



The Twin Transition from a Global Perspective: Framing the debate

Presentation of Preliminary Research Regarding the Twin Transition: Summary report from a series of Global Roundtables

**OECD Ministerial Meeting,
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With thanks to WPF Senior Researcher Toby Shulruff

With thanks to OECD Youthwise Members

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Environmental and digital challenges and opportunities can be seen nearly everywhere we look in today's world. These topics are significant areas of policy work. Many fora and much work has been dedicated to improving outcomes relating to digitalization and to the environment. Most typically, these issues have been treated as separate policy areas given the complexity of each. Several years ago, however, the idea of connecting the two issues — that is, the idea of using digital technologies to also address climate and carbonization challenges — took root and has developed into the term “twin transition,” a term of art that has its origins in work being done at the European Commission, a recent example of which can be seen in a manuscript by S. Muench et al, Towards a green and digital future, EUR 31075 EN, 2022.)

Upon first inspection, “twin transition” as a framing term is helpful. On one hand, the term accurately captures the idea that many if not most jurisdictions are undergoing significant advances and changes related to efforts to increase digitalization. Each region has a different set of circumstances it is grappling with, but generally, the overarching goal of digitalization has been to increase various forms of digital capacity, tools, training, and connectivity in ways that provide more sure digital ecosystems and faster, more efficient, and more resilient digital provision of services and goods. The idea is that sectors such as education, health, and other major ecosystems that support people, groups of people, and governments will become increasingly digital for the purposes of benefiting people and the societies they live in.

Adding to this idea is the other half of the twin transition term, the green or environmental transition. Early discussions about the environmental side of the twin transition have discussed decarbonization using digitalization and technology tools. The shift to see these two challenges as interconnected is useful. But what does this term mean in practice, and what specifically does this term frame?

Given the global importance of the overall discussion related to the twin transition, the World Privacy Forum based in the U.S. and the Asociación por los Derechos Civiles based in Argentina undertook a project to research and analyze what the twin transition means in practice, in

different regions of the world. This summary report is a readout of the first tranche of preliminary qualitative work we have completed on this topic.

To undertake this initial framing of the twin transition term, we held a series of global roundtables. For the roundtables, we invited leading experts in the fields of digitalization, environment, and adjacent fields. This report provides a summary of the outputs from the roundtables, and discusses the key threads that emerged in common from all of them. This qualitative work is the first of much to follow.

Summary of the roundtable discussions

For these global roundtables, we invited experts from a wide range of digital and environmental areas of work. We sought breadth in subject matter expertise, and depth of expert knowledge. We kept the framing questions simple, and began our initial conversations with the same framing questions for each discussion. No two roundtable discussions were alike, but they did yield common threads.

(In the order held)

YouthWise Roundtable

The OECD has a program for young people between the ages of 18-30 called YouthWise, which brings together representatives from OECD member and accession countries for dialogue and mutual work. WPF and ADC are steering committee members of CSISAC, which is the formal civil society stakeholder group at OECD. In order to hear from a variety of youth from multiple jurisdictions, we held a roundtable comprised of YouthWise participants. We have included a selection of essays they wrote regarding the twin transition at the conclusion of this preliminary report, which provides a more detailed look at some of their thinking.

Several key themes emerged from the YouthWise discussion; the most prominent among these was how today's young people can fully participate in the benefits of the what society has created, when the social models and the current economic and political structure have created significant and growing problems relating to disproportionate access and negative consequences related to overconsumption models. YouthWise members noted that they had no choice but to deal with the consequences of uncontrolled or poorly controlled growth of consumption models that other generations before them have created.

Youthwise members noted that the social, economic, and environmental problems they face felt deep, complex, and sticky. There was an undertone in the conversation that acknowledged that overconsumption of multiple kinds of resources (environmental, energy, digital) had left them with problems to solve that could prove to be intractable in their lifetimes. The YouthWise members provided important insight into a generational point of view that is important, and deserves and needs to be heard.

