V20

SOLIDARITY

Editorial Board

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Introduction

by Dr. H. Olivera De Castro and O. Parrish
Task Force Co-Leads

THE UTOPIAS - Mario Quintana, Brazilian poet

"If things are unattainable... well!
That's no reason not to want them...
How sad the paths, if it were not for
The distant presence of the stars!"

The global community of scientists, countries, IOs, and NGOs to fight the COVID-19 pandemic has demonstrated how solidarity across different societies, cultures, and communities helps overcome collective adversity. Solidarity is a key factor to enable societies in overcoming challenges while simultaneously diminishing systemic issues that exacerbate the global north-south divide.

Solidarity means mutual support, empathy, and collective action to solve challenges or adversities. Solidarity embodies the benefits of human-centered policies. By using it as a lens, we aim to contribute to solidarity awareness in and across G20 states, and recommend solutions to common issues for People, Planet, Prosperity and Public Health. It is not by chance that these four topics have been chosen as priority areas of the Italian G20 Presidency in 2021.

Global problems require global solutions. Joining forces can allow humankind to advance our collective knowledge and create both genuine and feasible public policies across all levels, from local to international. Solidarity shows us the paths we can take to achieve this.

We present three chapters that address the importance of solidarity in our world, corresponding to the 2021 G20 priority areas we present:

- **Chapter 1: The Value of Care in a Pandemic and Post-Pandemic World by Lorenza Pieri and Lina Daouk-Öyry;**
- **Chapter 2: Reimagining Policy as a Driver of Cultural and Institutional Transformation by Fedor Ovchinnikov and colleagues;**
- **Chapter 3: Digital Solidarity Principles (DSP) by Brett Macfarlane.**

Each chapter presents clear recommendations to help G20 Heads of State implement human-centric policy that harnesses the collective power of shared values.

The global pandemic has underscored the importance and Value of Care in a Pandemic and Post-Pandemic World. The contributions of care workers across interpersonal sectors such as health care, elderly care, childcare, and environmental care are incredibly significant, yet currently goes unrecognized by most economic and policy-making models.

By recognizing the socio-economic contributions of such work, distributing it equally across genders, and minimizing unpaid care work, the G20 has an important opportunity to recognize and redistribute responsibility. By doing this, we can therefore reduce inequalities including women's empowerment and gender disparities.

Reimagining Policy as a Driver of Cultural and Institutional Transformation examines how cultural values can facilitate the success of policies, which in turn can help positively transform societies. Integrate and harness cultural values in key decision-making discussions is crucial in engaging diverse actors when designing new public policies and institutions.

Many systemic issues will require an urgent reorganization of the role of politics and policy in shaping the collective future of humanity. This will thus require reimagining policies, by using cultural evidence to enable cultural, social, and institutional transformation.

A global, collective, and sustained prosperity can and will only be achieved by minimizing these technological disparities and improving access to digitalization. This will also provide more equal opportunities to those currently disadvantaged by the digital divide. Principles of Digital Solidarity can facilitate multilateral dialogue on emerging technologies, thus maximizing the positive public contribution of digitization.

Introduction

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Task Force Co-Leads

Technological innovation has given abundant access to new opportunities and has furthered humanity's global interconnectedness. However, many in the global south have been left behind due to various socio-economic inequalities and these gaps are growing. G20 states already have experience in transcending national differences, bridging the digital divide, and improving access to opportunity in the global south. This chapter proposes actions that may help further globalization efforts and initiatives that improve digital access through international solidarity.

Going forward, critical, collective global issues will not discriminate. Rich or poor, big or small, young or old, we will all be affected. Solidarity will no longer be a value to strive for, but a necessity.

1 THE VALUE OF CARE IN A PANDEMIC AND POST-PANDEMIC WORLD

Lorenza Pieri,
Independent Writer and Journalist, USA, lorenzapieri@yahoo.com

Lina Daouk-Öyry,
Associate Professor of Work and Organizational Psychology, American University of Beirut, Lebanon, linadaouk@gmail.com

with contribution of **Giorgia Serughetti,**
PhD in Philosophy at University of Milan, Bicocca, Italy, Essayist and Journalist,
giorgia.serughetti@gmail.com

The global pandemic has shown the world the value of interpersonal care work across sectors, including: health care, elder care, childcare, and environment care. But care jobs are often not considered economically valuable. By recognizing the true value of care work, distributing it equally across genders and minimizing unpaid care work, we can bring concrete benefits for a better global society. The G20 leaders have the opportunity and the responsibility to shift away from profit maximizing paradigms to more sustainable, caring, and socially just policies that can ensure continuous, sustainable progress of our civilization.ire planet, including child-friendly communities.

