مؤسسة دبي للمستقبل
DUBAI FUTURE FOUNDATION

FUTURE OPPORTUNITIES REPORT

THE GLOBAL 50

SPECIAL EDITION

YOUTH AND FUTURE GENERATIONS

FOREWORD

Khalfan Belhoul
CEO
Dubai Future Foundation

Today, young people aged 15–24 years make up 16% of the world's population (about 1.2 billion people).[1] By 2030, even though the population of young people will grow to about 1.3 billion,[2] their share of the global population will gradually decrease. By 2050, there will be more people over 65 years than young people[3] because of forecasted declining fertility rates in many, not all, places around the world.[4] And by 2100, the number of young people will be around 1.2 billion,[5] and although similar to today, they will represent just 11.5% of the global population.[6]

This evolving landscape will create both opportunities and challenges, continuously shaping the way the youth and future generations will navigate and experience life. To address them, innovation is, and will continue to be, key.

As the world convenes at the United Nations (UN) Summit of the Future, this year's special edition of The Global 50 report focuses on the youth and future generations. The concepts of 'youth' and 'future generations' vary in definition, interpretation, and the extent to which they are embedded in policymaking and strategy around the world (see Background Notes). However, our intention is to inspire not only delegates gathering in New York to discuss the challenges and opportunities for the future, but also the rest of the world.

The contributions to this special edition consist of insights from 14 global and UAE-based experts who comment on relevant opportunities from the 2022, 2023 and 2024 editions of The Global 50 report. These opportunities can empower societies, offer solutions to complex and universal needs, enable individuals and communities to innovate, and aid the transformation of humanity to new realities, improved economies, better health and cleaner air.

In the UAE, we are committed to empowering the youth and preparing our country for future generations. Along with our recently announced National Youth Agenda 2031,[7] the UAE centennial Plan 2071[8] places young people aged 15–35 years[9] at the heart of visions and plans, and will reaffirm it at the UN Summit of the Future in September 2024.[10] Dubai, more specifically, also embeds the youth and future generations in the Eight Principles for governing Dubai and the Fifty-Year Charter, both established and endorsed by HH Sheikh Mohammed bin Rashid Al Maktoum within a vision of a prosperous city that embodies tolerance and coexistence, where future generations achieve their dreams and aspirations.[11]

Our call to action is to encourage policymakers, educators and community leaders to consider how the insights from experts in this special edition can help shape thinking about the future and some of the different ways that they can enable future growth, prosperity, and well-being for the youth and future generations.

FOREWORD

Gabriela Ramos
Assistant Director-General for Social and Human Sciences
UNESCO

This Special Edition of the Global 50 Report precedes a critical milestone of our times: the Summit of the Future, which will bring world leaders together to forge a new international consensus not only to shape a more promising present, but also to safeguard the future.

The current global landscape is marked by constant change and unprecedented challenges. The Intergovernmental Panel on Climate Change continues to warn us of catastrophic global warming beyond 1.5°C, threatening ecosystems, human health, and the global economy. Oxfam reports that the world's richest 1% own more than twice as much wealth as 86% of the world population, and further – in a world dominated by emerging technology, 35% of the global population still lacks access to the internet (International Telecommunication Union). These trends demand for us to think beyond the present and encourage a participatory effort towards innovation for sustained growth, inclusive and empowered societies, and the well-being of future generations. Shifting our vision from short to long-term will drive us toward better preparation, planning, intergenerational justice, and inclusive and resilient societies.

UNESCO's Management of Social Transformation & Foresight Programme (MOST) has long championed the idea that we must not merely react to change, but actively anticipate it in order to realise the inclusive futures for which we are working towards. This forward-thinking approach is crucial as we stand at a crossroads where today's decisions will profoundly influence humanity's trajectory.

The themes outlined in this report are pillars that inform our vision for the future, and each of them represent a critical area where foresight can drive transformative change. Whether we are reimagining global health systems, restoring our natural environment, or optimizing the complex systems that underpin our societies, the need for a holistic and forward-looking approach is clear.

Furthermore, the focus on Youth and Future Generations, a key thematic in the Summit's outcome document: the Pact for the Future, underscores the necessity of integrating different perspectives in our decision-making process to ensure we have the means to incorporate the needs of future generations. As they are not yet with us, we should explore innovative frameworks like the Commissions of Future Generations that governments like Wales have adopted or include young people in the debates. Indeed, young people can offer vital contributions, as those that can translate the futures needs into concrete, long term visions. Given that they are going to experience the longest impact of our current decisions, it is only appropriate to engage with them and incorporate their views. This requires an extra effort, as young people often find themselves at the margins of key processes or are not showing interest in engaging in many places around the globe. We should strive to ensure they are part of the conversations, and through them, the future generations as well.

Engaging youth is a must to make the Pact and the Declaration on Future Generations a true turning page in global governance. I congratulate the Dubai Future Foundation for this important piece of work and hope that this will be an opportunity to take forward joint actions to deliver on this important agenda.

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INTRODUCTION

Besides sharing the Dubai Future Foundation's (DFF) view of the future, the purpose of The Global 50 report is to imagine, uncover and aspire to future possibilities, ideas and opportunities that can be shared with the rest of the world. While some opportunities are within reach, others are transitional or visionary,[12] and they embody the different ways that **a better future may be realised in terms of growth, prosperity and well-being.** Linked to technological and societal readiness, the development and progress of each opportunity depends on context and alignment with the vision for the future of a country, city, community, organisation or even a person.

For this special edition of The Global 50 report, the DFF invited experts, researchers and innovators from the UAE and the rest of the world to provide commentary on opportunities relating to youth and future generations. In honour of the United Nations (UN) Summit of the Future, taking place in September 2024, our aim was to highlight the different ways that youth and future generations may experience the future. Opportunities align with the five broad areas in the draft Pact for the Future,[13] support principles within the draft Declaration on Future Generations,[14] and Global Digital Compact[15].

As recognised in the UN Pact for the Future, and despite nuances and varied definitions around the world (see Background Notes), youth are distinct from future generations. As a result, this special edition is titled accordingly and each contribution aims to answer why an opportunity is considered global and why it should matter to youth and future generations. Even though 14 opportunities are featured in this special edition, all 150 opportunities from the 2022, 2023 and 2024 Global 50 reports can be applied in one form or another for the benefit of youth and future generations.

We thank all contributors to this special edition. Their inputs provide new perspectives on the opportunities and how we may achieve positive outcomes to the what-if questions. They illustrate how efforts that collectively imagine, design and execute the future through global collaboration and cross-sectoral dialogue are key to addressing the needs of the youth and future generations.

CONTRIBUTORS

(ALPHABETICAL ORDER)

Dr Ameena Al-Sumaiti
Associate Professor, Department of Electrical Engineering, Khalifa University, **UAE**

Dr Amit Kapoor
Honorary Chairman,
Institute of Competitiveness, **India**

David Santulli
Founder & President,
United Planet, **United States**

Dr Eddy Ng
Professor & Smith Professor of Equity & Inclusion in Business, Queen's University, **Canada**

Dr Farah Al Marzooq
Assistant Professor, Department of Microbiology and Immunology, College of Medicine and Health Sciences, UAE University, **UAE**

Hoda Barakat
Founder,
Hoda Barakat Legal Consultancy, **UAE**

Dr Igor Grossmann
Professor, Department of Psychology,
University of Waterloo, **Canada**

Dr Kenneth DeWoskin
Professor Emeritus, University of Michigan Ross School of Business, **United States**

Dr Klaudijo Klaser
Department of Economics and Management,
University of Trento, **Italy**

Lambert Hogenhout
Chief Data and AI, Office of Information and Communications Technology, United Nations Secretariat, **United States**

Dr Nick Barter
Professor, Department of Business Strategy and Innovation, Griffith University, **Australia**

Ola Issa
Education Expert,
UAE

Dr Taylor L. Weiss
Assistant Professor, The Polytechnic School, Ira A. Fulton Schools of Engineering, Arizona State University,
United States

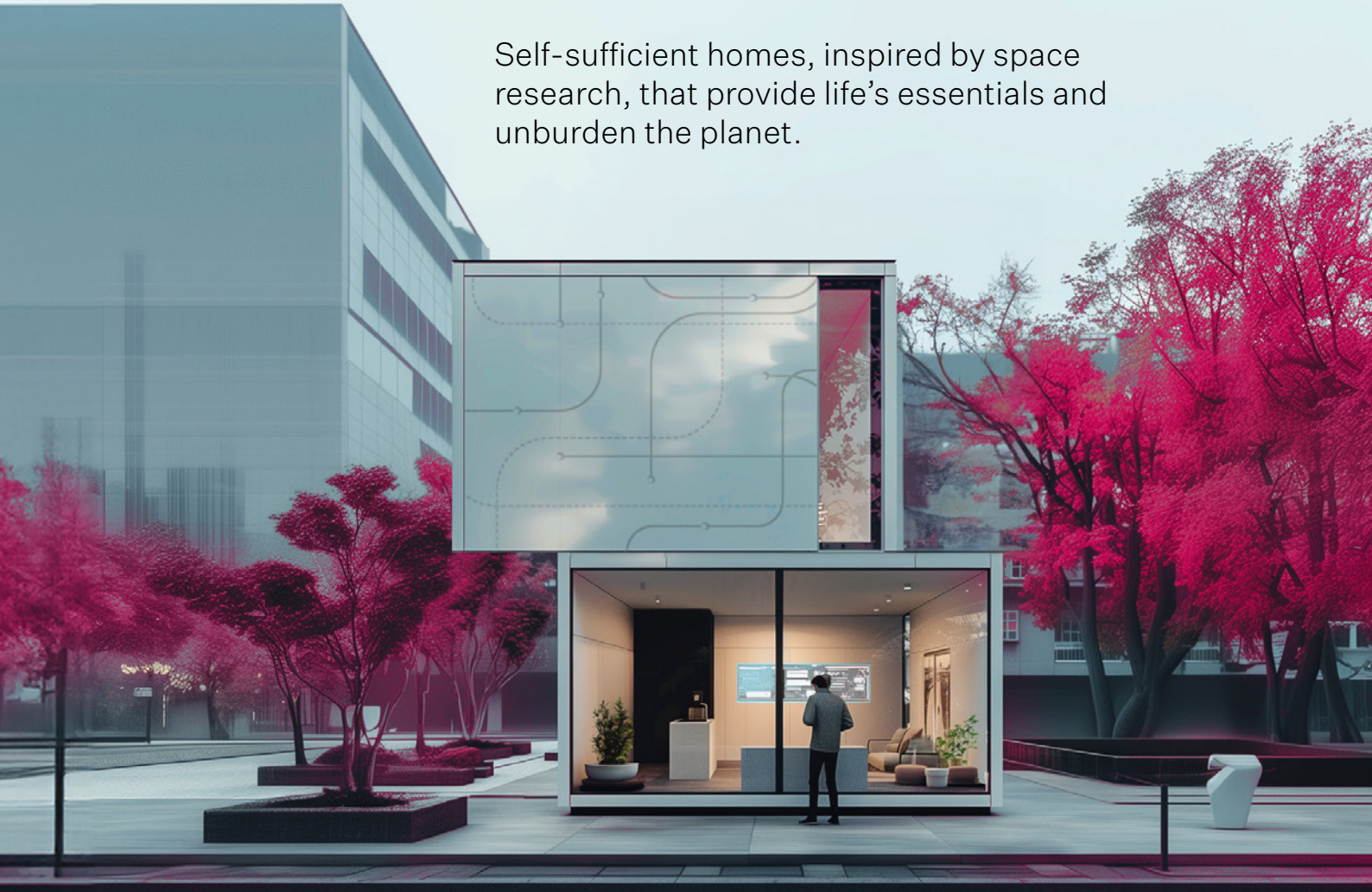
Dr Tracy Brower
Author, *The Secrets to Happiness at Work* and *Bring Work to Life*, **United States**

What if we never had to leave our homes?[A]

LIFE-IN-A-BOX

OPPORTUNITY #15 FROM THE GLOBAL 50 REPORT **2022**

Self-sufficient homes, inspired by space research, that provide life's essentials and unburden the planet.



[A] This opportunity does not discount the value of in-person interactions or experiences in nature. The scenario presented here is one of many potential futures and does not advocate for the elimination of physical experiences.

CONTRIBUTOR
DR AMEENA AL-SUMAITI
ASSOCIATE PROFESSOR, DEPARTMENT OF ELECTRICAL ENGINEERING, KHALIFA UNIVERSITY
UAE

PEOPLE SPEND ALMOST 90% OF THEIR TIME INDOORS

Our homes account for a substantial share of electricity, water, gas and waste services usage, with people spending almost 90% of their time indoors.[16] This is exacerbated by events that limit mobility or by, for example, pandemics, both of which require people to stay indoors even more. During the COVID-19 pandemic, time spent at home increased by 30%.[17] This increases the demand for utility services, and with urbanisation, population growth and climate change, people will continue to live in more and more compact environments.

Homes that can communicate, predict and translate our thoughts and feelings and intuitively adapt to our needs, environmental demands and global policies can transform our lives by reshaping themselves for ultimate comfort and efficiency. Powered by artificial intelligence (AI), smart homes promise unparalleled energy, water, gas, waste efficiency as well as luxurious comfort and robust security.

AI offers transformative benefits in future home intelligence and autonomy. Homes can achieve optimal operational efficiency, enhance living standards and occupant satisfaction, and promote health and environmental and economic sustainability. AI allows homes, their furnishings and offered services to adapt to environmental variation and occupant preferences, creating more responsive and sustainable living environments.

AI could empower homes to understand human emotions and needs while dynamically adapting to them. Homes could act like real people, building relationships with their 'home neighbours', optimising services, enhancing occupant satisfaction, improving sustainable practices and boosting operational efficiency, and, as a result, driving sustainable urban development and smarter living environments.