Europe Roundtable

The Europe roundtable was focused on advanced topics in digitalization and the environmental transition. A key aspect of the conversation immediately converged on aspects of measurement. The EU experts noted that it is useful to frame artificial intelligence compute within Environmental, Social, and Governance (ESG) work. The experts noted that “we are fairly early in making sure we have reliable data,” explaining that reporting of ESG is in a relatively nascent state. The discussion also encompassed how to measure any offsetting of carbon emissions through emission in something else, and measuring with precision to determine if those investments contribute to improvements or not. Audit standards will be important in this space, and everything is at an early stage, but the experts agreed that there is an overall good direction of movement.

The experts also agreed that there is a move to establish measurements that are harmonized in some way, and there is movement towards establishing more global sets of standards to facilitate this. It was not clear to the experts what kind of multilateral involvement there was regarding this effort, but they had noticed that the measurement and audit questions were playing out more at the level of standards-setting organizations as well as audit standards organizations. “This is not being driven by the multilaterals or by governments,” one expert noted. Among the questions the experts raised was enforcement of the standards, which was regarded as something that would be done by activist investors, at least in the ESG context. However, this would be conditioned on having reliable measurement data.

Another aspect of the measurement conversation in the EU roundtable related to the scale of measurement. Experts noted the ways of measuring at the city, country, and global levels. There was a detailed conversation about how measurement using mobile data could be effectuated, and how that could be best counted. All agreed that there is a lot of work needed on the issue of measurement in this area.

Regarding the term “twin transition,” there was a robust conversation among the experts in Europe regarding metaphors, and how tricky they could be. An overly optimistic framing was a concern, as the “twin transition” seemed to these experts as being framed largely from a technology point of view. The experts noted that in Latin America, lithium mining had changed the nature of the debate there, and that twin transition in Europe could mean something “radically different” than when the term is used in the Latin American context.

The discussion concluded with a lengthy discussion on e-waste, with all of the experts agreeing that e-waste is a pressing issue. They quoted some statistics, that 53 million tonnes of waste were emitted every year, and of that only 17 percent is recycled. Of this 17 percent, only 7 percent of the total returns to raw materials, leaving 83 percent remaining waste. With 50 million tons of mercury that is uncontrolled, e-waste is a problem that should not be ignored, and in fact the 83 percent of waste should be made transparent and accountable.

One expert noted that the claim that digitalization has the potential of reducing energy consumption or improving inefficiencies needs to be fully checked against measurable facts. We are not yet checking whether the potential is being fulfilled.

Asia and Australia Roundtable

The Asia roundtable produced a powerful conversation that began with an insightful discussion around data lifecycles, data as transaction, and the link between climate and privacy, it ranged through a discussion of community governance approaches, and then concluded with a detailed discussion about circular economies.

This conversation first addressed how to use math to make better assessments of measuring linkages in this area of work. One of the experts explained that “There is a link between climate and privacy. If we are melting icebergs to create digital orders, then if we apply math to this problem, we can take the Gibbs Green Energy equation and see a link between digital and green with a math worldview. We can then link climate and privacy.” https://en.wikipedia.org/wiki/Gibbs_free_energy.

Another aspect of the conversation was a discussion about the role of power and information flows, and who has control over information and the infrastructures of communications and decision making taking place around climate and digitalization. “We have more organization and more accumulation of power that is shaping public perception,” an expert noted. The experts discussed the merits of technology ethics, which touched on many aspects of conversations that were happening in other regional roundtables. From a systemic point of view, the experts discussed how infrastructures involved in digitalization today could be shifted to create more bottom- up governance approaches (citing Nobel Laureate Elinor Ostrom) and improving decision -making processes.

The experts agreed that there was a need to build a new vocabulary around measuring climate and data linkages. “We can all agree that we don’t have enough measurement for any of this,” noted one expert.

This roundtable engaged in a lengthy conversation around data custodianship, the key premise being “ We have a need to be responsible custodians of data. We have a need to be responsible custodians of the climate. And we need to recognize that these are two things we need desperately to survive as a species.” The experts agreed that a move toward this type of custodianship done together is a good connection to make, and that the idea of custodianship helped get at the idea of modern information asymmetry. Again, the experts noted that power resides in community- level work.

The experts discussed concepts around circular economies at length. The key points they arrived at were that in order to benefit from a circular economy, there was going to be a transition that

would need to occur, and that technology will play a part in that; “There will need to be a transition in technology, not just an increase in digitalization.” One expert recounted how Venezuela was one of the greenest countries in the world, because economic upheaval had forced this transition through necessity. The residents of Venezuela changed their consumption habits, benefits flowed back to local communities, and it was all necessity-driven.