Global challenge

As the G20 leaders tackle the health and economic crises resulting from the COVID19- pandemic, a just, inclusive, and resilient recovery must be addressed. The pandemic showed that many health systems were not able to provide care for all who needed it. This forced many to rely on private care or, for the less fortunate, no care at all. It also highlighted across the health and other industries the amount of underpaid or unpaid care work that is required to meet the needs of the world's increasing population. These challenges pose significant hurdles for the G20 when building an inclusive global society supported by "strong, responsive, inclusive, and sustainable health systems" (EGPRN 2020).
While care work may not have been a priority in the past, it has become evident that a global shift in focus towards the care economy is necessary to fully recover from the impacts of COVID19-, and to ensure we are more suitably prepared for any future pandemics.

The COVID19- pandemic exposed the inadequacies of all systems of care. Inequity in access to care was prominent in high, medium, and low-income economies. Weak social protection systems have left entire disciplines of workers unprotected, including: women, youth, artists, and contract workers, among others. Elderly communities have become hotspots of infections and deaths. Even care homes, one of the few alternative care spaces aside from hospitalization, have become places of contagion. The post pandemic experience has made the need to re-evaluate and re-conceive these care models evident.

Several studies compare health system responses across high-, middle-, and low-income countries. These studies exposed the stark disparities in hospitalization, death rates, and experiences across a broad range of vulnerable populations, including those with lower incomes and minority groups (Hughes et al 2021; Shadmi et al. 2020). For example, evidence from higher income countries, such as the US, point to a disproportionate impact of COVID19- on different American communities, compared to countries with universal health coverage (Wadhera et al. 2020). Recent commentary about the COVID19- response in Iran epitomized the hurdles faced by lower income countries when equipping health workers with protective gear, establishing the necessary testing facilities, and providing other advanced medical services (Behzadifar et al 2020). Achieving greater health equity that improves access to care for all requires policies that promote universal and affordable health care coverage.

Care work exists in a variety of economies and in many cases, communities depend on unpaid care work. However, it is often women who bear the burden of care in most, if not all, societies,

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leaving them disproportionately affected by situations such as the COVID19- pandemic. There is a strong interdependence between the formal and the care economy (both paid and unpaid). The pandemic made this evident.

Additionally, the shift during the pandemic to working from home has also exposed how women were disproportionately affected and disadvantaged. Oxfam estimated that in 2020, unpaid care-related work around the world added up to 12.5 billion hours per day, equating to 11 trillion dollars a year (Coffey et al 2020). Most of the responsibility for such work is carried by women, who can take up more than three quarters of work responsibilities at home. This leaves more than 600 million women unable to find a paid job because they must take care of children or the elderly. The need for care work is likely to increase with the looming possibility of more global pandemics, the aging population in the Occidental world, and global demographic growth continuing the need for childcare. The International Labour Organization (ILO) estimated that by 2.3 ,2030 billion people will require care while only 380 million paid care jobs currently exist (Addati et al 2018). The vast disparity between the number of people needing care and the number of those paid to provide care related work does not reflect the gravity of this global challenge that requires our immediate attention.

G20 policies that put the concept of care at the center of the social and economic reorganization across all levels, could improve the positive outcomes as we rebuild our societies as "healing" communities. In 2019, the G20 Health Ministers' Declaration committed to "scaling up innovative approaches to move towards the achievement of UHC through resilient, sustainable, person and community centered, gender-sensitive health systems" (EGPRN 2020). Achieving this relies on investing in the care economy and centering post-pandemic recovery plans around care policies. This will require immediate attention given the potential long term economic and social benefit of such policies, such as: democratizing care activities; providing access to treatment and healthcare for all; providing public care for children and elderly; and supporting solidarity activities at the center of communities.

Global solution

The perceived value of care work needs to be addressed as a starting point. First, standard measures of working efficiency cannot be used to assess the efficiency of care work. Less resources available in care work simply does not mean more efficient outcomes. Other attitudes about child, elderly, and other household care should also be reconsidered. Advocating for the share of care is essential for breaking social conceptions around care responsibilities as well as the economic value of care. For example, countries could promote the importance of shared childcare duties between parents, especially in households where mothers continue to work either online or outside the home. Once care workers are recognized as essential workers, their rights to fair compensation, safety at work and social protection will become the anchor of governmental decision making around investment in the formal and informal care sectors.

