. Fostering awareness helps each actor in society do its part in combatting climate change.

HOLISTIC IMPACT

Working to give people relevant information and bring awareness to the state of the planet will equip people with the knowledge and tools they need to develop more sustainable habits. These will extend not only to climate change but also to other environmental areas linked to it. Digital Inclusion strategies can help to facilitate this target in connect to the following targets:

- ✓ SDG 7 (affordable reliable, sustainable and modern energy)
- ✓ SDG 11 (cities and human settlements)
- ✓ SDG 12 (sustainable consumption and production patterns)
- ✓ SDG 13 (urgent action to combat climate change and its impacts)
- ✓ SDG 14 (oceans, seas and marine resources)
- ✓ SDG 15 (sustainable use of terrestrial ecosystems)

KEY STAKEHOLDERS

- ✓ The government can increase funding toward climate and environmental research and put incentives on eco-friendly practices.
- ✓ School teachers can help students understand climate change and adopt eco-friendly practices in class.
- ✓ Media groups can focus more coverage on the issue of climate change.
- ✓ Cities and other governments around the world can form a knowledge-sharing network of new research and best practices.
- ✓ Scientists and other academics can offer their research to the government, citizens and businesses.
- ✓ Companies and businesses can adopt eco-friendly policies and educate their employees to implement good practices at work and at home.

INDICATORS

The effectiveness of digital inclusion strategies can be measured through evaluation reports of the following data (collected through a survey or tests):

- ✓ Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies; (b) curricula; (c) teacher education; and (d) student assessment¹

CASE STUDY

In 2018, the **Government of Ontario** partnered up with the Public Policy Forum (PPF) to create a report called the Ontario Digital Summit Report where the government can update residents and hold panels (or meetings with residents) to voice their concerns and suggest good practices.¹ This meeting is inclusive as the recordings are up for residents to watch. Also, people who do not work in the environmental field were also able to weigh in on the conversation and give talk about their experiences.



SDG TARGET ID: 16.7

Ensure responsive, inclusive, participatory and representative decision making at all levels.

KEY ISSUES OVERVIEW

Digital technologies enable the government on a national and local level to be more effective and reach more citizens. Democracy relies on strong civic engagement in order to draft policies that represent their democratic society' needs.

However, if a substantial amount of the population does not have access to internet, or are not digitally well-versed, online resources become inaccessible, denying them their rights to access/share knowledge, and reach personal and public services. Exclusion and discrimination of these groups have been a critical factor in political and civil conflict and have contributed to the increase in inequalities (especially recently). Thus, equal and inclusive participation of diverse citizenry in politics is essential and begins with internet access as it empowers individual's political awareness, holds governments accountable which in turn improves the quality of policies and legislation, solidifying the public's trust in its institutions.

DIRECT IMPACT

It is significant for effective governance that political institutions are inclusive and responsive to a wide spectrum of social groups. The digital inclusion strategies to help advance this target consist of ensuring marginalized communities, those with disabilities, and elders primarily have access to the internet and then possibly creating more groups online through social media or their governmental website to provide a direct line to those in government, enabling those in political positions to hear voices left unheard and often ignored.

HOLISTIC IMPACT

The digital inclusion strategies stated above can help facilitate alternative significant SDG's/targets, as inclusive governance is an attempt to avoid social exclusion, address inequalities, and improve the issues in policies that reinforce such inequalities.

- ✓ Target 11.1, as more voices and people are being represented in governmental policies/decisions.
- ✓ Target 16.6, as more representative decision making occurs, institutions by those means are held more accountable and forced to be much more transparent.
- ✓ Target 3.7 and 3.8, by providing them access to comfortably seek, access affordable healthcare services

KEY STAKEHOLDERS

- ✓ Governments have a major role to play in ensuring inclusive and representational decision-making and overcoming marginalized groups' exclusion. Governmental accountability and answerability are extraordinarily significant to ensure they are reaching out to marginalized communities, and that their goals of bringing marginalized communities closer to their governments in being met.
- ✓ Educational institutions or non-profits would also be necessary to be a key stakeholder, as they would create workshops to teach online users how to navigate online and find necessary information related to politics that affect their well-being

INDICATORS

- ✓ What practices have been drafted to ensure that marginalized voices are heard and included within the political and social discussions
- ✓ Monitoring what diversity and inclusivity programs towns/local governments have implemented and how much funds were allocated to these programs yearly
- ✓ Surveys that occur after using the online social services/governmental services which measure the user' experience in using their public online service (whether they were satisfied/not, if their needs were met, etc.).