HOMES COULD ACT LIKE REAL PEOPLE,

building relationships with their 'home neighbours', optimising services, enhancing occupant satisfaction, improving sustainable practices and boosting operational efficiency.

ESSENTIAL ENABLERS

A comprehensive understanding of human–environment dynamics remains challenging, hindering advances in residential services through AI. The challenge is rooted in the interplay between human and physical home service systems, and the optimal resolution lies in facilitating AI technologies across sectors – transportation, health, renewable energy, water, technology, education and the environment.

At the same time as AI integrates into home design and operations, managing cybersecurity and associated vulnerabilities, biases in decision-making, and interoperability challenges across diverse systems will be important. Incorporating autonomy and trustworthiness (while balancing occupant preferences and dynamics) with sustainability will also be key. AI will need to include identifying, managing and mitigating failures in systems, networks and communications, implementing dynamic AI-based fault tree analysis to help quantify risks such as common cause failures, and offering a proactive approach to managing potential disruptions in smart home environments.

LIKELY TIMESCALE

The timescale for this opportunity depends on the rate of advancement in AI, automation and robotics and will vary between countries, cities and communities. The UAE, for example, aspires to be a global leader in AI and has already announced an AI strategy for 2031.[18]

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

As AI evolves, it is leading to new ways of managing services, allocating resources and creating adaptable homes that meet future urban challenges. AI integration enables smart and effective communication, providing an efficient and collaborative environment that adapts to new policies and fosters resilience. This helps to create connected urban areas as ecosystems, speeds up innovation, promotes shared goals and unlocks future market opportunities for sustainable growth.

What if we could measure the true value of our economies?

GDP 2.0

OPPORTUNITY #42 FROM THE GLOBAL 50 REPORT **2022**

A globally accepted measure of the full cost and true value of all economic activity, including social and environmental impacts.

CONTRIBUTOR
DR AMIT KAPOOR
HONORARY CHAIRMAN, INSTITUTE OF COMPETITIVENESS
INDIA

As we navigate the complexities of the 21st century,

OUR WORLD IS GRAPPLING WITH AN UNPRECEDENTED ARRAY OF CHALLENGES

that were scarcely imaginable by economists such as John Maynard Keynes.

As we navigate the complexities of the 21st century, our world is grappling with an unprecedented array of challenges that were scarcely imaginable by economists such as John Maynard Keynes, who further developed the modern definition of gross domestic product (GDP) during World War II. Today, we face a landscape marred by the lingering effects of a global pandemic, geopolitical conflicts, the disruptive potential of artificial intelligence (AI), a slowdown in globalisation, accelerating climate change, and the looming failure to meet the 2030 Sustainable Development Goals targets. Add to this the spectres of job losses, rising inflation and an alarming increase in inequality between 'advanced' and 'emerging and developing economies', and it becomes clear that our traditional measures of economic success are woefully inadequate in capturing the true state of our world. The limitations of GDP as a measure of national progress have become glaringly apparent.

The global shift beyond GDP is not a distant aspiration; it began decades ago with the introduction of the Human Development Index by the United Nations Development Programme in 1990,[19] and the Social Progress Index in 2013.[20] Both paved the way for more holistic national frameworks such as in Bhutan, with its Gross National Happiness Index,[21] and New Zealand, with its Wellbeing Budget,[22] demonstrating the feasibility and importance of measuring progress beyond economic indicators. The issues confronting us transcend national borders and economic indicators, making this a global opportunity.

ESSENTIAL ENABLERS

By adopting a more comprehensive approach to measuring progress, we create a shared language for global cooperation and a framework for addressing these universal issues, forming a broad ambition for the future through four key dimensions (four Ss):

Social
A coherent set of outcome goals, capturing the quality of life across society. This dimension guarantees a balance between economic growth and social progress, tackling issues such as healthcare, education and social cohesion.

Shared prosperity
Economic opportunities that are shared across society. This aspect focuses on reducing inequality and ensuring that the benefits of growth reach all segments of the population.

Solid
Economic structures that are resilient to shocks. This dimension is crucial in an era of global uncertainty, from pandemics to geopolitical tensions, to ensure that economies can withstand and recover from crises.

Sustainable
Economic activities that are carbon neutral and aligned with environmental sustainability. This aspect addresses the urgent need to combat climate change and preserve our planet for future generations.

This multifaceted approach provides a more accurate picture of a nation's overall health and progress in the face of modern challenges. For instance, India's development of the Ease of Living Index[23] and the Social Progress Index[24] for States and Districts aligns with this holistic view. These initiatives acknowledge the inherent connections between long-term economic growth, social progress, shared prosperity, economic resilience and environmental sustainability.

LIKELY TIMESCALE

While the United Nations Summit of the Future will address this issue, individual countries would also need to make it a reality within their contexts. Reluctance to adapt will hold us back as this new paradigm challenges us to rethink a nation's success and move towards a more balanced, inclusive and sustainable world. In this rapidly changing landscape, the time to redefine progress is now.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

For youth and future generations, this shift represents a commitment to leaving a better world amid daunting challenges. It means policies that prioritise not just economic growth but also social progress, shared prosperity, economic resilience and environmental sustainability. This approach also addresses critical issues that GDP often overlooks, such as unpaid domestic and care work, promoting gender equality and adapting to changing work paradigms in the AI era.

What if paid social national service was standard?

SERVICE AS A STANDARD

OPPORTUNITY #32 FROM THE GLOBAL 50 REPORT **2023**

Paid social national service is legally available for everyone, resulting in changed views of working life, community, social and environmental engagement, and allowing people to contribute to their community and society before embarking on a new career or transitioning to the next phase of their life.

CONTRIBUTOR
DAVID SANTULLI
FOUNDER & PRESIDENT, UNITED PLANET
UNITED STATES

Paid social national service can help communities tackle some of today's challenges while, in parallel, fostering respect and empathy. Designed to benefit volunteers, host organisations, beneficiaries and broader communities, paid social national service can take many forms: full time or part time; for lengthy periods or shorter stints; virtual, local or global. It can be offered to youth, working professionals, families and retirees, individually or in teams.

Paid social national service promotes purposeful and impactful collaboration in social service across all sectors and levels of society, both locally and globally. By connecting diverse communities in meaningful and transformative ways, it helps transform mistrust into trust,[25] and allows people to celebrate differences and find commonalities.

For young people, internships and volunteering provide real-life experiences; shape their hopes, dreams and plans for the future; and equip them with new skills. For working professionals, service enables them to rejuvenate, reflect and be inspired, leading to innovative ideas and broadened perspectives. For retirees, service provides an opportunity to stay engaged and share experiences connecting generations, allowing the transfer of reciprocal wisdom and experience. All this sends a message to our elders that we cherish them and value their active participation in civic life.

PAID SOCIAL NATIONAL SERVICE CAN HELP COMMUNITIES

tackle some of today's challenges while, in parallel, fostering respect and empathy.

ESSENTIAL ENABLERS

Paid social national service is perhaps one of the best strategies to foster teamwork and partnership across our diverse communities and complex world. Teamwork and partnership are essential for solving the challenges that our fragile planet faces and for discovering our fullest potential. Paid social service is an investment in learning and development, in community and in a brighter future. What this means is that such an opportunity involves the engagement, partnership and teamwork of all, ensuring that no voices are left out of the conversation. Governments, corporations, civil society and academia all have a critical role to play, not in silos but through essential and profound collaboration.

Another aspect is building the policies and mechanisms needed to enable young people, working professionals and retirees to get paid and to engage in meaningful service – including a platform to match paid volunteers with opportunities anywhere in the world.

LIKELY TIMESCALE

There is no need to wait. Paid social national service can start immediately, provided that collaborative structures, policies and mechanisms are in place.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

Paid social national service matters because it can help to address future supranational challenges such as climate change, global health crises, educational issues, inequalities, economic disparities, poverty and insecurity at more optimal levels beyond the mechanisms and structures of today.

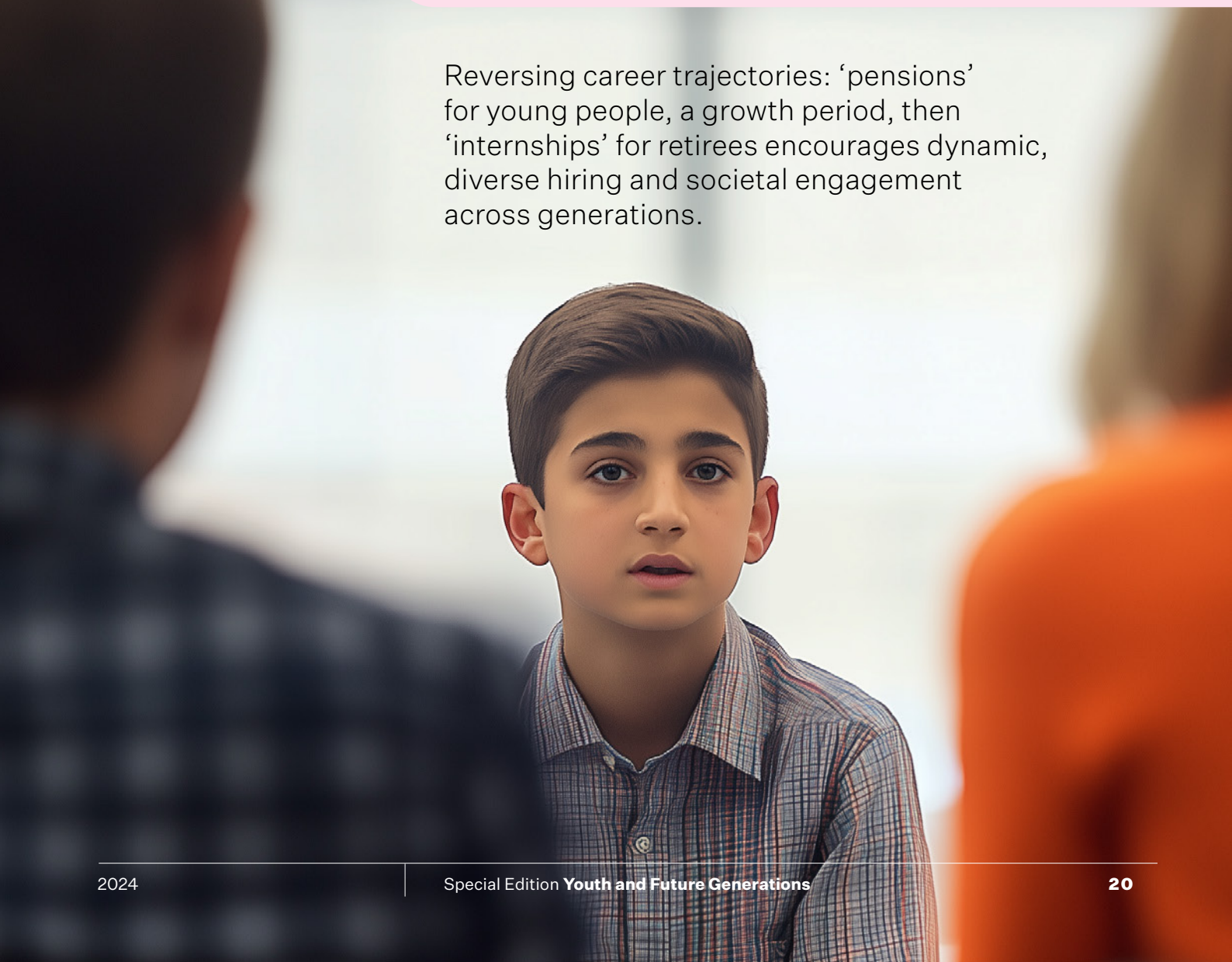
Service builds community and unites people around a shared purpose. Whether local or global, virtual or in-person, full time or part time, in the form of volunteering, internships or practicums, service develops 21st-century skills such as critical thinking, collaboration, communication and leadership.[26] It also builds hard skills related to academic and career competency, which are essential for future generations.

What if young people were paid to explore careers and retirees never retired?

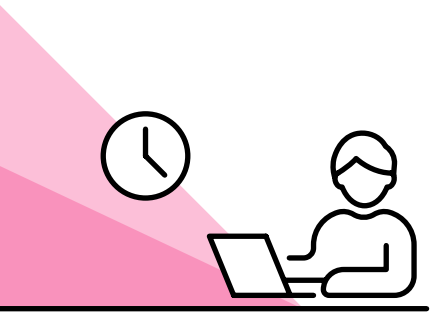
FLIPPING THE CAREER LADDER

OPPORTUNITY #38 FROM THE GLOBAL 50 REPORT **2024**

Reversing career trajectories: ‘pensions’ for young people, a growth period, then ‘internships’ for retirees encourages dynamic, diverse hiring and societal engagement across generations.



CONTRIBUTOR
DR EDDY NG
PROFESSOR & SMITH PROFESSOR OF EQUITY
& INCLUSION IN BUSINESS, QUEEN'S UNIVERSITY
CANADA



WE SPEND
A THIRD
TO A HALF
OF OUR LIVES
WORKING.

Parents like to talk about their kids. They are fixated on their children's generation, how they might be different and mostly what their future might look like. In a series of studies across different generations, there is evidence that people's values, attitudes (towards work and life) and beliefs are heavily influenced by a shared location in time and space.[27,28,29] External events shape their perceptions of work. Our research indicates that Gen Z (those born after circa 1995) no longer value high salaries or rapid promotions, characteristics of a traditional career ladder prized by the preceding generation (Gen Y).[30] The confluence of globalisation, advancements in technology, generative artificial intelligence (AI) and structural shifts in the economy have seen many young workers struggle to gain a foothold in the labour market.[31] Therefore, it should not come as a surprise that job security has jumped in priority for Gen Z compared with Gen Y.[32]

As the nature of work transforms, uncertainties abound.[33] Emerging work models – remote, hybrid, virtual and even a four day work week – may not persist throughout Gen Z's careers. This raises fundamental questions about the future of work: What will work look like? Is work essential? How can we create opportunities as traditional career ideals become obsolete?