Increasing the global economic focus on the care economy

The concept of care has often been associated with unproductive activities, but—as this pandemic highlighted—we are all interdependent and what is considered work in the formal economy today cannot be sustained without the heavy reliance on the, often unpaid, work of caregivers, most of the time women. Women worldwide are primary caregivers for children and the elderly, a key role that ensures the health of families and communities and that builds every nation's labor force. However, much of women's work driving the care economy is invisible in official statistics, but all over the world numbers say that (even if in different proportion) the time women invest in direct care and household services is much higher than men's (Population Reference Bureau 2020).
Care work is, simply, vital to every society. The

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G20 must focus on all settings, both formal and informal, and re-imagine them. This may be done by pushing care work from the periphery of national and global interest to the center. Now is the time to turn this challenge into an opportunity by recognizing, formalizing, and investing in care work.

Prioritizing investment in robust health and social protection systems

To recognize the value of care in a post-pandemic world, investment in robust health and social protection systems is both imperative and urgent. This includes devising fiscal policies to boost the expansion of care services for children and older persons, which require highly developed skills to be performed efficiently. In fact, evidence from the UK Women Budget Group showed that investing far more public money in the care sector would potentially create more jobs (1.5 million) than an equivalent investment in the construction sector (750 thousand). Evidence from Scandinavian models of care also confirm this. With robust health and social protection systems, we become more agile and efficient at dealing with persistent as well as emergent crises that continue to test our resilience as a civilization.

Transforming labor markets to enable reconciliation of paid employment and unpaid care

A transformation of global, national, and local labor markets is also critical to create a fairer distribution of unpaid care and domestic work. Multiple studies and reports have found that the persistent gender inequalities in the labor market are not economically sound (Woetzel 2015; OECD 2017; ILO and UN Women 2020). Reconciling these inequalities may simultaneously strengthen economies and provide future proof that our societies are in growing need for care, given the increasing risk of pandemics, aging populations, climate change, and many other emergent and persistent issues.

Values-centric policy solutions for care work relate to frameworks that transcend the concept of solidarity. Such solutions impact economic growth, create decent work, break social injustice, strengthen the economic contribution of women, and foster better collaboration. We can call all these actions a policy of care, where care represents everything we do, both individually and collectively, to allow communities to persist and thrive in a complex network of relationships with the world around them. To give a concrete idea of good practice in this sense, the Argentinian government provides a great example of such a policy of care in action, through the Decree 2021/475 (Argentina 2021). This decree seeks to remedy some of the gender inequity resulting from unpaid or informally paid care work, by providing pension contributions commensurate with the time people have spent raising and caring for children.

By strengthening economies of care, and providing equal access to necessary public resources, the fear of the fragility and needs of others will disappear. This will contribute to quelling anxieties, increasing mutual trust, increasing individual and collective wellbeing, and mitigate some uncertainties.

Policy recommendations

The pandemic, despite its dire consequences, has opened space for the debate on new global agendas that has the potential to create positive outcomes if navigated with focus on care, equality, and inclusion. We call on the G20 leaders to:

1. **Promote policies which redistribute the responsibility of care across multiple sectors,** which aligns with the G20's priorities to encourage solidarity and symbiotic communities through:

    a. Devising national policies and legislation that codify how care-work is defined and recognized both in the public and private lives of citizens.
    b. Partnering with employers in the private, public, and nonprofit sectors, who can play a major role in developing concrete policies focused on care work.
    c. Raising awareness by activists'

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movements around care-work as important drivers in changing policies.
d. Promoting volunteering and community-based sharing to build resilient, socially just, and fair societies through national programs.

2. Implement public investment and tax actions with direct impact on the care economy. In a pragmatic way governments should focus on:

a. Strengthening investment in care sectors, through public works programs, preserving employment involved in care responsibilities including provisions for women workers.
b. Supporting targeted sectors affected by pandemics including microenterprises, self-employed women, and sectors where women are overrepresented like health care centers, clinics, and nurseries.
c. Adopting fiscal and tax policies with a beneficial impact on the care economy (i.e., pensions to housekeepers like in Argentina, fiscal deduction for families with children or elders needing care).

3. Investigate new models to measure the impact of care work. Investing in care work can provide better care services and create jobs. G20 leaders could explore new economy-of-care perspectives centered on peoples' needs and not on those of the financial markets by reconsidering new nonstandard measures of economic efficiency. This requires mobilizing economists, policy-makers, civil society members to rethink how to enrich standard economic models.