An aspect of the Asian roundtable discussion that was not discussed in the other roundtables was very interesting, which was the idea of using de-duplication of data sets to reduce computation. De-duplication is a procedure by which extraneous copies of data are removed. This is done routinely in, for example, identity ecosystems to avoid fraud or errors in ID cards. But it is not yet a solution that has made it to the majority of non-expert computer users. It is an idea that holds possibility.

Africa Roundtable

The experts in the Africa roundtable converged immediately on the issue of waste in Africa, as well as the role of community networks and the need for education. These experts engaged in an advanced conversation on the circular economy, which they defined in their context as efforts focused around waste to generate money to provide local Internet access to communities in need. One expert had worked for five years on promoting self-provision of the Internet by self-organizing groups.

Regarding waste, the experts discussed the environmental waste problems in Africa with eloquence. One expert cited DITCh Project Plastic Waste, <https://ditch-plastic.org>, which has cleaned plastic waste, and worked to create local networks in this process. Another discussed the critically important role of education, noting that “It is very important to consider the educational awareness of these problems because for the most part when we are talking about technologies and the green transition, one of the things that is often forgotten is the aspect of core participation. Core participation is necessary in order to ensure that these frameworks begin to work for the communities for which they are intended.” The experts noted that technology had made a positive difference, but that at the same time, people in Africa are suffering the effects of climate and waste problems from other areas of the world. The experts discussed that the coasts of Ghana and Senegal are full of plastics, which does not come primarily from these countries’ own waste - it is largely shipped to them from other areas. Experts also noted that people don’t always know how to sort metal and plastic waste properly, and that this was having impacts on the oceans in some parts of Africa.

The experts agreed that they were seeing a lot of good innovations in bottom up approaches, and in particular those that were supporting schools and community networks. “Connectivity for its own sake can be extractive of information value outwards,” noted one expert. This same expert described how local innovation is spurring new processes that were increasing agency for people.

There was agreement that measurement was lacking, and was a key. There have been some efforts, but it has proven expensive to collect the data. Experts discussed the need for high quality birth and death registrations, which could assist in preventing corruption. In concluding, the experts agreed again on the need for bottom -up approaches that helped local communities mitigate challenges with fewer resources.

Latin America Roundtable

The Latin America roundtable produced a powerful conversation that ranged from a discussion around consumption, the rhetorical difficulties of the term “twin transition,” and ideas around how grass- roots organizations are re-defining technology in the context of local communities.

The conversation began with a discussion of the cycle of digitalization, which experts discussed in terms of larger cycles of companies collecting millions of data points for the purposes of boosting consumption of products and even devices. One expert noted, “If we are going to have digitalization only for purposes of increased consumption, we will have a bigger problem,” noting that in Latin America there are public policies that boost other ways of thinking about digital policies. Another noted that “We need to imagine other business models for digital development that are not extractive and not based on extractivism of natural resources or data or knowledge.”

There was a poignant discussion of how economies in the global south are trying to catch up economically, and how the only way to do this is to extract more. “It is very difficult to move out of this system of exchange because raw material is cheap and technology is expensive.”

The experts engaged in a very rich discussion of indigenous knowledge in the region that had provided them with other ways of thinking about planning communities and what communities can do with technology patents. There was agreement that they needed to accomplish the promise of digitalization, but that there needs to be open knowledge, open standards, and that digital rights need to be more linked to business models; preferably smaller models that promote digitalization for smaller scales. There was an acknowledgement of the balance of digitalization and the mineral cost of digitalization; Latin America has a lot of mineral resources, and the experts were eloquent regarding the need to value those resources.

“The most important transition is the energy transition,” noted one expert. The experts agreed that there was a need to think about this topic carefully, and that the terminology was important, and needed to be carefully and fully debated on its merits.

North America Roundtable

The North America roundtable included experts in the areas of technology, urban planning, digital consent structures and design, sustainability and the environment, and digitalization. In this roundtable there was a deep and wide-ranging exploration of inequalities as it relates to the

digital world, reaching across multiple domains such as education online, in online communities, and in city and native lands management.