ESSENTIAL ENABLERS

Work is a significant part of our lives. Estimates vary, but we spend a third to a half of our lives working. Work serves three important functions. First, work is essential because it provides us with material resources to buy the necessities of life and to meet our consumption needs. Second, work allows us to use our talents and abilities. It satiates our psychological need for meaning and purpose, including egoistic need (self-esteem and self-actualisation). Third, work protects us from boredom and vice and from getting into trouble. Any transformation of work must therefore address these essential functions.[34]

Key will be imagining opportunities in the future of work that embrace a holistic view, transcending traditional notions of labour and productivity. This opportunity invites us to envision a future where work not only serves economic functions but also fulfils our innate desire for purpose, meaning and personal growth. By embracing these opportunities, individuals and societies can navigate the complexities of a rapidly changing world, forging paths that lead to greater fulfilment, innovation and collective progress.

Key will be
IMAGINING OPPORTUNITIES IN THE FUTURE OF WORK THAT EMBRACE A HOLISTIC VIEW,
transcending traditional notions of labour and productivity.

It is important to find ways to inverse the current models of work, starting with addressing income security, preparing young workers for impactful careers, and encouraging them to socialise and hence seek rewards that benefit themselves and others. This proposition benefits everyone and, crucially, it ensures equitable starting positions in life for those with fewer resources. Mature workers could also remain in the workforce longer for purpose and meaning, for income, or to ensure knowledge exchange.

To accomplish these goals, we need to reverse career trajectories: ‘pensions’ for young people, a growth period, then ‘internships’ for retirees. This would encourage dynamic, diverse hiring and societal engagement across generations.

LIKELY TIMESCALE

While pilots can take place immediately, designing and implementing future-focused employment policies, along with necessary changes to related social and pension policies, will take longer. As the world discusses the role that universal basic income could have in a future[35] in which AI influences work,[36] technological advancements, particularly in the future of money and value, will likely influence the implementation of this opportunity within the next decade.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

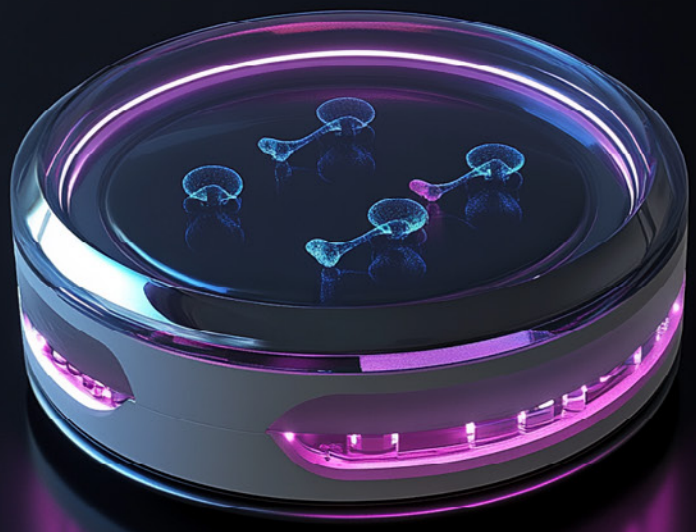
Future generations will need to engage in work, even if it is just to avoid boredom. We will need to create opportunities that are personally meaningful and purposeful for individuals and society more broadly.

What if we knew about infections in seconds?

PETRI DISH ON THE GO

OPPORTUNITY #7 FROM THE GLOBAL 50 REPORT **2024**

Portable devices and advanced nanotechnology allow real-time identification of bacteria, enabling more precise and timely treatment and the bypassing of lengthy bacterial culture tests.



CONTRIBUTOR

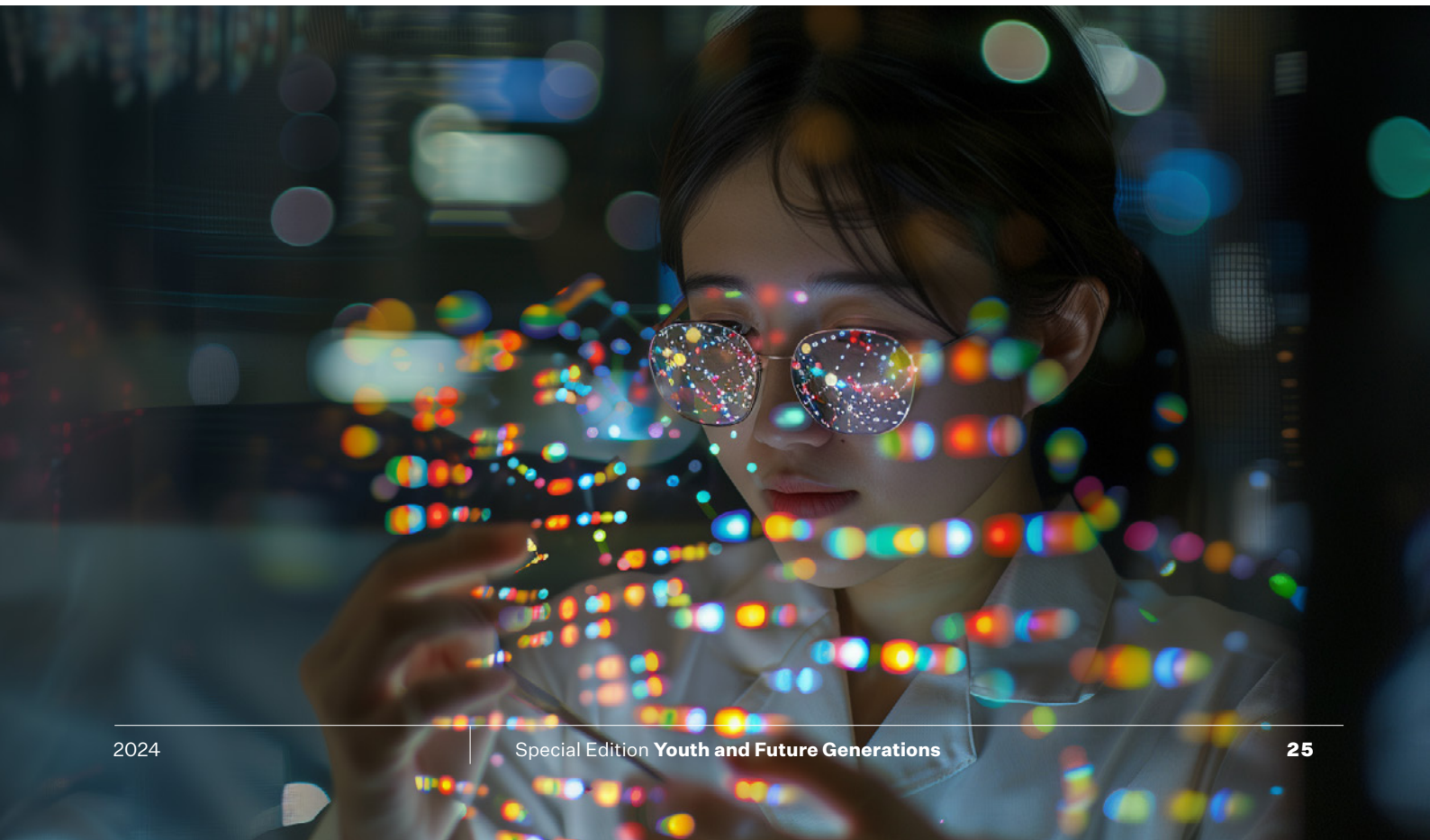
DR FARAH AL MARZOOQ

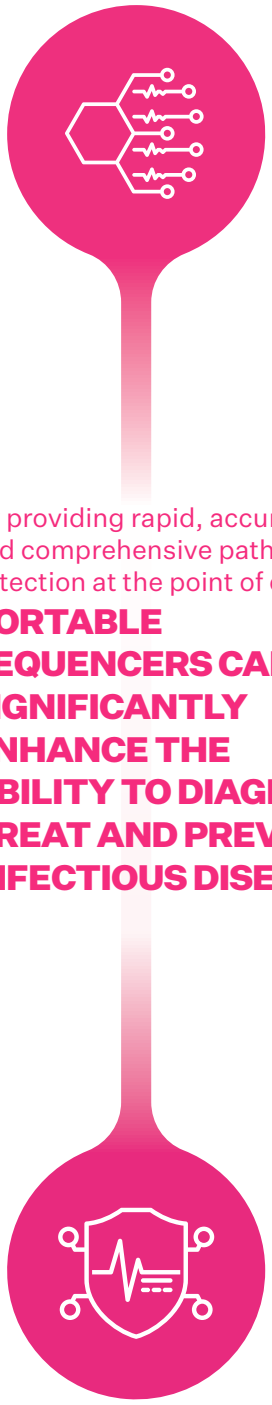
ASSISTANT PROFESSOR, DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY, COLLEGE OF MEDICINE AND HEALTH SCIENCES, UAE UNIVERSITY

UAE

With the escalating burden of infectious diseases, there is a pressing need for speedy diagnostics. Genomic techniques, such as next-generation sequencing, present a promising avenue for pathogen identification and characterisation. This, in turn, can help mitigate the risk of suboptimal antimicrobial therapies, which can exacerbate disease outcomes. Portable sequencers that uncover genetic sequences underlying organisms allow direct identification of microbes from clinical samples. They can outperform traditional culture methods in terms of speed, enabling faster customisation of treatment plans and potentially reducing mortality and morbidity rates.

Compact portable sequencing platforms with integrated computing capacity and analysis software take this capability to another level, harnessing artificial intelligence and machine learning algorithms to produce detailed microbial profiling. This facilitates both the detection of antibiotic resistance genes and aids in the discovery of new targets for antimicrobial therapy.





ESSENTIAL ENABLERS

By providing rapid, accurate and comprehensive pathogen detection at the point of care, portable sequencers can significantly enhance the ability to diagnose, treat and prevent infectious diseases. They are small and easy to transport, allowing on-site sequencing of pathogens. This is particularly beneficial in remote or resource-limited areas where traditional laboratory infrastructure is unavailable, such as field hospitals or rural clinics. These sequencers require minimal sample preparation and do not rely on extensive laboratory equipment or specialised personnel, making them accessible to a wider range of healthcare providers. Moreover, they provide a fast turnaround time, delivering sequencing data within hours and reducing the time required for diagnosis compared with culture-based methods, which can take several days.

By providing rapid, accurate and comprehensive pathogen detection at the point of care,
PORTABLE SEQUENCERS CAN SIGNIFICANTLY ENHANCE THE ABILITY TO DIAGNOSE, TREAT AND PREVENT INFECTIOUS DISEASES.

Real-time bioinformatic analysis during sequencing also enables healthcare professionals to make prompt diagnostic decisions. Portable sequencers exhibit high sensitivity and can reliably detect low quantities of pathogens in various clinical samples. They provide a comprehensive genetic profile of the pathogen and enable precise identification at the species level. This level of accuracy is vital for diagnosing early-stage infections or diseases with low pathogen loads, as well as for tailoring treatment strategies and monitoring the spread of infectious diseases, especially those involving emerging or evolving pathogens. Furthermore, portable sequencers are versatile tools that can simultaneously detect a wide range of pathogens, including bacteria, viruses, fungi and parasites, making them valuable for diagnosing coinfections.

Affordability, however, is crucial for incorporating sequencing into regular healthcare practices. Although portable sequencers are more cost-effective than larger ones, they still require a significant financial investment. While the cost of sequencing has decreased significantly over the years, it remains a major challenge for countries with limited resources. Additionally, establishing the necessary infrastructure, such as data management systems and trained personnel, can be challenging, especially in resource-limited settings. The large amount of sequencing data generated by portable sequencers necessitates the use of robust computational bioinformatics pipelines for data analysis and interpretation. It is essential for healthcare professionals to be proficient in operating portable sequencers and accurately reporting the results. To ensure consistency in sample handling, processing and interpretation, it is important to follow unified optimal protocols and receive adequate training.

LIKELY TIMESCALE

Integrating portable sequencers into diagnostic workflows holds promise for improving patient outcomes and enhancing our ability to combat infectious diseases globally. Governments worldwide must prioritise research, collaboration and investment in this technology to fully realise its potential in healthcare settings. Regulatory approvals will require the development of standardised protocols for effective diagnostic tests using portable sequencers. Increased investment in miniaturised diagnostic devices will help to make this opportunity a reality in the next few years, considering the rapid pace of technological advancements.[37]

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

It is only a matter of time before we face the next major pandemic[38] or encounter a new antibiotic-resistant bacterial infection.[39] Antimicrobial resistance, affecting both humans and animals, could become the leading cause of mortality by 2050.

What if we could splice and dice intellectual property rights?

THE IDEAS ECONOMY

OPPORTUNITY #49 FROM THE GLOBAL 50 REPORT **2022**

Widespread creation, ownership and trading of intellectual property rights through securitisation as a means of income.

CONTRIBUTOR
HODA BARAKAT
FOUNDER, HODA BARAKAT LEGAL CONSULTANCY
UAE

A focus on intellectual property (IP) in the future is an obvious strategy. Governments around the world are realising that to foster competitiveness and drive long-term economic growth, they need to strengthen their knowledge-based economies and focus on nurturing an ecosystem reliant on innovation, research and development.

This shift means that the value of IP assets and the rights associated with them has, and will continue to, become vital. When innovation is the primary driver, robust IP frameworks are needed to encourage creativity. This means that IP has a critical role in facilitating technology transfer, attracting investments and growing a culture essential for sustainable development.