4. Activate policies that promote the equal distribution of care work . This point is critical to rectify social injustices to which women have been systemically subjected by:

a. Implementing work/family care policies like extension of parental leave for fathers.
b. Implementing income protection for caretakers/parents who faced a reduction of working time or unemployment to take care of the family during COVID19- time.
c. Adopting measures to address the income protection of women-headed households.

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Fedor Ovchinnikov,
Evolutionary Futures Lab, USA,
f.ovchinnikov@evolutionaryfutures.com

Dr. Marco Tavanti,
University of San Francisco, USA,
mtavanti@usfca.edu

Pablo Villoch,
Glocalminds, Chile,
pablo@glocalminds.com

Tatiana Vekovishcheva,
Flourishing Enterprise Innovation Team, USA,
tatiana@flourishingbusiness.org

Najla Alariefy,
Big Data Analyst & Policy Consultant, Saudi Arabia, najlaalariefy@gmail.com

Lina Constantinovichi,
Innovation 4.4, USA,
lina@innovation44.com

Manuel Manga,
Leadership Development Consultant, USA,
manuelobserver@gmail.com

To adequately address the increasingly complex global challenges, from climate change to inequality, we recommend allocating resources to capacity building for policy-makers at all levels through targeted values-based programs about working with complexity and through grassroots-level experimentation that involves diverse actors in designing new values-based institutions and cultural practices.

Global challenge

The G20 Italian Presidency has acknowledged that the pandemic "has added its burden onto other systemic problems, from climate change to inequality, which are hampering our ability to fully prosper and express our potential." Consequently, the 2021 G20 Italian Presidency has prioritized "looking beyond the crisis, towards ensuring a rapid recovery that addresses people's needs" and "paving the way to rebuilding differently in the aftermath of the crisis" (Italian G20 Presidency 2021). Achieving these ambitious yet essential goals cannot be done through quick fixes and technical solutions alone. Therefore, there is an urgent need to closely examine and reorganize our fundamental beliefs about our societies and the role of policy in creating our collective future.

Conventional twentieth century 'evidence-based policy-making' relies on rational and managerial approaches. This can lead to "an extrapolation tendency, a fluctuating 'crisis–success' policy response process, and an intensifying targeting/auditing trend" which produces unintended negative effects (Geyer 2012).
Risks associated with continuing business as usual in policy-making are especially concerning in the light of the recent global pandemic. The COVID-19 response by governments has been virology-based and has not addressed toxicology considerations (Kostoff et al 2020). Integrating virology and toxicology is critical for preventing future health-related shocks and necessitates action outside of the customary domain of public health.

Some examples include: regulatory changes in production and manufacturing practices to eliminate harmful toxins; waste management practices that minimize leaching of toxins from landfills into water tables, agricultural lands, and rivers; and investment in innovations that can replace the use of toxins in industrial and consumer applications. "Emerging findings suggest that exposure to environmental pollutants such as airborne particulate matter, industrial chemicals, and heavy metals may alter the immune system, increasing human susceptibility to infection" (Alper and Sawyer 2019).

Building up resilience before the next pandemic event is therefore correlated to investment in improving immunity by reducing toxicity. The failure of governments to include such important considerations in designing long-term COVID-19 response policies increases the risk of

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devastating societal and financial outcomes of future pandemics. This is a barrier to achieving one of the stated priorities for the G20 Presidency Agenda: "building up resilience to future health-related shocks" (Italian G20 Presidency 2021).

Weaknesses demonstrated in this example are present in policy-making across levels, issues, and geographic locations as and they can become even more damaging when key stakeholders do not have a "consensus on goals, as well as a clear understanding of how these relate to the core values of society and underlying theories of human behaviour." In this case, the dominant ideology tends to filter out good policy recommendations that do not fit its meta-policy paradigm (Cohn 2004).

This makes disciplinary-based policy-making that is centralized, rational, and expert-driven, create solutions that are reactive, symptom-based, and limited by ideological blind spots. While this approach can improve policy effectiveness, it "simultaneously raises the risk of overall failure by increasing diagnosis, coordination, and compliance costs" (Zahariadis 2012).

Global solution

The inertia of our cultural narratives and institutional structures can constrain worldviews and behaviors. This sustains the exact problems we are trying to address. As Tony Fry argues "while it is impossible to redesign everything that is already designed...it is possible to disrupt the identity of a thing dramatically to transform what it means, and in doing so effectively redirect its status, value, and use" (Fry 2011). Therefore, we suggest that in addition to considering the specific institutional aspects of future-fit policy design described in this chapter, decision-makers work on transforming their personal worldviews to change the meaning of policy that shapes their decisions. We propose a few global solutions below.