CASE STUDY

Comcast internet Essentials created in 2011 offers high-speed internet to low-income households, college students, senior citizens for \$9.95 per month. Participants also have the option of purchasing a low-cost computer and access free digital literacy training either in-person, online, or in print.¹ Since 2011, Comcast has provided increased speeds, offered in-home Wi-Fi (at no additional cost), which has provided a level of comfort to families struggling financially, and has allowed for a substantial increase in the number of people participating online both socially and politically.



SDG TARGET ID: 16.10

Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements.

KEY ISSUES OVERVIEW

A democratic society ensures the basic right to know and be informed on what the government is doing and why. Yet many people worldwide still do not have access to the information/resources and documents needed for their overall well-being.

Access to information is imperative as it helps individuals make their decisions based on facts, how public funds are allocated, and establishes, supports the democratic and participatory practice of governance. Moreover, if access to information is not being upheld, neither is freedom of speech, one of the basic human rights. Those who tend to be negatively impacted from the violations of these fundamental rights are marginalized communities, citizens without higher education, seniors, and people of low-socio-economic status.

DIRECT IMPACT

A significant amount of remote towns/communities don't have access to a library, and thus, ensuring one or more libraries are located in every town/city per the population and ensuring such libraries have a certain level of take-home technology that can be rented for a weekend, a night, etc., is one digital strategy that can be adopted. By doing this, many will not only have access to technology at their convenience, but also promote universal literacy with the support of dedicated staff, providing a network of delivery sites for government programmes and services which in turn closes the gaps to access to information, while preserving and providing access to the world's culture, legal information, networks, etc.

HOLISTIC IMPACT

Digital inclusion in ensuring public access to information and protecting fundamental freedoms can further SDG's such as;

- ✓ Target 4.1, as it increases access to educational services such as increased access support in learning, materials, and new technology
- ✓ Target 10.2, as it promotes and empowers the inclusion of all individual's from diverse backgrounds and underserved communities.
- ✓ Target 16.6, as it increases public knowledge of institutions goals, public policies, laws, regulations, human rights, etc., which hold governments more accountable for their actions or miss-step or abusing the law.

KEY STAKEHOLDERS

- ✓ Active participation and collaboration from libraries are key, as libraries provide an avenue to achieve universal public access to the internet, and ensure people have the skills they need to access the information through these technologies.
- ✓ Open governmental partnership on both a local and national level are also a critical stakeholder, as it requires proactive releasing of information, strengthening the right to information and are key entry points to support people engagement in public decision-making and accountability processes.

INDICATORS

"Number of countries that adopt and implement constitutional and or statutory/policy guarantees for public access to information" Goal 16.2 does present a number of potential measurement challenges.

- ✓ By those means, such digital strategies can be measured by seeing which countries/towns/cities have Freedom of Information Laws (FOI laws), the extent to which such laws reflect national human rights standards through non-profit legal organizations
- ✓ Measuring government efforts to publicly promote the right to information
- ✓ The capacity of the governments and public institutions in providing information upon request by the public

CASE STUDY

To measure effective implementation, that go beyond just the mere existence of universal informational access guarantees, **The World Bank** had initiated a project to develop, "a core set of indicators on the Right to Information Drivers of Effectiveness - the RIDE Indicators - to help countries assess the implementation of access to information laws, enabling them to compare their data with that from other agencies, including the World Bank, Human Rights Commissions or Information Commissioners, judicial records, civil society statistics and academic research. These drivers of implementation effectiveness include (i) enabling conditions, (ii) demand for information; (iii) institutional capacity, and (iv) oversight.¹



Enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms.

KEY ISSUES OVERVIEW

The main issues of digital inclusion consist of low or no access to and international collaboration on science, technology, and innovation to inhibit knowledge sharing among the North-South, South-South, and triangular regional.