Besides the economic benefits of IP, the future of work is evolving,[40] and it will be necessary to find new ways to support individuals in earning, regardless of whether other income sources materialise because of policy changes, including universal basic income. Implementing IP sharing at the individual level, for example, is one of the many innovative mechanisms some want to use to achieve this.

ESSENTIAL ENABLERS

The continued upward trend of patent filings globally[41] indicates the importance of IP, and support for disruptive innovation in how we manage IP is critical. The link between IP-intensive industries and economic performance is clear. For example, in the European Union during the period 2017–2019, IP-intensive industries generated nearly 30% of all jobs (61 million) and up to 40% (81 million) when indirect employment is also considered (e.g. non-IP-intensive suppliers).[42] Additionally, 47% of total economic activity (gross domestic product) is attributable to IP-intensive industries, worth €6.4 trillion.[43]

To adapt to the changing landscape, governments will need to revisit how IP offices operate and evolve them for the future. This includes the need for greater transparency and trustworthiness in the IP marketplace, improved IP valuation and transactions, and enhanced support for applicants in the commercialisation of IP.[44] Expanding IP protection into new domains, such as the metaverse, space[45] and other future possibilities, will need to be considered, highlighting the need for IP protection to be adaptable and versatile moving forward. Many governments are already looking into this but some are not moving fast enough.

Artificial intelligence (AI) is also creating new avenues for innovation and legal considerations. AI-driven tools are revolutionising the process of IP management, including automated patent searches and predictive analytics to enhance trademark recognition and copyright enforcement. The rapid advancement of AI is reshaping traditional concepts of IP and opening up new frontiers, but challenges relating to IP ownership and ethical/legal considerations, as well as the valuation of IP, will need to be resolved. This may require a uniformly accepted methodology globally if patents and other IP assets are to be increasingly protected and monetised across borders.

LIKELY TIMESCALE

The reality is that evolving the IP infrastructure is important, particularly as cross-border collaborations on IP and new innovation avenues, such as the metaverse, space and other emerging economies, continue to develop and evolve. This evolution is likely to occur within the next 5–10 years, depending on how reliant a particular economy is on IP for global competitiveness and how urgent such a transformation is perceived to be.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

Future generations will require varied sources of income.[46] Given the anticipated advances in AI and technology, which may displace many young workers from their jobs,[47] creative ideas and IP may become essential income sources for many individuals.

What if wisdom was taught?

SCHOOL FOR WISDOM

OPPORTUNITY #18 FROM THE GLOBAL 50 REPORT **2024**

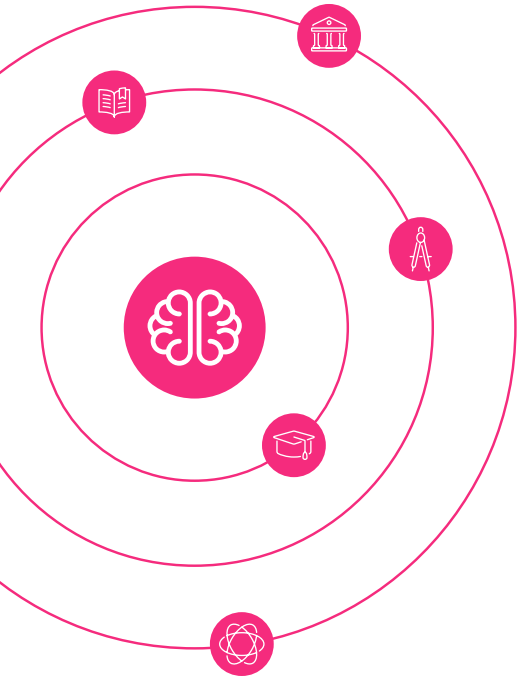
Schools are transformed with wisdom-based education programmes, fostering culturally informed reasoning and skills to tackle complex challenges posed by emerging technologies for both young and old.

CONTRIBUTOR
DR IGOR GROSSMANN
PROFESSOR, DEPARTMENT OF PSYCHOLOGY,
UNIVERSITY OF WATERLOO
CANADA

The quest for wisdom has been a recurring theme throughout human history, from ancient clay tablets in Mesopotamia to modern-day scholarship. In today's world, marked by civic and geopolitical tensions, rapid technological change and the spectre of a post-truth society, the pursuit of wisdom has taken on new urgency. While wisdom is often seen as an abstract ideal, recent advances in behavioural and social science suggest that cultivating wisdom can help us navigate modern challenges with foresight, embracing the complexity and uncertainty of the times ahead.

Research shows that intelligence and rationality alone are insufficient. Being smart does not guarantee well-being or the ability to cooperate with others.[48] In fact, it can sometimes reinforce confirmation bias[49] as intelligent individuals can generate more reasons to convince themselves of their own 'truth'. Similarly, the rational actor of classical economics, focused solely on optimising self-interest,[50] ignores the crucial role of fairness and social context in shaping our choices.[51] In many situations, people are deliberately irrational, foregoing an optimal rational choice in favour of a fair, reasonable option.[52] Wisdom also offers a corrective, helping us balance short-term self-interest with concern for others and the future, piercing through the illusion of objectivity to help us better understand complex human relations and find ways to cooperate with those who may not share our beliefs and preferences.[53]

From climate change to the rise of artificial intelligence, putting wisdom at the centre of organisations and educational and public institutions is not just a lofty ideal – it is a practical necessity. By cultivating the habits of wise reasoning and creating structures that support them, we can tap into a powerful resource for navigating complexity and forging common purpose in a fractured world.[54]



Putting **wisdom at the centre of organisations and educational and public institutions** is not just a lofty ideal – it is a **practical necessity**.

ESSENTIAL ENABLERS

To reap the benefits of incorporating wisdom in educational systems, we must in tandem design institutions that encourage intellectual humility and a willingness to learn from differing viewpoints. Simultaneously, we must create spaces for cross-functional collaboration and reward leaders who demonstrate wise reasoning in the face of complexity, beyond simplistic metrics and incentives that reward narrow, short-term thinking.

Instead of confining the notion of wisdom to schools, we should focus on introducing wisdom-enhancing programmes both in organisations and for decision-makers. The goal is not just to teach wisdom but to create environments that foster wise decision-making across all age groups. In this way, we can empower people of all ages to tackle complex challenges posed by emerging technologies through culturally informed reasoning.

Over the past decade, psychologists have uncovered a set of common strategies related to wisdom, from foresight[55] and efforts to reduce polarisation[56] to mitigating susceptibility to – or the impact of – misinformation[57] and improving interpersonal well-being,[58] cooperation and prosocial behaviour.[59] At their core, these strategies are about recognising the limits of our knowledge,[60] seeking out diverse perspectives and acknowledging the unique realities of a given situation.[61] Such wisdom strategies keep us open to nuance and complexity, resisting the pull of simplistic solutions in a time of uncertainty. Prioritising the soundness of the decision-making process over 'optimal' outcomes, these strategies can be flexibly applied in various contexts, including schools. Crucially, they are not fixed traits,[62] promising to foster wisdom[63] through structural considerations in institutions[64] and carefully designed educational curricula.[65]

In the policy realm, we need to prioritise wisdom as a key competency for decision-makers and a key part of national educational policies. This means valuing the ability to grapple with ethical dilemmas and crafting solutions that balance competing priorities. It means investing in research and education that deepen our understanding of wise decision-making and its foundations.

LIKELY TIMESCALE

Through a collective effort, policymakers can champion wisdom as a priority, embracing it as a core value at all levels of society. From a schooling-specific perspective, incorporating wisdom into schools and pedagogy is not new; however, we have not scaled it for impact in other organisational contexts – community settings, city councils and organisational decision-making – or across the world. For that to happen will take several years in parallel with global efforts to reform education,[66] achieve the associated Sustainable Development Goals[67] and pursue other United Nations efforts to transform global education.[68]

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

As we confront the profound challenges ahead, putting wisdom at the centre of our institutions can help the youth and future generations navigate what will be increasingly uncertain times.

What if all dispute settlement is international?

HUMANITY COURT

OPPORTUNITY #35 FROM THE GLOBAL 50 REPORT **2022**

Dispute settlement in a borderless and digital world.

CONTRIBUTOR
DR KENNETH DEWOSKIN
PROFESSOR EMERITUS, UNIVERSITY OF MICHIGAN
ROSS SCHOOL OF BUSINESS
UNITED STATES

This opportunity addresses the serious need to re-establish an effective rules-based global business environment where cross-border businesses of all sizes can function efficiently, confidently and safely – a need more important than ever. As cross-border trade, investment and talent relocation have increased in the last decade, international dispute resolution processes have come into focus.[69]

As technology advances and enables increasingly complex and borderless business and financial operations, an effective set of rules and global adherence to recourse and arbitration paths are needed. Examples include clarity and fairness in cross-border data transfer rules, content rules for generative artificial intelligence (AI) training bases, and rules governing technology transfer and intellectual property recognition.[70]

As technology advances and enables increasingly complex and borderless business and financial operations, **an effective set of rules and global adherence to recourse and arbitration paths are needed.**

ESSENTIAL ENABLERS

The opportunity itself includes a focus on advanced methodologies for reaching fair and unbiased decisions on issues of dispute, including AI tools. AI tools are already widely deployed in nation-based legal systems, where large databases of case law and precedent can be accessed and curated to guide current dispute decisions. Although this still requires substantial human intervention as current AI has limitations in discerning reliable from unreliable sources,[71] national judicial decisions are enforceable on all parties to the dispute, given the enforcement capability of sovereign governments on both citizens and expatriates living within their borders.

However, the international situation is starkly different. In the current set-up of the global legal system, the success of dispute judgements made by an international body requires voluntary compliance by the involved parties. By enabling a process that is largely automated and without potentially biased and partisan human intervention, the credibility and perceived fairness of decisions made on dispute resolution could increase the likelihood that both parties would agree to be bound by such decisions.

The arbitration process itself is therefore separate from enforcing compliance with its decisions, highlighting the need for an effective and compelling compliance system globally in addition to the improved voluntary compliance we might expect from a more balanced and credible decision-making process. This can be achieved through an international rule-based entity with its own set of clearly defined laws and regulations implementing improved mechanisms of arbitration that recognise what is common across jurisdictions and the legitimate interests of the litigants.

LIKELY TIMESCALE

It is hard to establish a timescale for this opportunity given the challenge of putting in place necesssay mechanisms based on agreement and compliance. While many nations at present are tilting towards protecting their separate sovereign interests by backing away from international organisations,[72] technological advances in AI may enable an automated process for dispute resolution and an analysis of all laws globally to identify commonalities within the next five years, if not earlier, given the urgency of the need.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

Global dispute resolution will matter greatly to youth and future generations. Cross-border transactions in various sectors will blur jurisdictional boundaries, accelerated by the continued growth of giant, multinational business and investment entities and the technological advancements they deploy. Digital native generations will engage in many real-world tasks in virtual environments, making it necessary to ensure the rule of law across borders.

What if businesses considered the future beyond ESG?

ESG-F: INTO THE FUTURE

OPPORTUNITY #49 FROM THE GLOBAL 50 REPORT **2023**

Beyond environment, social and governance (ESG), businesses report on how their approaches to ESG are fit for long-term impact, preventing gaps from arising and anticipating the concerns of stakeholders in the future.

CONTRIBUTOR
DR KLAUDIJO KLASER
DEPARTMENT OF ECONOMICS AND MANAGEMENT,
UNIVERSITY OF TRENTO
ITALY

The year 2024 marks 20 years[73] since the ESG term entered our vocabulary, following the United Nations *Who Cares Wins* report,[74] which officially validated ESG as a multidimensional sustainable investing practice that looks beyond mere material returns.

This multidimensionality is strengthened by the fact that company-level ESG sustainability objectives are increasingly becoming intertwined with[75] the macro-level Sustainable Development Goals.[76] Thus, despite considerable regional disparities,[77] global ESG assets are constantly growing. They reached $30 trillion in 2022 and are on track to surpass $40 trillion by 2030.[78]

In the form of a non-financial reporting framework that quantifies the impact of ESG actions on future generations, ESG+F[79] (with the F standing for future) can help to turn attention towards a more genuine concept of sustainability that exclusively looks at the impact side. ESG+F might also help to better disentangle the two components that usually drive an ESG investment: on the one hand, there is the potential *financial value* embedded in short-term material returns;[80] on the other hand, there are personal *ethical values*[81] (i.e. motivations detached from pecuniary consideration).

2024 MARKS 20 YEARS SINCE THE ESG TERM ENTERED OUR VOCABULARY

ESSENTIAL ENABLERS

Since the introduction of the ESG concept, we have witnessed two parallel phenomena:

- an aggregate confusion[82] concerning the consistency of the various ESG reporting practices, scores, ratings and indexes that try to synthesise and certify the sustainability impact of companies (i.e. investments);
- an aggregate disagreement[83] about the correlation direction between ESG measures and firms' performance or, equivalently, their stock price (i.e. returns).

Given this impulse in terms of numbers and significance, we must find ways to reduce or escape the aggregate confusion and disagreement surrounding ESG investments. In other words, we have to evolve the ESG concept into something clearer and more comprehensive.[84]

We must find ways to reduce or escape the **AGGREGATE CONFUSION** and **DISAGREEMENT** surrounding ESG investments

In this sense, introducing a future-generations-oriented ESG score could be beneficial. Giving more attention to indicators that impact future generations' well-being, despite these indicators might initially be ambiguous within the existing ESG framework,[85] can represent an evolution of the practice, which can become mainstream beyond companies and into other organisations and sectors.

LIKELY TIMESCALE

Given the imminent adoption of the United Nations (UN) Declaration on Future Generations,[86] this opportunity should materialise soon, possibly within the next decade. At the same time, efforts can look beyond the commitments of the 2030 Sustainable Development Goals, restating the global focus on future generations.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

As an innovative concept for the future of ESG, this opportunity brings benefits when it comes to future generations. The growth of ESG assets will impact the welfare of future generations[87] and likely influence decision-makers in companies to prioritise and incorporate considerations for future generations into their decision-making processes.