Develop actionable policy recommendations by challenging policy-making beliefs and processes

We suggest taking a closer look at fundamental ontological aspects of policy-making as well as their practical implications to articulate actionable recommendations. Such recommendations can help eliminate approaches that fail to adequately address complex challenges and growing existential threats such as climate change and global pandemics. This is in alignment with the G20 call for "paving the way to rebuilding differently in the aftermath of the crisis" (Italian G20 Presidency 2021). To achieve this, we must reconsider some of our fundamental assumptions about policy. As John Ehrenfeld argues, we need to change "the belief structures about social systems from those based on disciplinary models to one that is more consistent with complexity. In healthy and flourishing systems, the smaller, faster levels permit experimentation and invention, while the larger, slower levels serve as collective memories of success" (Ehrenfeld 2019). Redefining the nature and role of policy according to this framework can catalyze the design and implementation of solutions that go beyond quick fixes and have the potential to mobilize and align key actors within the short time frame that we have.

Addressing global existential threats also requires a shared understanding of the challenges we face. While the complexity of modern society calls for experimentation across all sectors, such actors must be allowed the agency to co-generate and co-implement adaptive strategies at their respective levels. However, these actors must also be aware of our global challenges and take responsibility for their role in sustaining or transforming institutional, cultural, psychological, technological, natural, and structural conditions that keep these challenges in place.

Enable participation in policy design and creating holistic policy solutions

Enabling participatory design of local strategies is highly contextual. For such strategies to function cohesively, this would require all participating actors to develop awareness about the larger context in which their groups, organizations, and communities operate.

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Otherwise, there is a risk of ending up with fragmented solutions that will address specific challenges in certain places or domains in ways that would be unlikely to sustainably contribute to the betterment of global systems.

These strategies need to be grounded in understanding that the creative freedom at the national and local levels is limited by our collective need to secure a flourishing future for everyone on our planet. As Tony Fry states, "...radical change is essential and unavoidable and it demands a process of decision and directive action that brings the two imperatives of freedom and futuring together to form an unbreakable unity" (Fry 2011).

The public sector can learn from social entrepreneurship to find practical institutional structures that enable local experimentation while creating conditions for local solutions to fit into a collective strategy. Impact Hub (a global network previously known as "the Hub network") includes 100+ coworking spaces for social innovators around the globe. The Impact Hub came up with a very effective way to combine a shared purpose with high-context local experimentation. Instead of adopting a standard franchise approach based on centralized ownership, universal standards, and the disciplinary model of rigorous quality control, the network decided to "maintain quality standards without getting standardized" (Bachmann 2014). This included providing local founding teams with access to information and advice from across the network while empowering them to do local research and design their own business model. The condition of this autonomy, however, was that the design must be practical, grounded in reality, and aligned with the shared mission of the global Impact Hub. Over the last few years Impact Hubs have driven social innovation at multiple levels, including local and global, through active participation in policy making in partnership with governments (Amsterdam Impact 2017) and intergovernmental organizations (UNDP 2021).

Design and implement mechanisms that enable generative dialogue and reflection across levels and sectors

System-level reflection and generative multi-stakeholder dialogue are key mechanisms for designing policies that enable the agency of local actors while promoting coherence and shared goals. Just as members of the Impact Hub network designed their model through a dialogue that started with recognizing their shared challenges, policy-makers at all levels can significantly increase the relevance of their policies by initiating and facilitating dialogues across stakeholder groups and locations to allow for system-level reflection.

There are many cases of successful participatory policy-making. Chile is one country that provides notable examples of the integration of multi-stakeholder dialogue at the city, national, and international level: (1) the Regional Government of Metropolitan Region of Santiago convened a participatory process of multi-stakeholder systems to collaboratively design a regional strategy for territorial resilience (Gobierno Regional Metropolitano de Santiago 2017); (2) Chilean Ministry of Cultures, Arts and Heritage engaged grassroots community cultural organizations in the design and implementation of public policies (Ministerio de las Culturas, las Artes y el Patrimonio, Red Cultura y Departamento Ciudadanía Cultura 2019); (3) Chilean Social Development Ministry convened an online participatory process, designed using a systems approach, with indigenous women leaders and public servants from 10 economies of the Asian Pacific to discuss and propose recommendations to public policies to promote indigenous economic development with gender perspective (APEC Economic Committee 2021).