One expert in charge of sustainability policy in one of the top 30 largest cities in the U.S. discussed economic inequalities in the context of which groups of people are invited to the table to be part of discussions and decisions regarding digital and climate problems and solutions at the municipal level. The participant noted that the climate crisis is being layered on top of other pre-existing crises, such as the housing crisis, creating a situation where economically vulnerable people are living in a day-to-day crisis environment. “We have achieved some goals, in that we are impacting some of the ways some of the things at the city are done. The changes create some friction and inertias. But among our biggest challenges is how to find champions in all of those different spaces within the community and private sector.”

This expert further noted that there were communities they had not been able to bring to the table to discuss the environmental crisis. To begin to solve the problem of facilitating a diverse input into climate-related crises, the city government is paying community leads to help the city’s workers design ways in which to engage vulnerable or overlooked communities better. “We are paying them to help us design ways in which to engage all of the different community cohorts.” The expert noted that without this intervention, multiple important communities would otherwise be excluded from discussions.

Another significant discussion in the North American roundtable centered around digital consumption. A very rich discussion tied consumption of data to data privacy, noting that overgathering of data was wasteful environmentally, and also not a good privacy practice. “How much does one email cost in carbon?” An expert asked. And do we ask ourselves — ever — if we should stop overconsuming digital resources, especially data for both privacy and environmental reasons? The expert posing that question proposed that data minimization was a policy that created positive environmental and privacy dividends.

Another North American expert discussed how indigenous people managed their lands and created sustainability over generations. “Thinking forward many generations in the digital space, is our software that we are currently creating going to benefit our grandchildren?” The expert was referencing the short lifespan of devices and software, and the often- routine consumption of new devices. Another expert noted that while humans have not been great at protecting the environment, that we are even worse about not understanding the impacts of overconsuming digital products. In contemplating why digital overconsumption is a runaway train right now, the expert noted that “data also seems more immediately capitalizable - people can recognize data about them as a resource that has been monetized and that feels very directly personal.” Experts noted that we are either at or nearing the end of the feasibility of economies based on resource extraction in the physical world. A digital expert noted that “Our desperation has led us to the last resource we can extract, which is human experience and thought.”

Key Threads that emerged from the roundtables

Several themes surfaced in each roundtable. These themes expressed themselves differently in each region of the world.

Complexity and the need for measurement

The interactions of the digital transition when interlinked with the environmental crisis were acknowledged by almost every expert across all roundtable regions as being highly complex in ways that were almost impossible to fully disentangle. Many experts made persuasive arguments that the current measurements in place for digital sustainability are weak and need substantial improvements before the full complexity of these systems could be mapped.

Without measurement, experts generally agreed that progress would be made more difficult, as would creating and enacting accountability measures in the area of digital and environmental sustainability. A frequent area of discussion for targeting measurement efforts was product lifecycle. One discussant noted that the twin crisis was highly complex, and that "...With recycling, it is difficult to find out what is actually happening when we send items out for recycling. Not all of it is transparent; we don't actually know where a lot of trash recycling is going; a reasonable person can't easily find out where their recycled trash ends up." Mandatory, sustained, and interpretable measurement across various domains was seen by many of the experts as one of the keys to achieve improvements. "Without measurements in place, how can we know where the baselines are?"

Lifecycle

An area linked to the measurement discussion and mentioned by almost all of the regional roundtable experts was the issue of digital and environmental lifecycles. The experts provided abundant examples of lifecycles. But it was the discussion of the long lifecycles of digitalization by-products — including the creation and manufacturing of devices to capture and store data, the physical and energy infrastructure to share and provide power to share digitalized data, energy to cool data centers being used to store the data, and the ever-expanding environmental costs of the digital storage requirements — that provided particularly poignant examples. "If I think about the sheer magnitude of photos and videos that are being collected and stored in continually growing archives on our planet, the sheer amount of information we are creating and storing creates an energy consumption issue that is nearly beyond understanding or fully measuring." There is a dearth of work on measuring lifecycles of data from beginning to end, lifecycles of physical products, and a lack of mandatory requirements for transparency in the results of lifecycle tracking and measurement.