What if (part of) artificial intelligence (AI) was a public good?

‘PUBLIC’ AI

OPPORTUNITY #23 FROM THE GLOBAL 50 REPORT **2024**

A framework and toolkit for AI as a public good that specifically addresses the challenges of sustainability and on-going performance applied to specific use cases related to global challenges from climate and food security to healthcare and sustainable development.

CONTRIBUTOR

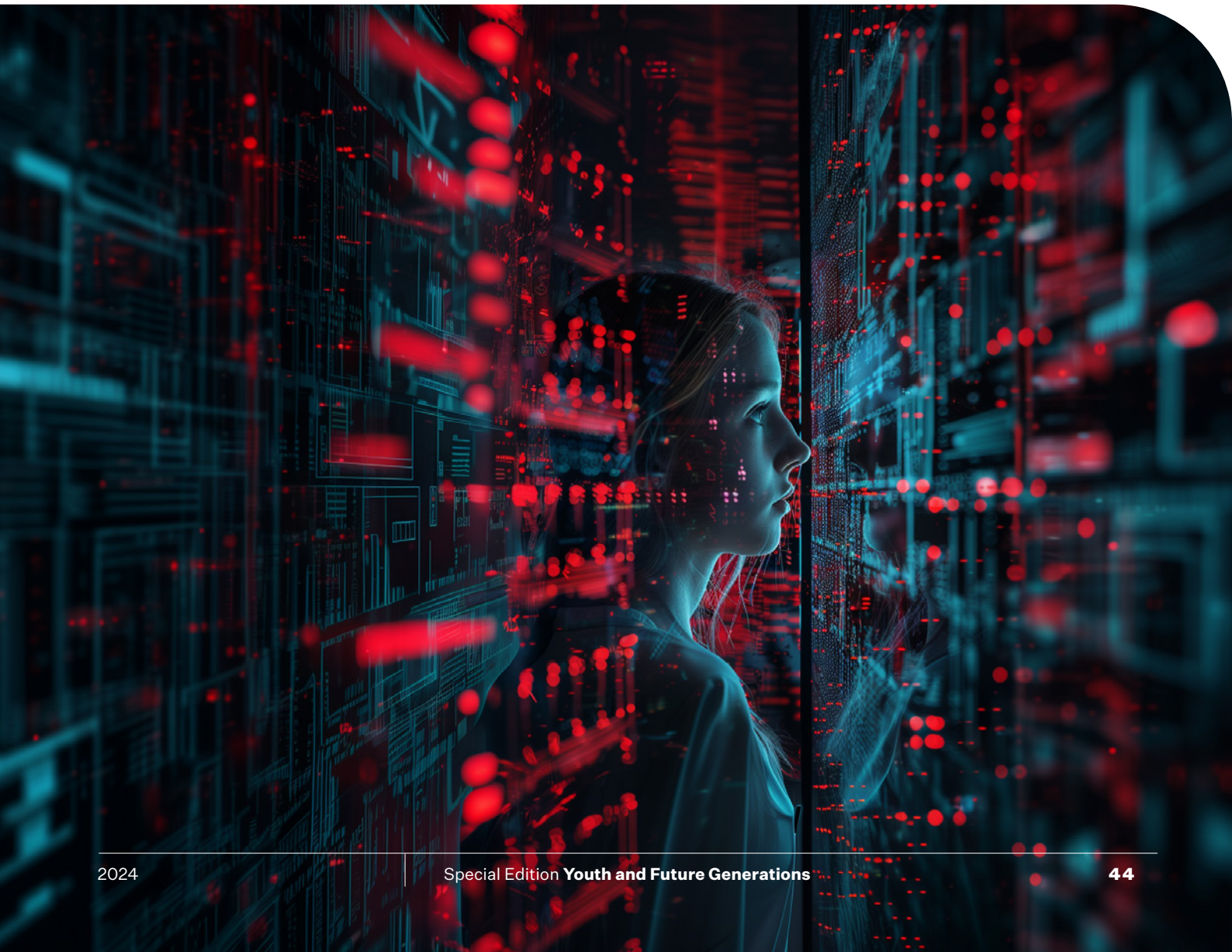
LAMBERT HOGENHOUT

CHIEF DATA AND AI, OFFICE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY, UNITED NATIONS SECRETARIAT

UNITED STATES

Artificial Intelligence (AI) is set to become an essential and pervasive technology in the coming years, and its many uses will have a transformative effect on businesses and our society. Making AI a public good can, in principle, ensure that everyone benefits.

Large companies will continue to be at the cutting edge of AI development, and AI as a public good – even if only part of AI is used in this way – can increase AI equity across society and act as a catalyst for innovation in business and scientific research.



ESSENTIAL ENABLERS

To uncover the essential enablers that heavily rely on governments and policymakers, we first need to be clear what we mean by public AI.

There are various layers to any AI system: the *data* used for training, the *algorithms* that power the AI, the resulting model that comprises the AI system, the ability to run and operate the model, and the ability to put it to *practical use* – that is, adopt it into a process or workflow.

Current AI models, including popular (commercial and open source) large language models (LLMs), often use public *data*, such as Wikipedia, for training. When it comes to public AI, governments could boost this practice by creating high-quality public data and regulating its use for free, open-source systems.

The *algorithms* that power AI systems have traditionally come from academia, with the latest techniques typically published in academic journals shortly after their discovery. The rapid progress we have seen in AI is at least partially a result of this culture of sharing and, interestingly, we could say that the algorithms are a public good already. What would be essential is continuing to enable such a collaborative and open mindset in the future.

When it comes to *models*, one size does not fit all. Different regions and countries have different languages, cultural expectations and needs. A context-specific model will perform far better than a general one, no matter how large. Part of making AI a public good would mean that governments enable, be it through research or funding, the creation of locally relevant models and make those publicly available, as has been in Sweden[88] and the UAE.[89]

A few years ago, *running AI models* was reserved for those who could afford significant computing power. However, with smartphones and other Internet of Things (IoT) devices becoming more powerful each year, and smaller AI models being invented that rival the capability of much larger ones, the ability to deploy AI is rapidly being democratised. It is already quite possible to run certain LLMs on a smartphone. In five years, running AI systems is likely to become trivial for anyone.

Finally, the ability to *put AI to practical use* depends largely on a good understanding of what AI is and how it can be used most effectively. Governments can empower citizens in this respect through education and awareness campaigns.

Part of

MAKING AI A PUBLIC GOOD

would mean that governments enable, be it through research or funding, the creation of locally relevant models and make those publicly available.

THE RAPID PROGRESS WE HAVE SEEN IN AI IS AT LEAST PARTIALLY A RESULT OF THIS CULTURE OF SHARING

and, interestingly, one could say that the algorithms are a public good already.

LIKELY TIMESCALE

The timescale for this opportunity is difficult to determine. Similarly to how ChatGPT grew faster than expected,[90] public AI could happen fairly quickly if more algorithms are made accessible and funding initiatives are launched. However, it may also take several years as debates continue over the responsibility for financial costs and the carbon footprint of operating AI – or until an innovative funding model for running AI is developed.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

Public AI can increase equity and stimulate innovation by empowering individuals, academia, small businesses and the public sector, not only enhancing the quality of the resulting AI capabilities but also improving the safety of the models and increasing trust in the public AI systems. All of these factors are important to both youth and future generations.

What if generational diversity was a must in the boardroom?

ALL-GENERATION DIRECTORSHIPS

OPPORTUNITY #15 FROM THE GLOBAL 50 REPORT **2023**

Company, public sector and civil society boards of directors and trustees systematically include people of all generations as a principle of corporate governance embedded in all legal, regulatory and international standards.

CONTRIBUTOR
DR NICK BARTER
PROFESSOR, DEPARTMENT OF BUSINESS STRATEGY AND INNOVATION, GRIFFITH UNIVERSITY
AUSTRALIA

The imperative for all-generation boards lies within the logic of numbers and limits. Globally, life expectancy is expected to reach 77 years by 2050,[91] while the average age of board members is presently 60 years[92] and that of chief executive officers (CEOs) 57 years.[93] If we consider a generation to be about 30 years,[94] these leaders were born two generations ago and have just over half a generation left to live. During their lifetime, the global population will have grown from approximately 3.4 billion (using average 1964–1967 data)[95] to an estimated 9.5 billion (using the no-change scenario and average 2041–2044 data).[96] They will have lived through a time when the population, drawing on the earth's finite resources, has increased almost threefold. We have gone from not having the internet or smartphones to these being universal. These shifts are only scratching the surface relative to predictions regarding the pace and depth of change around artificial intelligence, energy mixes and our response to climate change.

ESSENTIAL ENABLERS

Some countries have already taken steps in the direction of this opportunity. For example, Wales has a Future Generations Commissioner,[97] the UAE has a Minister of State for Youth Affairs,[98] Finland has a Committee for the Future,[99] Malta has established a Guardian of Future Generations[100] and Hungary has an Ombudsman for Future Generations.[101] Similarly, some companies, such as Good Energy,[102] Pentland Brands,[103] and The Body Shop[104] in the UK, have youth advisory boards.

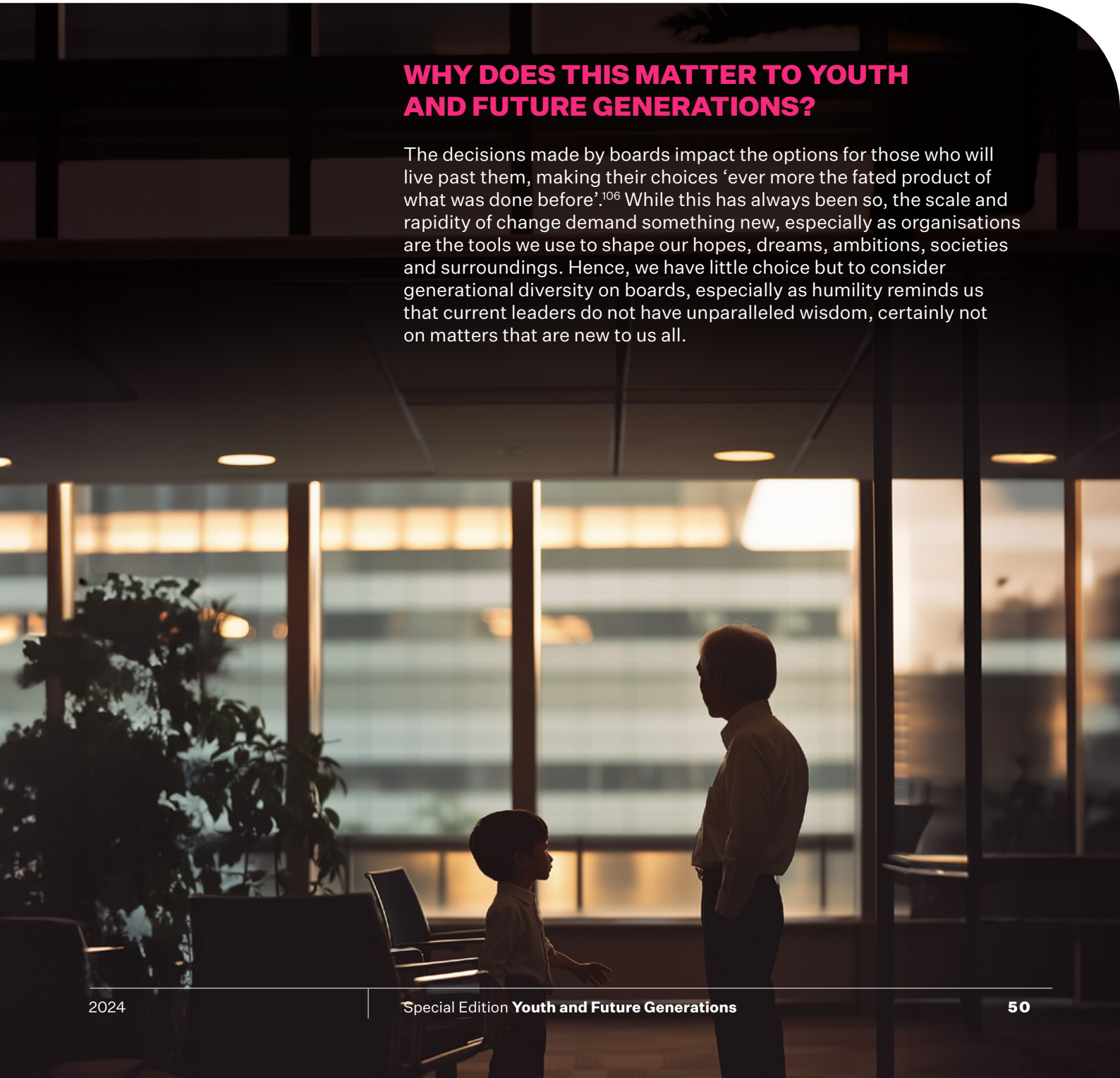
There is always hope that the logic of numbers, constraints and the speed of change will be enablers and sufficient drivers of change; however, these are rarely enough and it is through conversation that change can start to happen. For example, people in their twenties and thirties can ask board members (perhaps their parents) if the organisation they are leading is enabling a world in which they would want to live.[105] This type of question creates cognitive dissonance, an antecedent of change.

Another enabler is metrics. It is a reasonable hypothesis that decisions made by all-generation boards are likely to result in enhanced customer and employee loyalty, which transfers to the bottom and top lines.

In terms of barriers, inertia is an ever-present enemy of change, especially among those benefiting from the status quo. Yet, standing out and governing in a way that looks to the future would be an obvious advantage for all stakeholders, not least because an all-generation board is additive, not reductive, and it enhances the ability to navigate rapid changes.