Participatory policy-making requires time to build culture and trust for effective dialogue. But it has been demonstrated to enhance long-term outcomes and to produce networks of engaged stakeholders (Baldwin 2020).
In addition to dialogic processes, system-level reflection can also be enhanced by Big Data and advanced analytics. Especially when considering macro-level factors, such data and analysis can provide valuable context for both policy decisions and stakeholder actions. The use of Big Data can

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develop through two prominent dimensions: the promotion of equitable outcomes, and the democratization of data. With proper analytics, Big Data can help policy-makers identify disadvantaged populations at population-level policies, such as reducing health-inequalities through Big Data, which allows for more comprehensive examinations of social health determinants (Zhang 2017).

Furthermore, the democratization of Big Data through open data platforms can enable stakeholders at individual, communal, or national levels in making better informed decisions. For example, the implementation of Innovation Offices in different U.S. cities, which consolidate and package aggregated data for city halls, has promoted efficient and proactive problem-solving for city halls across disciplines, such as infrastructure improvements, or staff time allocation (Nguyen 2017). The democratization of data further supports efforts made toward achieving SGDs (IEAG 2014).

Besides access, democratization of Big Data and the use of other technologies includes stakeholder participation in technology design and public control over the use of those technologies. The capacity of technology to shape human actions and interactions provides a powerful leverage which calls for stakeholder involvement in the design of the technological solutions that will be shaping creative constraints of those stakeholders. In other words, technology "should enable change, not drive it" (Higgins and Bianzino 2020). Additionally, there is danger in unilateral control over technological solutions as shown by recent cases such as farmers fighting for the right to repair John Deere tractors, by accessing proprietary software, to avoid loss of crops (Mirr 2019). As UN Secretary-General Antonio Guterres stated in the Roadmap for Digital Cooperation: "Digital technology does not exist in a vacuum - it has enormous potential for positive change but can also reinforce and magnify existing fault lines and worsen economic and other inequalities" (Guterres 2020).

All these considerations are examples of policy-making changes that facilitate the shift of how we approach policy. Policy must move away from being an instrument of top-down control that promotes compliance with existing views and ideologies, to an enabler of cultural and institutional transformation driven by stakeholders who recognize the urgency and severity of common challenges. While such a shift requires political courage and involves a great deal of uncertainty, it has the potential to escape the limiting deadlock based on the outdated design of fundamentally unsustainable social systems.

Policy recommendations

We recommend that governments take the following practical steps to enable interdisciplinary, multi-stakeholder solutions based on awareness of our common challenges, trans-contextual learning, grassroots agency, and solidarity:

1. Building the capacity of key institutional decision-makers to understand and work with complexity.
2. Redesigning institutional structures of policy-making to create opportunities and funding streams for grassroot-level experimentation.
3. Implementing transparent mechanisms for stakeholders to design policy decisions (as opposed to simply approving or choosing from solutions designed for them) based on a shared multi-contextual understanding of common challenges. More specific steps in this direction can include:
    a. Employing proven participatory processes that build coherence across stakeholder groups and inspire stakeholders to take action that complements policy grounded in system-level reflection.
    b. Training and/or engaging highly skilled process designers and facilitators to convene high-quality, generative conversations, especially for high-stakes issues or conflicts.
    c. Integrating intersectionalist methods, beyond qualitative studies, by using data to minimize inequalities when designing policies that impact populations.
    d. Appointing and creating opportunities for data stewards responsible for collecting data to work collaboratively and strategically with policy makers. This would ensure pivotal

dimensions can be captured based on qualitative reflection that includes affected stakeholders.

e. Encouraging and facilitating the development of more accessible, comprehensive open data platforms to make data analysis accessible for actors and advocates can inform their actions and identify potential discrepancies in technology adoption. This could be created by unfair or otherwise inadequate ownership structures and other forms of institutional power, and would require policy adjustments to promote inclusive, fair, and empowering use of technology.

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3 DIGITAL SOLIDARITY PRINCIPLES (DSP)

Brett Macfarlane,
Innovation Expert, UK,
brett.macfarlane@insead.edu

The complex nature and implications of software often appears to overwhelm policy makers. This often results in transactional dialogue at the expense of human-centric value creation. By developing Digital Solidarity Principles (DSP), we can establish a framework that guides multilateral dialogue on emerging technology towards the human value of solidarity and maximizes the positive public contribution of digitization.

Global challenge

Digital Solidarity Principles are based on the best practice of design principles that guide private software development and public digital services development. To date, there is no digital-specific equivalent in multilateral forums. Consequently, multilateral digitization dialogue does not always serve common interests, similarities, and sympathies that may be achieved through policy to foster solidarity within and between member states.