Specifically, these digital inclusion issues involve low coordination among existing mechanisms in the United Nations and global technologies. These issues impact developed and developing countries across the globe, especially countries in the North-South, South-South, and triangular regional. These issues emphasize the responsibility of the United Nations to improve coordination in existing non-technology and technology inclusion mechanisms. If these issues are solved, the above-mentioned countries and intergovernmental organization will benefit the most.

DIRECT IMPACT

Digital inclusion strategies can use science, technology, innovation, and knowledge to collect data, mobilize resources, and assist development in order to enhance information communication technologies, technology, bank, and science sectors, eradicating poverty and increasing global sustainable development (Goal 17). Digital inclusion advancements can further enhance knowledge sharing and coordination across global governments, especially the North-South, South-South and triangular regional, and the United Nations. These strategies can directly contribute to international funding for data and statistics, which was 690 million dollars in 2017.

HOLISTIC IMPACT

Digital inclusion strategies can indirectly facilitate target 17.6, in connection to targets 8.2, 8.3, 9.2, 9.b, 9.c, 12.a, 17.7, 17.9, 17.16, 17.17, 17.18, and their associated indicators. Digital inclusion initiatives use science, technology, innovation and knowledge to collect data, mobilize resources, and assist development to enhance ICT, technology, bank and science sectors, eradicating poverty and increasing environment-friendly development and sustainability (Goals 12, 17). These digital inclusion strategies can offer universal, affordable and equal Internet access, especially in the least developed countries, by 2020 to increase technical, technological and financial skills and support, employment and GDP (Goals 8, 9).

KEY STAKEHOLDERS

- ✓ Key stakeholders, who can advance target 17.6 and digital inclusion strategies, include global governments, especially the United Nations, and their science, technology and communication sectors of developing and developed countries, especially the North-South, South-South and triangular regional.
- ✓ Governments and their communication industries facilitate and implement international partnerships across developed and developing countries; furthermore, science and technology industries and infrastructures to collect data, mobilize resources, and assist development in order to enhance information communication technologies, technology, bank, and science sectors, especially in and between North-South, South-South and triangular regional and international countries cooperation.

INDICATORS

As Target 17.6 states, indicator 17.6.1 is the “number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation” and indicator 17.6.2 is the “fixed Internet broadband subscriptions per 100 inhabitants, by speed” (“Goals 17”). Following the target indicators, another indicator can include the growth of global technology infrastructure in each country and another indicator can include the growth of implantation coordination between and of international countries at the United Nations level. Also, an indicator can exist as the growth of science and/or technology across each industry in each country due to international partnerships.

CASE STUDY

A successful implementation of Target 17.6 is the partnership between Universities Canada and Asociación Colombiana de Universidades that created joint programming of higher education institutions in students, research, and academia for science, technology and innovation in Canada and Columbia (Stacey). Mitacs, Canada’s not-for-profit research organisation, and Minciencias, Columbia’s organization, have partnered to have a five-year commitment to support more than 60 undergraduate students in **Mitacs’s Global Link Research** Internship program and Columbia’s Nexo Global Summer research program (Stacey). John Hepburn, the Mitacs Chief Executive Officer (CEO) and Scientific Director, said that the agreement will “advance innovation” and “bring our two countries together” (Stacey).



Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

KEY ISSUES OVERVIEW

We need to foster partnerships in public, public-private and civil society spheres in order to advance strategies of experiences and resources.

These issues have low or no access to and international collaboration on science, technology, and innovation to inhibit knowledge access and collaboration across global countries, especially between developing and developed countries. Without digital inclusion technology, developing countries do not have any or equal access to networks of developed countries that in turn, unable to accept and offer partnerships to increase digital inclusion in needing developing countries. These issues emphasize the responsibility of the United Nations to improve coordination in existing non-technology and technology inclusion mechanisms.