Consumption and true costs

Currently, digital storage is perceived by most people to be fairly inexpensive at a personal scale. For people who once paid to have photos developed on paper, digital images seem very inexpensive in comparison. However, experts in the roundtables noted that there is a lot of misunderstanding about the true cost of overconsumption of digital goods. “There is a widespread collective misunderstanding that the digital storage of millions of digital photos is seen as “free” in comparison with storing paper files. But it, too has costs,” one expert noted. Among the youth of today, who are creating more content and using digital services than their parents and grandparents, there may be a moment of reckoning coming when, for the first time, they will need to reduce their digital consumption.

In the roundtables, experts discussed the costs for holding on to overages of data, or of rendering images or email without need. While information about the cost of rendering a high-resolution image is well-understood amongst environmental energy experts, this is not yet appear to be an understanding that has taken root in the mainstream consciousness. The overarching message coming from the roundtables is that switching to digital data and digitalized services is not a “get out of jail free” card that allows us to simply increase consumption because the service is in digital form, which many assume to mean that there is not an environmental cost. One round table expert framed this issue succinctly: “Before I send an email, I think: How much will it cost the environment for me to email a thank you?” The answer, is that over time, that kind of an email, done over and over again over the course of a lifetime, can cost quite a bit of carbon.

The carbon literacy project estimates that the carbon cost of a single email is approximately 0.03 for a piece of spam, to 26g from a longer email sent to about 100 people. (<https://carbonliteracy.com/the-carbon-cost-of-an-email/>). This is the kind of energy cost thinking regarding consumption that roundtable experts were discussing, and for those new to these ideas, it is a jarring jolt of climate reality. Nothing, apparently, is free.

Circularity

“Circularity” is an economic term that participants in each roundtable mentioned. The term broadly refers to the economic analysis of a system that seeks to reduce waste at every stage of items’ lifecycles, ranging from electronic waste to other types of waste, such as clothing waste. A fulsome economic analysis that looks at the true costs of products across a full lifecycle - for example, what are the environmental costs of cheaply manufactured clothing? What are the human costs of too much e-waste product? What are the invisible costs, and how that is different based on gender? Are there costs to people with disability who have reduced access to goods and services because they are paying higher costs for a crisis they have not created?

A circular analysis can potentially allow us to shift the way we use energy and materials by extending the “use” phase of existing resources for as long as possible. Resources in this context can be highly variable, and can include everything from a used car to stored data. When

resources are no longer useful, they are recycled, upcycled, or otherwise recovered and used to create new products and materials. The goal of a circular economy is to create transparency around actual costs, eliminate waste, and to create a system in which resources are used efficiently and effectively, leading to long-term economic and environmental benefits.

In its October 2022 Policy Brief, [Sywyn Calizo Jr., Charting new pathways for APEC: A sustainable future inspired by the bio-circular -green (BCG) economy, APEC Policy Support Unit, Policy Brief No. 50, October 2022.] the Asia Pacific Economic Cooperative described a Bio-Circular-Green (BCG) Economy as one that integrates three policy approaches: (1) the bio-economy; (2) the circular economy; and (3) the green economy. It is a good example of how the term circular economy is being used today.

Conclusion

The shift to see the challenges we face in digitalization and the environmental - energy crisis as interwoven is useful. However, the experts in each of the roundtables questioned the framing of the “twin transition.” The environmental experts in the roundtables noted that the framing of just two aspects of our current crisis left out a lot, and didn’t include the social, human and generational aspects of the crisis.

Experts also noted that the rhetorical term “twin transition” is clever, but obscures what they characterize as “true costs” of the environmental crisis and digitalization when measured fully across product lifecycles. This was noted repeatedly in regards to digitalization. While digitalization has notable benefits, which are not in question, there has not been enough work on measurement to see how we could improve consumption management, education, and practices to mitigate the e-waste, energy, and data risk aspects of digitalization.

Experts noted that hedonic adaptation in both the data and energy spheres has led to relatively unchecked data hoarding. If one hard drive fills up, we just purchase another. If our mobile phones are functional, but older, the pressure to upgrade can become intense over time. Over a lifetime of electronic use and digital work, it is possible to accrue stunning amounts of data in the form of documents, articles, books, photos, videos, music, and more. All of this has a cost in e-waste that we create, in energy utilized, and in some cases, overconsumption of data at scale can lead to systemic data privacy problems. There are multiple solutions for getting frugal with data collection, storage, and use, and getting smarter about product lifecycle and e-waste.