Solidarity as a value presumes that "benefits and obligations are justly shared between members of the society" (Jalsenjak 2020). Digital Solidarity Principles could serve as a national preference framework for countries to recognize their national priorities related to digitization.
The interconnected and digitized 21st century means formerly local issues now have global consequences (Figueres 2021). If we take a public value approach through the construct of Digital Solidarity Principles, we can enable governments to collaboratively meet high levels of public expectation by addressing the collective value of digital services, not the sum of individual services (Panagiotopoulos et al. 2019).

Software is the material of digitization. Each line of code created by writing software contributes to an inter-related ecosystem of applications and services that flows invisibly between personal, organizational, and national boundaries. Each actor in the ecosystem operates with a subset of applications and services that are created and maintained by public and private entities. Additionally, existing software continuously finds new applications while continuous innovation develops new software languages creating an ever changing and quickly evolving digital ecosystem. The scale and technical complexity of software is sometimes beyond human comprehension, and, in some cases such as artificial intelligence methods like neural networks (Adadi and Berrada 2018), those who create the software themselves cannot explain how it works.

The consequences of this complexity do have associated costs, such as, government digitization-project failures running into billions of pounds, dollars, or euros (Wikipedia 2021), and growing digital inequality across society. In both cases, the absence of what society wants from digitization is a root issue. Digitization is a global phenomenon without a framework to articulate what G20 nations aspire to achieve collectively through digitization on behalf of society. Consequently, policy discussions default to transactional topics of who owns, pays for, or accesses the technology.

This zero-sum mindset fails to accommodate the value creation opportunities and human outcomes enabled by digitization. While some private firms profit greatly from global digitization, frameworks to discuss wider societal outcomes are absent. Learning from private and domestic digitization best practices, the G20 has an opportunity to leverage "design principles" to reintroduce human centricity to multilateral digitization dialogue. Digital Solidarity Principles could provide a framework to guide digital policy towards fostering global solidarity for the benefit of all.

Global solution

Introducing Principles of Digital Unity for Solidarity

Digital Solidarity Principles could guide how we

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create, develop, and maintain unity through digitization between individuals, groups, or societies. It would establish a framework for universal human-centric digitization outcomes based on mutual awareness of common interests, similarities, and sympathies.
Just as the Sustainable Development Goals (SDG) set out an ambition of what we aspire through sustainability (UN 2018), the Digital Solidarity Principles (DSP) would aim to establish a vision on behalf of all G20 nations of what we aspire to achieve for society through digitization. Where SDGs serve as a "blueprint to achieve a better and more sustainable future for all" the DSP principles would aspire to achieve a fair and just application of software for all.

The idea of DSPs is based on the paradigm of using design principles to guide complex discussions and policy on digitization in society. What unites all software is the intent for why it is created or how it is used. Each line of code enables or disables functionality. There are infinite possibilities of what software could do and finite time and resources in which to do it. This is where the use of design principles could serve as a north star for the organization of preferred values.

The challenges and opportunities of digitization, AI (artificial intelligence) in particular, have been acknowledged by G20 Trade Ministers in the 2019 Ministerial Statement on Trade and Digital Economy. Equally the use of SDGs as goals and recognition that the benefits of digitization have not been shared widely enough with all countries and members of society, in particular the vulnerable. The DSPs elevate and expand the five "Principles for responsible stewardship of trustworthy AI" to be more comprehensive and intentional towards the value of solidarity.

Understanding the Paradigm of Digitization Principles Through Private and Public Precedents

In a private organization, design principles establish and reinforce the value the firm creates and protects for stakeholders. Design principles are how a firm establishes its values. The principles serve as a guide towards the outcomes they aspire to fulfill. They empower individual actors to have a common language and work towards open-ended outcomes over and above the specific tasks or topics they must work through on a day-to-day basis.
At their best, design principles are born from human-centric values. They allow individuals who may have different personal interests to come together over shared interests as represented by the principles. In practice for private firms, differentiation and competition is the intent of design principles. Its aim is neither solidarity nor a wider discussion of what are the desirable societal outcomes of digitization within or between nations.

Digitization is a global phenomenon. All digital services we use as citizens are an aggregation of individual services that come together through formal and informal relationships. To demonstrate how design principles can align societal aims with aggregated digital services, we have recently seen the successful application of design principles to the digitization of digital services within individual countries.
The UK (GDS), USA (USDS), Canada (CDS) and New Zealand (GDS) stand out as exemplars among others. Their use of design principles espouses what they wish to achieve and what is valued in how they do it. Including the very premise of being human centric rather than government centric. In many ways, these principles reflect both a nation's values in general and how digitization can serve those values in practice through the intent and purpose of each line of code. These national design principles set out how citizens interact with digitized government services. They guide how government digital services are developed and maintained. They perpetuate policy and governance that enables fulfilment of the principles. At the heart of design principles are the human-centric outcomes of citizens.