DIRECT IMPACT

Digital inclusion advancements can use science, technology, innovation and knowledge to collect data, mobilize resources, and assist development in order to enhance information communication technologies, technology, bank and science sectors, eradicating poverty and increasing global sustainable development. Digital inclusion strategies can directly contribute to international funding for data and statistics, which was 690 million dollars in 2017 (Goal 17). These strategies can enhance debts, exports, duty-free and quota-free market access and global macroeconomic stability. Digital inclusion also allow equal access to digital information between developing and developed countries to foster, build, and strengthen public, public-private and civil society spheres in order to advance strategies of experiences and resources.

HOLISTIC IMPACT

Digital inclusion strategies can indirectly facilitate target 17.6, in connection to targets 4.b, 8.a, 8.b, 9.a, 10.5, 10.6, 10.a, 10.b, 11.c, 16.3, 16.8, 16.10, 17.1, 17.2, 17.3, 17.4, 17.5, 17.7, 17.8, 17.9, 17.10, 17.11, 17.12, 17.13, 17.14, 17.15, 17.16, 17.17, 17.18, and 17.19, and their associated indicators. Using international partnerships, countries can use digital access to increase equal academia and career courses and opportunities. Digital inclusion strategies further promote a participatory environment, in which citizens of international countries can share their opinions and news, specifically in the topic of environments, to promote sustainability. Collectively, these digital access partnerships increase the number of people who can collect data, mobilize resources, and assist development in order to enhance ICT, technology, bank and science sectors, eradicating poverty and increasing global sustainable development.

KEY STAKEHOLDERS

The key stakeholders of target 17.17 include all governments, industries and citizens, especially technology industries, of developed and developing countries. Because governments accept and oversee partnerships between governments and industries, developed governments, which have the highest resources, will oversee the proper integration, implementation, and facilitations of industries and their products, especially in and of the technology industry, into developing nations. Developing governments receive the support of developed governments and can contribute their economies and industries to developed countries and other global countries. Citizens of both governments and countries are included in partnerships to collectively promote public, public-private, and civil society spheres to increase experiences and resources.

INDICATORS

Suggested indicators include the annual growth of partnerships of public, public-private, and civil society spheres between countries and the growth of annual growth of partnerships between countries. Suggested indicator is number of discussions between countries for potential partnerships between countries. Another suggested indicator is the United States dollars for public-private, public and civil society partnerships internationally to include all partnerships to measure success of digital inclusion strategies.

CASE STUDY

A successful example of an organization working to create partnerships and connecting people to digital access is the United States Agency International Development (USAID) and its **Center for Digital Development's Digital Inclusion** practice. The USAID is involved in area, in which approximately 1 in 3 people are not online, totalling to 4 billion people without Internet and opportunities. Center for Digital Development's Digital Inclusion practice seeks to "expand connectivity and digital access by providing technical assistance, driving inclusive policy and infrastructure development, and creating tools and model performance indicators that both Missions and private investors can use to facilitate investment into new connectivity business models and support countries on their journey to self-reliance".



Call to Action

What happens next?

We have the responsibility to ensure everyone in our communities can connect to the Internet. Facing the social consequences of the coronavirus outbreak requires acknowledging digital inequality and building bridges to overcome the barriers to digital inclusion. Our main goal has been to align the United Nations' Sustainable Development Goals with digital inclusion strategies using what we have termed, "An SDG Digital Inclusion Framework."

THE TOOLKIT

In companion with the SDG Digital Inclusion Framework, we have developed the SDG Digital Inclusion Toolkit, which provides individuals with a means of tracing the effectiveness of their digital inclusion projects, and whether they are adequately aligned with the Sustainable Development Goals. It is a set of processes that will help you to evaluate the impact of your digital inclusion project. It will also allow you to show others how successful your initiatives have been at creating change, and areas that can be improved moving forward in order to generate an even greater impact.

HOW TO NAVIGATE THE TOOLKIT

The Media Ethics Lab has created and provided practical examples, ideas, and steps around four capacities: identifying problems, getting started, implementing action, and assessing and monitoring action. These sections are mutually reinforcing: while public institutions and organizations have a "menu of options" to choose from based on their individual starting points - which may be determined by factors such as their existing efforts, needs and goals, and community - coordinating collective efforts among the four capacities creates a far greater impact.



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The toolkit will be available February 2021.

