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Following the political declaration adopted at the occasion of the United Nations' 75th anniversary in September 2020, the UN tary -General in September 2021 released the Our Common Agenda policy. The Cnda includes for a Global Digital Comed upon at thN of the Fufure in September 2024. This will from a staknggement process governments, the United Nations system, the private sector (including tech companies), vil soci -roots organisations, demi individuals, including women and youth

The Global Digital Compact is expected to "outline shared principles for an open, free and secure digital future for all". The Common Agenda report suggests issues that it might cover the following:

- Digital connectivity;
- Excellence in digital data collection, aggregan, interolity and management;
- Avding Internet fragmentafion;
- Providing people witnss r data is used;
- Applicafion of human rights ne;
- Promoting a trustworthy Internet byng accounlity criteri discrimination and ming con

A background note on the Global Digital Compact is available here.

United Nations Member States adopfed a Declaration on the Commfion of the Seventy-Fifth Annof the United Nations (A/RES/75which contains the following pledge:

Digital science is an interdisciplinary field that combines computer science, mathematics, and other related disciplines to develop innovative approaches for analysing and modelling complex data sets and data systems, including natural, social, and technical systems. Digital science is based on collecting, analysing, and interpreting large data sets generated by various sources, such as sensors, simulations, experiments, and surveys. Nevertheless, science interpretation entails an additional step requiring the construction of logical scientific arguments that explain the data, and validation mechanisms, including scientific knowledge and individual expertise. The emergence of synthetic data is another important innovative development to support research and development in healthcare and other sectors facilitating the privacy and security of individuals.

Digital science is essential for our future because it revolutionises many aspects of our lives. Here are a few ways digital science is important:

- Advancing scientific research: Digital science enables researchers to analyse vast amounts of data and discover patterns and correlations that were previously difficult or impossible to detect, especially in electronic health records (enhancing the use and utility of real-world evidence). This leads to breakthroughs in genetics, neuroscience, and climate science;

- Improving healthcare: Digital science facilitates healthcare transformation by enabling doctors and researchers to analyse patient data to enhance existing services, develop new services and products and develop personalised treatments. This can lead to better outcomes and lower costs.
- Enhancing education: Essential to sustainable healthcare systems are both digital and health literacy. This literacy is needed for everyone, including healthcare professionals (both for qualification and continuing education), patients, carers, policymakers and citizens. Digital science is making education more accessible and personalised. For example, it enables online learning platforms to offer customised lessons and assessments to individual students based on their learning styles and progress.
- Transforming business and industry: Digital science drives innovation in finance, transportation, and manufacturing by enabling companies and public sector governments and organisations to analyse data and optimise their operations.
- Enhancing population health data: Digital data can be collected, aggregated and combined (especially with non-clinical data such as social determinants of health) at a highly granular level to create new insights and fuel greater levels of precision or personalised medicine.
- Digital science improves our understanding of ecosystems, their functions, and the provision of the services enabling underpinning data and knowledge for decisions and actions urgently needed for conservation.

Digital technology has revolutionised how scientific research is conducted, disseminated, and shared. One of the key benefits is that it enables open science, a movement to open the processes of scientific knowledge creation, evaluation, and *UNESCO Recommendation on Open Science* *openness fosters seamless collaboration among researchers from different parts of the world, who can work together to solve complex problems that require diverse expertise. In addition, open science allows for the meaningful involvement of society in scientific research by providing opportunities for citizen science projects and other forms of public engagement. This contributes to a more equitable and inclusive scientific enterprise.*

If implemented correctly and systematically, digital science has the potential to help achieve unity of science by enabling interdisciplinary and transdisciplinary collaboration and providing tools for data sharing, analysis, and integration.

One of the challenges of achieving unity of science is that different disciplines often use other methods, theories, and languages, making it difficult to communicate and collaborate across disciplines. However, digital science tools such as data visualisation, artificial intelligence and machine learning, and network analysis can help to bridge these gaps by enabling researchers to work with large and complex datasets and identify patterns and relationships that might be difficult to detect using traditional methods. Nevertheless, social injustice is a major threat, if digital science is used adequately and would increase social gaps even further, especially in underdeveloped countries.

Digital science can also promote data sharing and collaboration across disciplines and national borders by providing open-access data repositories, such as the Global Biodiversity Information Facility and the Ocean Biogeographic Information System. These repositories enable researchers worldwide from different disciplines to access and analyse data from various sources, which can lead to new insights and discoveries. This is particularly useful in addressing the national and transboundary challenges associated with implementing the post-2020 global biodiversity framework and achieving a nature-positive world by 2030.