Shifting From National to Multilateral

Building on the precedents of public value creation at a national level and ground-up approach of e-government, we propose DSPs as a mission-oriented approach to multi-lateral

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digitization policy (Kattel and Muzzacato 2018). Digital Solidarity Principles would express the digitization missions and outcomes to which citizens of G20 nations aspire. They are a pathway to voice society's human-centric needs to guide digitization policy development.

The V20 is at the forefront of a movement to inject digital design principles into multilateral discussions. Ten nations, including four G20 nations, are signatories to The Digital Nations Charter (Digital Nations Charter 2021). The Charter's goal is:

> **"The DN will provide a focused forum to share best practice, identify how to improve the Participants' digital services, collaborate on common projects and to support and champion our growing digital economies."**

There is an opportunity to build on cooperation between leading digital nations and raise the floor of human-centric outcomes for all G20 nations. However, this requires an approach that establishes the digitization expectations of human needs.

A key multilateral precedent is UNICEF's Designing for Children's Rights (D4CR). D4CR builds on the United Nations' Rights of the Child (UNCRC) convention to establish principles on behalf of children who are a vulnerable segment representing %26 of the global population (Statistica 2021). Children across different demographics are a population to whom digitization, despite its perceived benefits, creates vulnerabilities that can hinder development and enable exploitation. D4CR uses design principles for children to guide policy and software development. Each principle represents a human centric outcome and is supported by a proposed digital right of the child. For example:

> Principle 1: Everyone Can Use (Right to Non-Discrimination).
> Principle 2: Give me Room to Explore and Support my Growth (Right to Development).
> Principle 3: I Have Purpose so Make my Influence Matter (Right to Participate).

Just as the D4CR has the mission, or intent, of fostering children's rights through policy and design affecting children, Digital Solidarity Principles would address all citizens concerned with or impacted by digitization. Specifically, this includes where biases or prejudices divert digitization discussions away from solidarity and greater societal outcomes. Digital Solidarity Principles would fill the void between human rights and digitization policy. They would provide policy makers, along with public, private, and civil organizations, a common framework where digitization is centered around human-based outcomes over and above technical outcomes, such as taxation and intellectual property ownership. Their goal is to make digitization fair and just, so that the benefits and obligations are shared between members of society. The Digital Principles of Solidarity would define the outcomes of how solidarity, bounded by digitization, could work in service of, rather than in conflict with, people and society.

Policy recommendations

1. Introducing Fair Process as Policy

a. Cooperation between the G20 nations may ensure fair representation of individual, collective, and social concerns (Chan Kim and Mauborgne 1998). Introducing 'Fair Process' may allow the understandings, beliefs, and experiences of all stakeholders to be shared with sympathy and reflexivity to identify aligned and discrepant values without hindering policy development.

b. Practically, this could involve a working session at the G20 summit attended by representatives from all G20 nations to establish the parameters and participants for a Digital Solidarity Principles Summit held in the following six months.

2. Co-development of Principles

a. The DSP Summit could use Design Thinking to collaboratively co-develop, define, and ratify an initial DSP framework. Design Thinking is a non-linear, iterative process that working groups use to understand users, challenge assumptions, redefine problems, and create innovative solutions to prototype and test (Design Thinking 2021).

b. The summit could be facilitated by experts in digitization and policy, with a focus on Design Thinking and psychodynamic systems. Summit delegates would include G20 representatives and social, technical, and policy experts.
c. The process would establish the first DSPs to test in select policy forums. For example:
   i. Right to privacy
   ii. Right to recourse
   iii. Right to explanation
   iv. Right to repair
   v. Right to accessibility
   vi. Right to expression
   vii. Right to accountability
   viii. Right to freedom of persecution
d. The DSP Summit would identify initial policy areas and processes such as tax, trade, and IP to pilot the DSPs.

Feedback and Prioritization Platform

An annual mechanism could allow nations to prioritize by importance and promote or demote principles as technology and preferences evolve. This could involve regular government and citizen surveys on national and global priorities. For example, an annual survey of G20 nations ranking principles in terms of priority. The feedback and prioritization platform objective are to give society a role in developing digital policy generating solidarity.

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