The role of communities, including indigenous communities, played an important role in the roundtables regarding solutions that worked, particularly when experts from Africa and Latin America discussed the effectiveness of local governance and community-based, bottom-up efforts that had achieved measurable levels of effectiveness in different realms. In looking across all of the inputs, there was a sense that communities have a lot of solutions. Communities are not just a place, they are active societies that are resilient and can craft relevant solutions.

And a final word. The regional roundtables displayed distinct differences in experiences of how digitalization and environmental problems were playing out in their region. This was a salient feature of the roundtables. These differences will need to be considered very carefully; well-meaning regulators who are trying to solve problems outside of their communities or jurisdictions will at the very least need an excellent basis in measurement throughout energy - environment - and digital lifecycles to begin to understand where their work is best placed. And attention to community-based approaches is something most of the experts viewed as important. It is important to heed this call and experiment with local approaches in earnest.

A Selection of Essays from OECD Youthwise members

¿Está lista América Latina para la transición gemela?: Una reflexión sobre la brecha digital

Rebeca Quesada, Espana

Soy latinoamericana. Nací, crecí y he pasado mi vida en Costa Rica. Allí está mi corazón. Sin embargo, en temas como desarrollo sostenible, infraestructura, educación, empleo o transporte, es fácil sentir que mi región está rezagada. La transformación digital no es la excepción.

América Latina y el Caribe es una región altamente biodiversa. De acuerdo con el Programa de las Naciones Unidas para el Medio Ambiente, la misma ostenta alrededor del 60% de la vida terrestre global y gran variedad de especies marinas y de agua dulce (2016, p. iv). Esto coloca a Latinoamérica en posición para tomar liderazgo en la lucha contra la crisis climática.

Por otra parte, debido a circunstancias demográficas, sociales y malas prácticas en el uso de recursos naturales, el Grupo Intergubernamental de Expertos sobre el Cambio Climático ha señalado a América Central y del Sur como zonas muy vulnerables ante el cambio climático (2022, p. 1). Además, su economía es altamente dependiente de actividades como agricultura, ganadería, pesca y turismo, actividades que se ven muy afectadas por condiciones climatológicas desfavorables.

La transición gemela, considerada como la combinación de la transformación digital y la transformación ecológica, busca fortalecer y acelerar los esfuerzos contra el cambio climático, a través de tecnologías digitales como el Big Data y el Internet de las Cosas. Asimismo, sirve como un sistema de contrapesos, donde la visión verde limita el crecimiento desmesurado de la digitalización y de sus residuos. En América Latina, la exitosa implementación de la transición gemela supondría una oportunidad para llevar a la región al máximo de su potencial, no solo en términos medioambientales, sino también en lo productivo y socioeconómico.

Sin embargo, hoy existen retos en América Latina que entorpecen la transición digital. Según el Banco Mundial, menos del 50% de la población de la región tiene conectividad de banda ancha fija y solo el 9,9% de los hogares cuentan con fibra de alta calidad (Drees-Gross y Zhang, 2021). Por ello, es necesaria la inversión en infraestructura digital, acceso universal a internet, estabilidad de los sistemas de energía eléctrica y en protección de datos.

Los frecuentes apagones eléctricos en Puerto Rico, el servicio de internet deficiente en Argentina y el reciente ciberataque a múltiples instituciones estatales en Costa Rica, ejemplifican el bajo nivel de madurez digital de la región. Hoy, la inseguridad ciudadana, las finanzas públicas, el costo de vida y la corrupción continúan siendo el centro de discusión en varios de estos países, dejando la digitalización en un segundo plano. En Costa Rica, específicamente, el envejecimiento de la población y de los dirigentes políticos también juega un papel en la desestimación de lo digital y sus beneficios.

En otras latitudes, la transición gemela toma cada vez más fuerza. Es por esto que debe fomentarse la cooperación internacional, para apoyar a los países latinoamericanos en su transformación hacia sociedades sostenibles.

Debe cambiarse la noción de que lo digital es postergable, por una que lo priorice como herramienta para convertirnos en una sociedad más inteligente, eficiente y sostenible.

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Is Latin America Ready for the Twin Transition: A Reflection on the Digital Divide?