Data science can break down the traditional silos between academic disciplines and industry sectors to achieve “data in all policies” for evidence-based policies, innovations and solutions. This is illustrated in the “Health in All Policies “ initiative (https://healthyeurope.eu/) and in the Health & Prosperity agenda developed in Northern Ireland.

Digital science can promote interdisciplinary and transdisciplinary collaboration by providing platforms for communication and cooperation, such as online forums, wikis, and social media. These platforms can engage researchers and non-academic practitioners from different disciplines and institutions in other countries to share ideas, best practices, collaborate on projects, and build new networks.

Overall, if applied properly across geographies, digital science has the potential to help achieve unity of science, increasing the capacities of less favoured/underdeveloped countries by providing new tools for equitable interdisciplinary and transdisciplinary collaboration, knowledge co-production, and data sharing. By partnering with decision-makers, civil society, and the private sector to co-produce tools and knowledge, novel digital science advances are more likely to have a beneficial impact on society. Interdisciplinary and transdisciplinary teams can make discoveries and gain a deeper understanding of the world around us by working together across disciplines and sectors, using digital science tools to integrate and analyse data and co-create decision support tools. This opens the door to discoveries and breakthroughs.

Digital science can support the UN Global Digital Compact by providing tools and approaches to help achieve its goals. The UN Global Digital Compact is a call to action for companies to align their digital strategies with the UN Sustainable Development Goals (SDGs), which aim to eradicate poverty, protect the planet, and promote prosperity for all in all dimensions. Here are some ways in which digital science can support the UN Global Digital Compact:

Big data analytics: Digital science can enable companies to analyse large datasets to identify patterns, trends, and insights that can inform their business strategies and help them achieve the SDGs while maintaining a positive balance.

Artificial intelligence: Digital science can help companies to develop AI solutions that can automate tasks, reduce costs, and improve efficiency, while also promoting sustainable practices.

Internet of Things: Digital science can enable companies to use IoT devices to collect data on their operations and environmental impacts, which can inform their sustainability strategies.

Blockchain: Digital science can support blockchain technology to track and verify sustainable practices in supply chains and promote transparency and accountability. Blockchain is also an energy-intensive technique with significant environmental impacts, which needs to be acknowledged.

Digital education: Digital science can promote digital education and training, equipping workers with the necessary skills to contribute to sustainable development.

Overall, digital science can play a key role in supporting the UN Global Digital Compact by providing tools and approaches to help companies align their digital strategies with the SDGs and promote sustainable practices.

Data bias against women can significantly impact digital science by perpetuating and amplifying gender inequalities in research and society. Here are some ways in which data bias against women can impact digital science:

Increase awareness and education: Educational programs and awareness campaigns can help to raise awareness of data bias against women and promote strategies to overcome it.

The development of synthetic women's data sets offers another opportunity to reduce gender data bias.

By promoting inclusion and diversity in research, researchers can develop more accurate and comprehensive data sets that can help to promote gender equality and address issues of inequality and bias in research and society.

Digital technologies are increasingly important for healthcare delivery because they have the potential to improve patient outcomes, increase access to care, and lower costs. Here are some specific reasons why digital technologies are important for healthcare delivery:

Telemedicine: Digital technologies such as videoconferencing and remote monitoring can enable patients to receive medical care from their homes, which can be particularly beneficial for patients in rural or remote areas. Telemedicine can also reduce the need for in-person visits, reducing carbon emissions and pollution, lowering costs and increasing care access and improving patient convenience and experience.

Electronic health records (EHRs): Digital technologies can support the creation and management of electronic health records, improving patient safety and enabling healthcare providers to access patient information quickly and easily.

Data analytics: Digital technologies can enable healthcare providers to analyse large datasets in their EHRs to identify patterns and trends in patient health, which can inform treatment decisions and improve outcomes as well as lead to new products and services.

With data science, data collection may not be supported by national geographical borders.

Data analysis: Digital science enables the analysis of large datasets to identify patterns, such as spatial and temporal distribution. This information can be used to inform conservation planning and management.

Modelling: Digital science tools can be used to create models of ecosystems and simulate the effects of different management scenarios. This can help decision-makers assess the potential impacts of proposed actions before implementation.

Citizen science: Digital science can support citizen science initiatives, which involve members of the public in collecting and analysing data on biodiversity. This can engage communities in conservation efforts and raise awareness of biodiversity issues.

Mapping: Digital science tools can create detailed maps of ecosystems and identify areas of high biodiversity, which guide conservation efforts and protect important habitats.

Living things data pattern determination: Digital science affords the opportunity to see the genetic/epigenetic/genomic similarities and differences in all living things on the planet to appreciate better how to thrive together in the future.