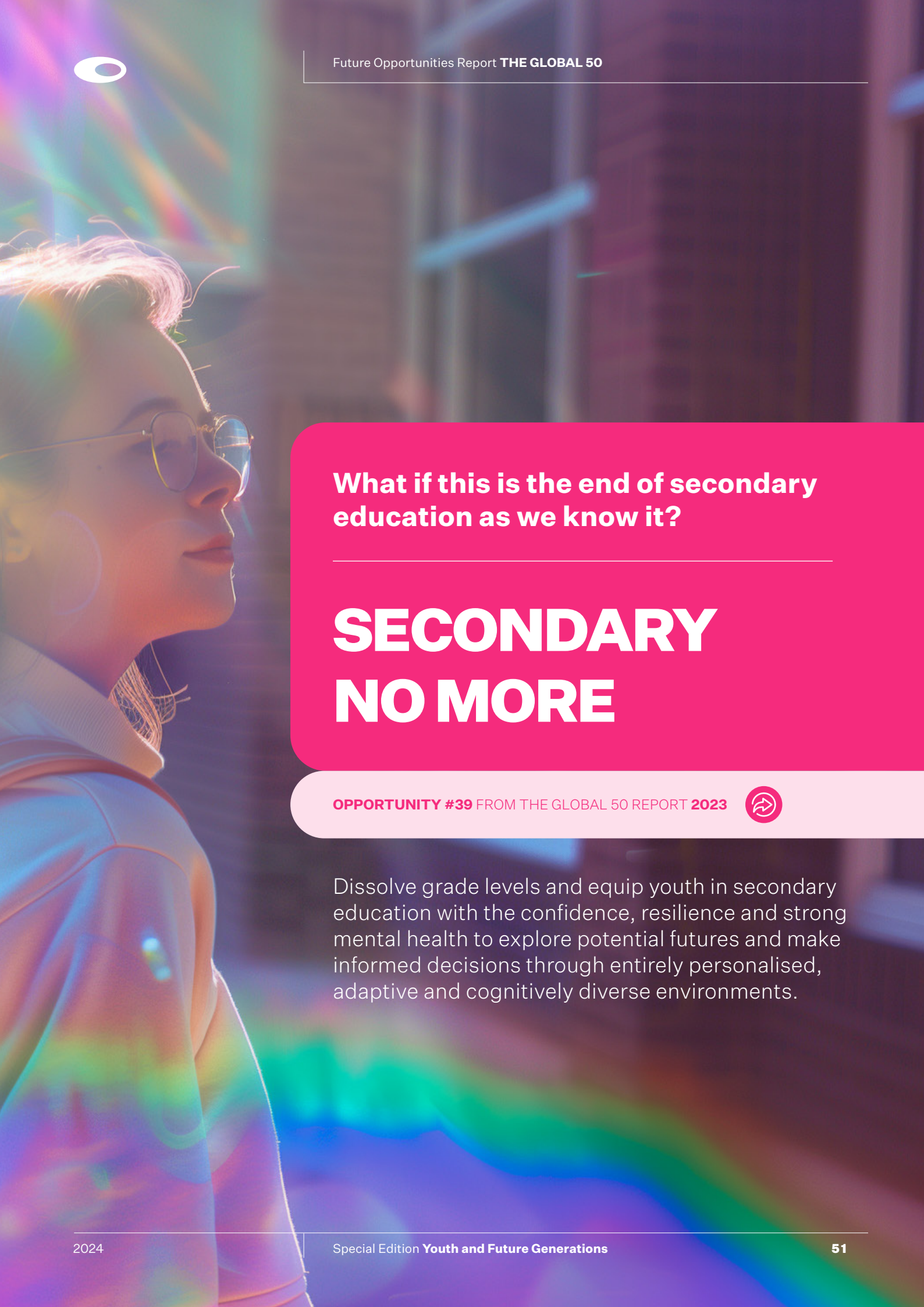
LIKELY TIMESCALE

Starting is straightforward for any organisation. Hiring board members that are a generation younger than the current average age is feasible and not revolutionary. Further, an organisation initiating conversations on generational representation could implement protocols and procedures within a year. Broader legal changes will take longer, as systemic change is always slower. However, if our future normal is to be one we want to live in, shifting boards to all-generation representation is a compelling opportunity.



WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

The decisions made by boards impact the options for those who will live past them, making their choices 'ever more the fated product of what was done before'.[106] While this has always been so, the scale and rapidity of change demand something new, especially as organisations are the tools we use to shape our hopes, dreams, ambitions, societies and surroundings. Hence, we have little choice but to consider generational diversity on boards, especially as humility reminds us that current leaders do not have unparalleled wisdom, certainly not on matters that are new to us all.



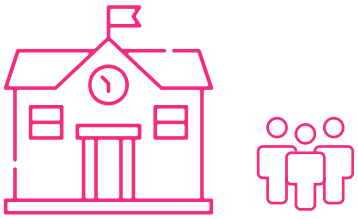
What if this is the end of secondary education as we know it?

SECONDARY NO MORE

OPPORTUNITY #39 FROM THE GLOBAL 50 REPORT **2023**

Dissolve grade levels and equip youth in secondary education with the confidence, resilience and strong mental health to explore potential futures and make informed decisions through entirely personalised, adaptive and cognitively diverse environments.

CONTRIBUTOR
OLA ISSA
EDUCATION EXPERT
UAE



The transformation of secondary schooling presents **A UNIQUE OPPORTUNITY TO CREATE A MORE PERSONALISED, FLEXIBLE AND INCLUSIVE EDUCATION SYSTEM** that fosters a love for learning and encourages students to pursue their interests.

As we stand on the brink of unprecedented technological and societal changes, the question of whether we still need traditional secondary schooling has become increasingly relevant. The advent of advanced technology, shifting generational values and evolving educational philosophies, suggests that secondary education is poised for a radical transformation. This potential shift is not just a possibility but a significant global opportunity that could redefine learning for future generations.

The transformation of secondary schooling presents a unique opportunity to create a more personalised, flexible and inclusive education system that fosters a love for learning and encourages students to pursue their interests. Through this we can cultivate a generation of lifelong learners who are curious, innovative and engaged with the world around them. This not only benefits individuals but also has broader societal implications, promoting economic growth, social cohesion and global understanding.[107]

Traditional secondary education, with its one-size-fits-all approach, often fails to cater to the diverse needs and aspirations of students. Developing impactful individualised learning pathways that accommodate different learning styles, paces and interests can lead to improved student outcomes, greater engagement and higher motivation.[108] This was demonstrated by the success of the Big Picture Learning model, implemented in several schools across the United States and internationally.[109] Big Picture Learning schools focus on personalised, real-world learning experiences – rather than conventional classroom instruction – in which students engage in internships, projects and independent studies tailored to their interests and career aspirations.

With technological advancement, the transformation of secondary schooling will not only be limited to affluent communities but can also be a reality for many worldwide, regardless of geographical location, promoting equity and social mobility on a global scale[110] and avoiding exacerbating existing inequalities.

ESSENTIAL ENABLERS

For this transformative vision to become a reality, several key enablers must be in place. First and foremost is integration of advanced technology into the education system. This includes not only the widespread availability of digital devices and internet connectivity but also the development of sophisticated educational software that can adapt to individual students' needs. Artificial intelligence and machine learning can play crucial roles in creating adaptive learning environments that provide real-time feedback and personalised learning experiences.[111]

Another critical enabler is the shift in educational philosophy. There needs to be a move away from rote learning and standardised testing towards a focus on critical thinking, creativity and problem-solving skills. Educators must be trained to facilitate learning in this new environment, acting as guides and mentors rather than traditional instructors. The Organisation for Economic Co-operation and Development's research underscores the importance of fostering skills such as critical thinking and creativity to prepare students for future challenges.[112]

Finally, like any major transformation, clear communication about the benefits of a new vision for secondary schooling is important. Emphasising and establishing the structures needed for a collaborative approach to designing and implementing new educational models[113] will be particularly important for stakeholders accustomed to the traditional education system, including educators, parents and policymakers.

LIKELY TIMESCALE

The transformation of secondary education globally is likely to be a gradual process, taking place over the next two to three decades, although some communities may find themselves more prepared and ready than others. While some changes can be implemented relatively quickly, such as incorporating more technology into classrooms, a complete overhaul of the system will take time. This includes updating curricula, training educators and ensuring that infrastructure is in place to support new learning models.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

For future generations, this transformation is crucial. The skills required in the 21st-century workforce are vastly different from those of the past. Employers increasingly value critical thinking, creativity, collaboration and digital literacy. A transformed education system that emphasises these skills will better prepare students for the future job market, making them more adaptable and resilient in the face of rapid technological change.[114]

What if every surface could remove carbon?

BRICK BY BRICK – CARBON REMOVAL EVERYWHERE

OPPORTUNITY #3 FROM THE GLOBAL 50 REPORT **2022**

Novel materials, coatings and genetically modified plants can remove carbon from the air and help cities become net-zero or even carbon-negative spaces.

CONTRIBUTOR
DR TAYLOR L. WEISS
ASSISTANT PROFESSOR, THE POLYTECHNIC SCHOOL, IRA A. FULTON SCHOOLS OF ENGINEERING, ARIZONA STATE UNIVERSITY
UNITED STATES

Addressing climate change will require the significant reduction of carbon dioxide (CO_2) emissions at concentrated sources. However, there are spaces – particularly within cities – where even though emissions are less concentrated and are chemically varied, they still pose direct harm to human health and indoor air quality. These difficult-to-address sources may be industrial, such as legacy combustion and wastewater treatment sources located in densely populated urban areas, which typically offer little physical space for large-scale carbon capture adaptation.[115]

Such difficult-to-address sources are also evident in critical locations such as hospitals and skyscrapers, where maintaining a comfortable and healthy climate is already energy intensive. Widespread, this makes it difficult to practically and economically integrate the capture of less concentrated emissions with large-scale efforts, such as geological carbon sequestration. Novel materials, coatings and genetically modified organisms can remediate these harmful emissions, cleaning the air and resulting in healthier people and a healthier environment.

ESSENTIAL ENABLERS

Advances in materials and biomaterials sciences are critical for realising the benefits of this opportunity and diversifying carbon capture solutions. Construction materials of all kinds – concrete, glass, asphalt – are being engineered to absorb and reuse CO_2 and emit fewer harmful air pollutants,[116] such as volatile organic compounds, which have implications for human health.[117]

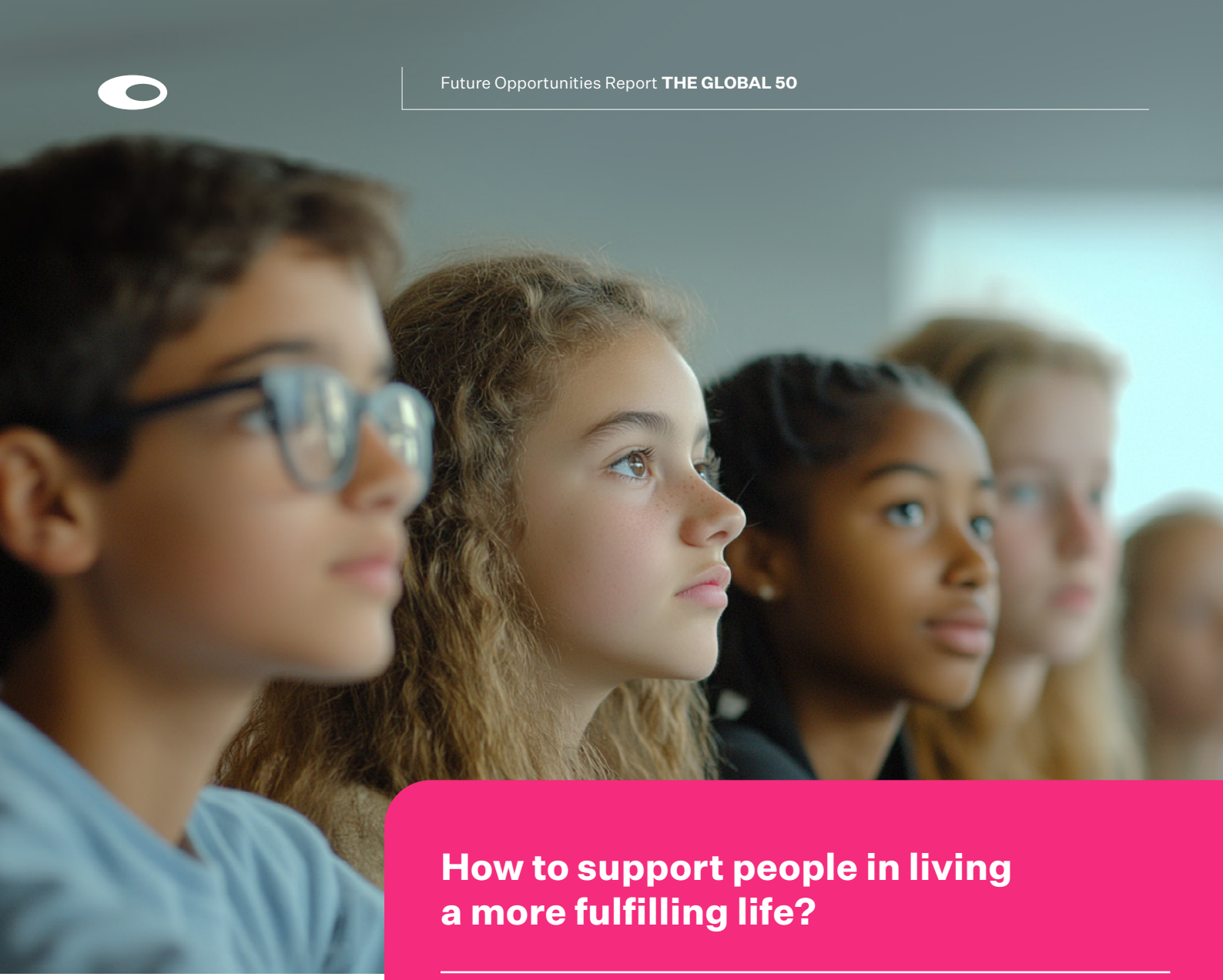
Biomaterial surfaces, which may include suspended enzymes and bacteria, also offer the possibility of widely deployable self-cleaning surfaces, reducing disease, grime and air pollutants.[118,119] More specifically, when it comes to carbon capture, biomaterial surfaces that support synthetic communities of genetically modified, photosynthesising algae[120] and matrix-attached algae[121] offer effective and cost-efficient pathways to natural emissions cycling in closed environments, whether located in water-stressed environments or fully sealed spaces. Algal species are both abundant and increasingly easily modified for this purpose, and embedding algae within polymer matrices allows practical applications on a variety of surfaces.[122,123] Such natural and artificial biofilming algae are increasingly developed to treat air and water simultaneously by consuming CO_2 while also treating wastewater.[124]

LIKELY TIMESCALE

The likely timescale is difficult to assess; however, it will be tied to commitments to reach net zero by 2050.[125] The deployment of such materials will also continue to inform regulatory and government approaches to emissions controls while simultaneously creating greater demand for such sustainable biomaterials and carbon capture solutions. The key concern is that such solutions may reduce the economic incentive of, and investments in, source elimination and more permanent sequestration pursuits.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

Embedded, distributed emissions control requires less capital and energy, while offering direct health impacts relative to large-scale carbon capture and storage initiatives. Deploying walls, streets and buildings that actively treat and/or reuse emissions allows cities to adopt targeted solutions to specific types of localised emissions, while also significantly contributing to overall net-zero or even carbon-negative emissions.