Rebeca Quesada, Spain

I am Latin American. I was born, grew up and have spent my life in Costa Rica. That is where my heart is. However, on issues such as sustainable development, infrastructure, education, employment or transportation, it is easy to feel that my region is lagging behind. Digital transformation is no exception.

Latin America and the Caribbean is a highly biodiverse region. According to the United Nations Environment Programme, it boasts around 60% of global terrestrial life and a great variety of marine and freshwater species (2016, p. iv). This places Latin America in a position to take leadership in the fight against the climate crisis.

On the other hand, due to demographic and social circumstances and poor practices in the use of natural resources, the Intergovernmental Panel on Climate Change has identified Central and South America as areas highly vulnerable to climate change (2022, p. 1). In addition, their economy is highly dependent on activities such as agriculture, livestock, fishing and tourism, activities that are greatly affected by unfavorable weather conditions.

The twin transition, considered as the combination of digital transformation and ecological transformation, seeks to strengthen and accelerate efforts against climate change, through digital technologies such as Big Data and the Internet of Things. It also serves as a system of counterweights, where the green vision limits the excessive growth of digitalization and its waste. In Latin America, the successful implementation of the twin transition would represent an opportunity to take the region to its full potential, not only in environmental terms, but also in productive and socioeconomic terms.

However, there are challenges in Latin America today that hinder the digital transition. According to the World Bank, less than 50% of the region's population has fixed broadband connectivity and only 9.9% of households have high-quality fiber (Drees-Gross and Zhang, 2021). Therefore, investment in digital infrastructure, universal internet access, stability of electric power systems and data protection is necessary.

The frequent power outages in Puerto Rico, the poor internet service in Argentina and the recent cyber-attack on multiple state institutions in Costa Rica exemplify the low level of digital maturity in the region. Today, citizen insecurity, public finances, cost of living and corruption continue to be the focus of discussion in several of these countries, leaving digitalization in the background. In Costa Rica, specifically, the aging of the population and political leaders also plays a role in the dismissal of digital and its benefits.

In other latitudes, the twin transition is gaining momentum. This is why international cooperation should be encouraged to support Latin American countries in their transformation towards sustainable societies.

The notion that digital is postponable must be replaced by one that prioritizes it as a tool to become a smarter, more efficient and sustainable society.

『私たちは当たり前をどのように拡張できるのか』

この社会は、狩猟社会、農耕社会、工業社会、情報社会と発展してきた。

そして私たちは現在、VRやNFT, 仮想通貨やメタバースなど、社会の営みや生身でしか感じられなかった感覚までもが情報化され、バーチャル空間で扱える社会に突入している。

それはまるでインターネット上に、住んでいる場所や肩書に関係ない第二のフィールドができたような感覚だ。これが "Twin transition" の真の意味だと私は思う。本来、この言葉は digital transition と green transition を表す。しかし、“Twin transition” には、digital transition と green transition の2つの変革以上の意味も含まれているのではないか。

私たちは今まで、学校で先生が言っていた「正解」しか知らなかった。自分の周りの5人の平均が社会の「普通」だと思っていた。しかし、オンラインの普及を通じて、今まで関わることのなかった大人や日本中・世界中の人たちと繋がれるようになった。

学校では受け入れられなかった、私のやりたいことや進路を認めてくれる人たちがいる。同じ目標に向かって頑張り、障壁に立ち向かう仲間もできた。オンラインの世界がなかったら本当の自分に目を瞑り、周囲の求めている「私」を演じていただろう。そう、オンラインの世界はセーフティネットにもなり得るのだ。

今までの社会は、生まれや肩書、資源が豊富な国に住んでいるか、お金をたくさん持っているかが、私たちの生活の豊かさを決めていた。しかし、digital transitionによって既存の評価軸や社会構造では表せない価値や見捨てられていたものも認められる可能性が出てきた。例えば、自然資本・環境負荷の評価と市場への導入、規格外品の販路開拓や剰余品の削減など、green transitionの一助にもなると考える。

”Twin transition” により暗黙の「当たり前」の定義を超えて、人やモノに衡平な機会を作れないか。既存の社会構造では過小評価されていたものを見捨てずに評価できる仕組みを築きたい。

'How Can We Extend the Commonplace?'

Sakura Takahashi, Japan

Our society has developed from a hunting society, to an agricultural society, to an industrial society, to an information society.