How to support people in living a more fulfilling life?

THE MINISTRY OF SELF-REALISATION

OPPORTUNITY #7 FROM THE GLOBAL 50 REPORT **2022**

As universal needs are met, governments make self-realisation a priority in legislation, influencing their own agenda across all areas of policy as well as that of their citizens.

CONTRIBUTOR
DR TRACY BROWER
AUTHOR, *THE SECRETS TO HAPPINESS AT WORK* AND *BRING WORK TO LIFE*
UNITED STATES

Happiness, fulfilment and self-realisation are not just nice-to-have attributes – they are the lifeblood of individuals, groups and societies. In fact, when people experience greater joy, autonomy and self-esteem, they are more successful and healthier, with greater physical, cognitive and emotional well-being.

In particular, when people have more choice, they tend to willingly put in more effort. When people feel more valued, they foster positivity within organisations. And when people take empowered action, they contribute to a better world.

People prosper when they have a sense of purpose, connection and value, as well as opportunities for growth. They need distributive justice – a sense that there is equity in who receives – and also contributive justice – a sense of fairness in the opportunity to give. We all have an innate need to matter and a need to express our talents and provide for others. These are important elements of self-realisation.

PEOPLE PROSPER WHEN THEY HAVE A SENSE OF PURPOSE, CONNECTION AND VALUE, AS WELL AS OPPORTUNITIES FOR GROWTH.

ESSENTIAL ENABLERS

Our world is volatile, uncertain, complex and ambiguous, creating the impetus for a global conversation that inspires inquiry and compels action. People are fearful, lonely and experiencing high levels of depression, anxiety and mental health issues. Within this context, we have the opportunity to empower them towards their own better choices, health and empowerment, through everything from education to self-help approaches.

There is a global shortage of talent and deteriorating trust in organisational leadership, but employers have the opportunity to create the conditions for happiness and success. They can inspire purpose and encourage connections between colleagues and leaders. They can provide meaningful work, learning and growth, and they can provide vision, leadership and clarity so that their employees can perform brilliantly, contributing their best and building self-esteem.

People feel lonely and disconnected from their communities. Within this reality, governments can foster opportunities for individuals to volunteer, get involved and build relationships with their friends, neighbours and community members. We will need to clearly articulate the challenges, generate common language about what is not working at present and then create awareness about how multiple stakeholders can make a positive difference through reciprocity and common ground. From there, we will need to inspire action. Our steps will not be perfect, and we will need to measure, monitor and continuously improve as we move forward, nourishing people and fortifying societies.

LIKELY TIMESCALE

Work towards greater self-realisation must begin yesterday – or today. The saying is apt: ‘The best time to plant a tree is 20 years ago. The second-best time is today.’ The greatest changes are possible when there is significant challenge and so the time is now. For governments that are agile and futures-focused, the likely timescale is immediate.

WHY DOES THIS MATTER TO YOUTH AND FUTURE GENERATIONS?

The future is bright and the impact will last for generations to come if we envision and empower happiness, fulfilment and self-realisation and align ourselves towards compelling outcomes for people, organisations and societies. Technology promises convenience, but it may degrade connection. Together with shifts in future economies[126] and the landscape of work,[127] seeking out the means for self-realisation will become a necessity.

This research was undertaken by the Dubai Future Foundation's Dubai Future Institute. The Dubai Future Foundation produces insights and foresight reports using evidence-based analysis and imagination that enable stakeholders to anticipate and better navigate the future.

Our publications can be found at **www.dubaifuture.ae/insights/**

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BACKGROUND NOTES

As recognised in the United Nations (UN) Pact for the Future,[128] the term 'future generations' differs from 'youth'. Besides exploring how the term 'youth' is defined around the world, we explored terms such as 'future generations', 'intergenerational equity' and 'intergenerational justice' to further understand the distinction. In doing so, we also conducted an in-depth review of perspectives from various regions and inter- and non-governmental entities, including the UN and Indigenous population councils, strategies and principles.

While our research was not comprehensive, we found a wide range of frameworks and interpretations. As a result, it informed our decision to consciously focus on both youth and future generations as two distinct groups. This mirrors the approach taken within the UN Declaration on Future Generations.[129] This section provides commentary on some of the interesting aspects we noted.

On scope

While the youth are often recognised as a separate demographic within a population, the age range varies. For example, the UAE defines youth as those aged 15-35 years,[130] the Organisation for Economic Co-operation and Development uses 15-29 years[131] and the UN 15-24 years.[132]

In addition, while it is widely understood that future generations will inherit the outcomes of the decisions made by the current and past generations, the distinction of where the boundary lies for who makes those decisions is not always clear, e.g. decisions made by children and youth today.

Finally, the defintion of what constitutes a generation, in terms of years, is not always specified. The time span is either not stated or is long term, such as the case in Wales, 25, 50 or 100 years into the future.[133] Indigenous communities specify either a specific number of years (140 years in the Seventh Generation Principle[134]) or societal roles like children and grandchildren (the Maohi, French Polynesia[135]).

For this special edition, we adopted the view that future generations encompass all indviduals who are yet to be born, irrespective of their year of birth relative to today.

On strategy

While the UAE focuses on the need to prepare youth and future generations for global challenges and opportunities,[136] other country-level strategies consider future generations within policymaking from sustainability and well-being perspectives and/or to manage future uncertainties.

The World Economic Forum looks at it from the perspective of the future being a common good,[137] and recently, the managing director of the International Monetary Fund referred to her 'grandchildren's better future'.[138]

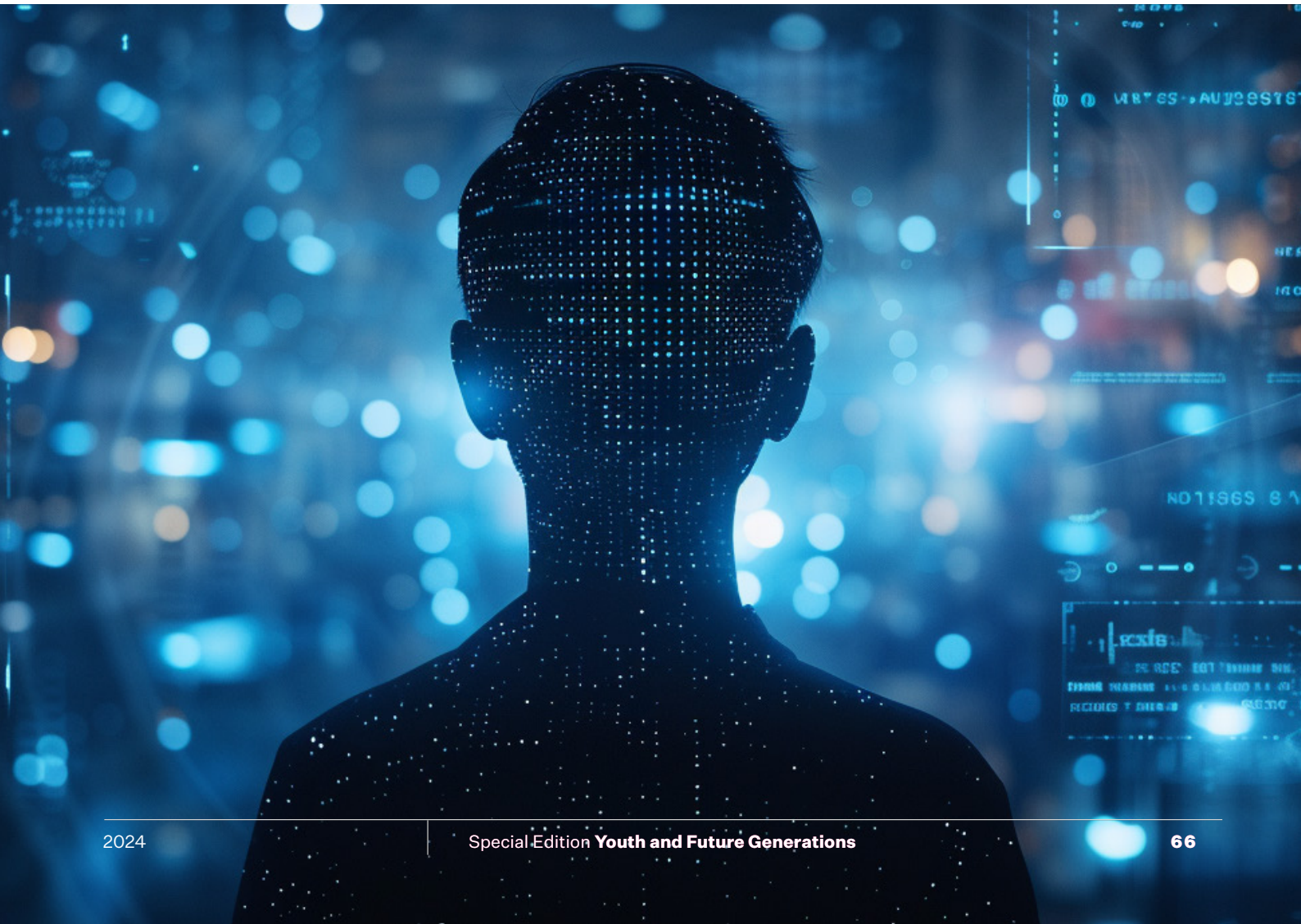
The Indigenous perspective from various communities around the world was slightly different. Strategies stem from cultural, spiritual and environmental traditions which emphasise sustainability, cultural heritage, community and life stages, from children to the elderly.

The UN emphasises the concept of future generations from the perspective of intergenerational equity, part of which is intended to be achieved through through the implementation of the 2030 Sustainable Development Goals (SDGs),[139] covering education (SDG 4), climate (SDG 13), consumption patterns (SDG 12), energy (SDG 7), and all life forms in water and on land (SDGs 14 and 15).

On governance

Several countries have established dedicated roles or frameworks to safeguard the interests of future generations. For instance, Wales has appointed a Future Generations Commissioner to ensure that public bodies consider the long-term impact of their decisions.[140] Similarly, Hungary has an Ombudsman for Future Generations tasked with protecting those generations' rights and interests through legislative oversight.[141] Malta has appointed a Guardian of Future Generations to advocate for sustainable national policies that protect intergenerational and intragenerational development.[142]

Others integrate future generation considerations into broader policy agendas, as in the UAE, or focus on the youth, as in Azerbaijan[143] and Nigeria.[144] Canada[145] and the Netherlands,[146] for example, have youth councils that represent the voice of the youth within government. Countries also address the needs of future generations indirectly through environmental strategies. Examples include the Centre for Strategic Futures in Singapore[147] and Canada's Federal Sustainable Development Act, which emphasises intergenerational equity and sustainable development, aiming to ensure that current policies do not compromise the ability of future generations to meet their needs.[148]



Today's youth

The youth today have concerns. One in seven adolescents (12–15 years) face mental health issues[149] and half of all mental disorders start before 15 years of age.[150] More than 80% of youth aged 11–17 years fall 80% short of the suggested level of physical activity.[151] About 60% of young people between the ages of 18 and 24 years report negative effects on well-being from feelings of loneliness.[152] There is a technological divide between countries and genders.[153] While the evidence is inconclusive so far about the link between social media and feelings of depression and anxiety[154] and, similarly, whether there is a delayed effect of connectivity on mental health,[155] the number of active devices connected to the Internet of Things (IoT) is projected to double from 14.6 billion in 2021 to 30.2 billion in 2027.[156] The average time spent using the internet on a daily basis for young people between ages 16 and 24 years is just over 7 hours.[157]

There will be a 56% increase in the amount of food required to sustain everyone compared with current global production.[158] It is anticipated that by 2040, one in four children will reside in regions with severe water shortages.[159] Nearly 160 million children are subjected to droughts, and these are becoming more severe and protracted.[160] According to a study published in *The Lancet* encompassing 10 countries, approximately 60% of individuals between the ages of 16 and 25 years are either extremely or very concerned about the climate.[161]

At the same time, there is some optimism stemming from the benefits of technology and innovation. In a UN survey with youth participants aged 10–24 years, although the majority (76%) believe that the risks of AI technology are serious, they consider them manageable, and 86% expressed a desire to collaborate with AI in the future.[162] Even from a health perspective, advances in stem cell related technologies are expected to enable treatments for more than 70 types of disease, including immune system diseases, genetic disorders, neurological disorders and some forms of cancer.[163]

A final note

As mentioned, while our research is not comprehensive, our findings and these noted aspects reflect a common recognition of the importance of young people and of protecting the interests of future generations. There is no one right approach, but what we do know is that youth and future generations have an important place in shaping the future.