And now we are entering a society in which social activities and even sensations that could only be felt in the flesh are now informationized and can be handled in virtual space, such as VR, NFT, virtual currency, and the metaverse.

It is as if a second field has been created on the Internet, where one's place of residence and title are no longer relevant. I believe this is the true meaning of "twin transition. Originally, this term was used to describe digital transition and green transition. However, I think "Twin Transition" includes more than just the two transformations of digital transition and green transition.

Until now, we have only known the "right answer" from our teachers at school. We thought that the average of five people around us was the "normal" of society. However, through the spread of online, we are now able to connect with adults and people from all over Japan and the world with whom we had never been involved before.

There are people who recognize what I want to do and my career path, which was not accepted at school. I have made friends who work hard toward the same goals and face barriers. Without the online world, I would have been blind to my true self and would have played the role of "me" that people around me wanted me to be. Yes, the online world can be a safety net.

In the past, our society's wealth was determined by our birth, our title, whether we lived in a resource-rich country, or whether we had lots of money. However, with the digital transition, there is now a possibility that values that cannot be expressed by existing evaluation systems or social structures, or those that have been abandoned, will be recognized. For example, the evaluation of natural capital and environmental impact and their introduction into the market, the development of sales channels for substandard products, and the reduction of surplus products could also contribute to the green transition.

"Can we create equitable opportunities for people and goods beyond the implicit definition of "natural" by "twin transition? We would like to build a system that allows us to value things that have been undervalued in the existing social structure without abandoning them.

Disability and the European green transition

Arthur Thirion, France & Ireland

In Europe, about 1 in 4 people have a form of disability (Eurostat, 2022). People with severe disabilities generally experience a combination of mobility and cognition impacts, making independent living and most forms of self-care impossible. This means they require assistance in specialist centres and near-constant support, precluding them from employment.

Two of my family members who are based in Western Europe made this real for me. My brother has a moderate-to-severe intellectual disability, limited movement on his right side (cerebral palsy), epilepsy (near-daily severe seizures), and goes to a specialist centre during the day. My uncle has a moderate-to-severe intellectual disability and is restricted to a wheelchair (injury and cerebral palsy); he has lived in a specialist centre since his teens.

The disabled - especially the severely disabled - are often invisible when it comes to the green transition, though they are among the most at risk of climate change-induced extreme events. For example, in an extreme event, they will be more dependent on outside intervention for aid due to restricted mobility and reduced physical ability. Their overrepresentation among the poorest in society, coupled with restrictions to the jobs they can undertake, if any, makes them less able to bear the costs and adapt to changing situations.

Not only are they at risk from these events if policies do not consider them, but their position in society and ability to interact with it could also be severely eroded. Currently, the heavily disabled depend on multiple complex systems, including high levels of health/social care, personal carers and specific technological systems (e.g motorised wheelchairs). These are possible in caring societies with abundant resources/energy, but without these, they could quickly return to being homebound and dependent on family care.

Mobility is often one of the first issues discussed regarding green transitions, with many proposed solutions to achieve green mobility at differing scales. But when we consider mobility, we must consider those with the least ability, as no matter how much we adapt the public transport system and make cities accessible, the severely disabled may still have different requirements. For example, people with severe disabilities may require the use of a car and may not be able to use public transportation at all. We should consider these needs in our green transition plans, for example, developing lightweight, spacious, slow, low-consumption vehicles (fuel or electric) instead of high-performance sports EVs.

The severely disabled have always consumed more resources per capita in the healthcare sector. This will not change due to the multitude and uniqueness of their issues. In my brother's case, he had to travel from Ireland to France over multiple weeks for several specialist operations that can only be carried out in a one hospital. As society transitions towards a low-carbon future and drastic cuts become essential, these "high emitters" could be considered targets for significant cuts. The true measure of any society is found in how it treats its most vulnerable, especially during a crisis. This means accepting that certain members of society may, by necessity, have to live higher carbon lives than the rest of us.

Not only do people with severe disabilities deserve a place in the post-transition society, but they are historically overrepresented among society's poor, consuming less and are more likely to experience energy poverty. Not only will they need more aid to transition, but, then, but they are all the more deserving because they have contributed less to climate change while suffering more.

References

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