ENDNOTES

[1] United Nations (n.d.) 'Youth'. www.un.org/en/global-issues/youth (retrieved 13 July 2024)

[2] Ibid.

[3] United Nations (2019) 'World Population Prospects 2019: Highlights'. https://population.un.org/wpp/Publications/Files/WPP2019_Highlights.pdf

[4] GBD 2021 Fertility and Forecasting Collaborators (2024) 'Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: A comprehensive demographic analysis for the Global Burden of Disease Study 2021'. *Lancet*, 403: 2057–2099. https://doi.org/10.1016/S0140-6736(24)00550-6

[5] United Nations (n.d.) 'World Population Prospects 2024. World: Total population (age 15-24)'. https://population.un.org/wpp/Graphs/Probabilistic/POP/15-24/900 (retrieved 13 July 2024)

[6] Ibid.

[7] U.AE (2024) 'Youth'. 6 June. https://u.ae/en/information-and-services/social-affairs/youth

[8] U.AE (2023) 'UAE Centennial 2071'. 14 June. https://u.ae/en/about-the-uae/strategies-initiatives-and-awards/strategies-plans-and-visions/innovation-and-future-shaping/uae-centennial-2071

[9] U.AE (2024) 'Youth'. 6 June. https://u.ae/en/information-and-services/social-affairs/youth

[10] Saleh, A. (2023) 'UAE government prioritises future generations in its policies: Ohood Al Roumi'. *Emirates News Agency–WAM*, 28 November. https://wam.ae/article/apva740-uae-government-prioritises-future-generations-its

[11] His Highness Sheikh Mohammed bin Rashid Al Maktoum (n.d.) 'The Fifty-Year Charter'. The Executive Office. www.mbrmajlis.ae/50-en/The%20Fifty-Year%20Charter.pdf (retrieved 20 August 2024)

[12] Dubai Future Foundation (2024) 'Future opportunities report: The Global 50'. www.dubaifuture.ae/wp-content/uploads/2024/03/The-Global-50-2024-Eng.pdf

[13] United Nations (2024) 'Pact for the Future' (Rev. 2, draft). www.un.org/sites/un2.un.org/files/pact_for_the_future_-_rev.2_-_17_july.pdf

[14] United Nations (n.d.) 'Declaration on Future Generations' (Rev. 3, draft). www.un.org/sites/un2.un.org/files/sotf-declaration-on-future-generations-rev3.pdf (retrieved 28 August 2024)

[15] United Nations (n.d.) 'Global Digital Compact' (Rev. 3, draft). www.un.org/techenvoy/sites/www.un.org.techenvoy/files/general/GDC_Rev_3_silence_procedure.pdf (retrieved 13 September 2024)

[16] Mannan, M. and Al-Ghamdi, S.G. (2021) 'Indoor air quality in buildings: A comprehensive review on the factors influencing air pollution in residential and commercial structure'. *International Journal of Environmental Research and Public Health*, 18(6): 3276. https://doi.org/10.3390/ijerph18063276

[17] IEA (n.d.) 'Energy Efficiency 2020: Buildings'. www.iea.org/reports/energy-efficiency-2020/buildings (retrieved 13 February 2023)

[18] National Program for Artificial Intelligence (2018) 'UAE National Strategy for Artificial Intelligence 2031'. https://ai.gov.ae/wp-content/uploads/2021/07/UAE-National-Strategy-for-Artificial-Intelligence-2031.pdf

[19] UNDP (n.d.) 'Human Development Index (HDI). https://hdr.undp.org/data-center/human-development-index#/indicies/HDI (retrieved 28 August 2024)

[20] Social Progress Imperative (2023) 'Global Social Progress Index'. www.socialprogress.org/social-progress-index (retrieved 28 August 2024)

[21] GNH Centre Bhutan (n.d.) 'GNH Happiness Index'. www.gnhcentrebhutan.org/gnh-happiness-index/ (retrieved 28 August 2024)

[22] The Treasury (2023) 'Wellbeing Budget 2023: Support for today Building for tomorrow'. www.treasury.govt.nz/sites/default/files/2023-05/b23-wellbeing-budget.pdf

(retrieved 28 August 2024)

[23] Ministry of Housing and Urban Planning (n.d.) 'Ease of Living'. https://amplifi.mohua.gov.in/eol-landing (retrieved 28 August 2024)

[24] Social Progress Imperative (2023) 'Global Social Progress Index'. www.socialprogress.org/social-progress-index

[25] Ross, M. and Bateman, N. (2020) 'National service can connect America's young people to opportunity and community—and promote work of real social value'. Brookings, 9 December. www.brookings.edu/articles/national-service-can-connect-americas-young-people-to-opportunity-and-community-and-promote-work-of-real-social-value

[26] Sabat, I.E. et al. (2015) 'Developing students' twenty-first century skills through a service learning project'. *Journal of Learning in Higher Education*, 11(2): 23–32. https://eric.ed.gov/?id=EJ1139440(retrieved 28 August 2024)

[27] Ng, E.S. et al. (2022) 'Do "one-size" employment policies fit all young workers? Heterogeneity in work attribute preferences among the Millennial generation'. *BRQ Business Research Quarterly*. https://doi.org/10.1177/23409444221085587

[28] Ng, E.S. and Parry, E. (2016) 'Multigenerational research in human resource management'. *Research in Personnel and Human Resources Management*, 34: 1-41. https://doi.org/10.1108/S0742-730120160000034008

[29] Lyons, S.T., Ng, E.S. and Schweitzer, L. (2014) 'Changing demographics and the shifting nature of careers: Implications for research and human resource development'. *Human Resource Development Review*, 13(2): 181–206. https://doi.org/10.1177/1534484314524201

[30] Ayoobzadeh, M. et al. (2024) 'A tale of two generations: A time-lag study of career expectations'. *Personnel Review*. https://doi.org/10.1108/PR-02-2022-0101

[31] Tåhlin, M. and Westerman, J. (2018) 'Youth employment decline and the structural change of skill'. *European Societies*, 22(1): 47–76. https://doi.org/10.1080/14616696.2018.1552981

[32] Ayoobzadeh, M. et al. (2024) 'A tale of two generations: A time-lag study of career expectations'. *Personnel Review*. https://doi.org/10.1108/PR-02-2022-0101

[33] World Economic Forum (2023) 'The future of jobs report 2023'. www.weforum.org/publications/the-future-of-jobs-report-2023/

[34] Gini, A. (1998) 'Work, identity and self: How we are formed by the work we do'. Journal of business ethics, 17(7): 707-714.

[35] Kelly, P. (2023) 'AI is coming for our jobs! Could universal basic income be the solution?' *The Guardian*, 16 November. www.theguardian.com/global-development/2023/nov/16/ai-is-coming-for-our-jobs-could-universal-basic-income-be-the-solution

[36] World Economic Forum (2023) 'The future of jobs report 2023'. www.weforum.org/publications/the-future-of-jobs-report-2023

[37] Ahmed, S.K. et al. (2024) 'Antimicrobial resistance: Impacts, challenges, and future prospects'. *Journal of Medicine, Surgery, and Public Health*, 2: 100081. https://doi.org/10.1016/j.glmedi.2024.100081

[38] World Health Organization (2024) 'WHO Director-General's speech at the World Governments Summit – 12 February 2024'. 12 February. www.who.int/director-general/speeches/detail/who-director-general-s-speech-at-the-world-governments-summit---12-february-2024

[39] Salam, M.A. et al. (2023) 'Antimicrobial resistance: A growing serious threat for global public health'. *Healthcare* (Basel), 11(13): 1946. https://doi.org/10.3390/healthcare11131946

[40] World Economic Forum (2023) 'The future of jobs report 2023'. www.weforum.org/publications/the-future-of-jobs-report-2023

[41] WIPO (n.d.) 'IP facts and figures'. www.wipo.int/en/ipfactsandfigures/patents (retrieved 13 July 2024)

[42] EPO and EUIPO (2022) 'IPR-intensive industries and economic performance in the European Union'. https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/IPR-intensive_industries_and_economic_in_EU_2022/2022_IPR_Intensive_Industries_FullR_en.pdf

[43] Ibid.

[44] Nicora, H. (n.d.) 'The IP office of the future: What role for SMEs?' INTA. www.wipo.int/edocs/mdocs/patent_policy/en/wipo_webinar_wso_2021_5/wipo_webinar_wso_2021_5_t3.pdf (retrieved 20 August 2024)

[45] INTA (2022) 'IP in space'. www.inta.org/wp-content/uploads/public-files/perspectives/industry-research/221207_ipinspace_report.pdf

[46] Alex (2022) 'Multiple streams of income is the way of the future'. Medium, 28 August. https://medium.com/predict/multiple-streams-of-income-c7f1a7d941e

[47] World Economic Forum (2023) 'The Future of Jobs Report 2023'. Geneva, World Economic Forum. www.weforum.org/publications/the-future-of-jobs-report-2023

[48] Grossmann, I. et al. (2013) 'A route to well-being: Intelligence versus wise reasoning'. *Journal of Experimental Psychology*: *General*, 142(3): 944–953. https://doi.org/10.1037/a0029560

[49] Stanovich, K.E., West, R.F. and Toplak, M.E. (2013) 'Myside bias, rational thinking, and intelligence'. *Current Directions in Psychological Science*, 22(4): 259–264. https://doi.org/10.1177/0963721413480174

[50] Henrich, J. et al. (2001) 'In search of homo economicus: Behavioral experiments in 15 small-scale societies'. *American Economic Review*, 91(2): 73–78. https://doi.org/10.1257/aer.91.2.73

[51] Thaler, R.H. (1986) 'The psychology and economics conference handbook: Comments on Simon, on Einhorn and Hogarth, and on Tversky and Kahneman'. *Journal of Business*, 59(4): S279–S284. www.jstor.org/stable/2352760

[52] Grossmann, I. (2020) 'Folk standards of sound judgment: Rationality versus reasonableness'. *Science Advances*, 6(2). https://doi.org/10.1126/sciadv.aaz0289

[53] Grossmann, I. et al. (2020) 'The science of wisdom in a polarized world: Knowns and unknowns'. *Psychological Inquiry*, 31(2): 103–133. https://doi.org/10.1080/1047840X.2020.1750917

[54] Grossmann, I. and Brienza, J. (2018) 'The strengths of wisdom provide unique contributions to improved leadership, sustainability, inequality, gross national happiness, and civic discourse in the face of contemporary world problems'. *Journal of Intelligence*, 6(2), 22. https://doi.org/10.3390/jintelligence6020022

[55] Mellers, B. et al. (2015) 'Identifying and cultivating superforecasters as a method of improving probabilistic predictions'. *Perspectives on Psychological Science*, 10(3), 267–281. https://doi.org/10.1177/174569161557

[56] Brienza, J.P., Kung, F.Y.H. and Chao, M.M. (2021) 'Wise reasoning, intergroup positivity, and attitude polarization across contexts'. *Nature Communications*, 12, 3313. https://doi.org/10.1038/s41467-021-23432-1

[57] Koetke, J., Schumann, K. and Porter, T. (2022) 'Intellectual humility predicts scrutiny of COVID-19 misinformation'. *Social Psychological and Personality Science*, 13(1): 277–284. https://doi.org/10.1177/1948550620988242

[58] Peetz, J. and Grossmann, I. (2021) 'Wise reasoning about the future is associated with adaptive interpersonal feelings after relational challenges'. *Social Psychological and Personality Science*, 12(5), 629–637. https://doi.org/10.1177/1948550620931985

[59] Grossmann, I., Brienza, J.P. and Bobocel, D.R. (2017) 'Wise deliberation sustains cooperation'. *Nature Human Behaviour*, 1, 0061. https://doi.org/10.1038/s41562-017-0061

[60] Porter, T. et al. (2022) 'Predictors and consequences of intellectual humility'. *Nature Reviews Psychology*, 1, 524–536. https://doi.org/10.1038/s44159-022-00081-9

[61] Grossmann, I. et al. (2020) 'The science of wisdom in a polarized world: Knowns and unknowns'. *Psychological Inquiry*, 31(2), 103–133. https://doi.org/10.1080/1047840X.2020.1750917

[62] Grossmann, I. (2017) 'Wisdom and how to cultivate it'. *European Psychologist*, 22(4), 233–246. https://doi.org/10.1027/1016-9040/a000302

[63] Grossmann, I. et al. (2021) 'Training for wisdom: The distanced-self-reflection diary method'. *Psychological Science*, 32(3), 381–394. https://doi.org/10.1177/0956797620969170

[64] Grossmann, I., Dorfman, A. and Oakes, H. (2020) 'Wisdom is a social-ecological rather than person-centric phenomenon'. *Current Opinion in Psychology*, 32, 66–71. https://doi.org/10.1016/j.copsyc.2019.07.010

[65] Huynh, A.C. and Grossmann, I. (2018) 'A pathway for wisdom-focused education'. *Journal of Moral Education*, 49(1), 9–29. https://doi.org/10.1080/03057240.2018.1496903

[66] Pota, V. (2022) 'Opinion: What governments can learn from schools to solve the global education crisis'. World Economic Forum, 22 September. www.weforum.org/agenda/2022/09/global-education-crisis-governments-teachers

[67] United Nations (n.d.) 'Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all'. https://sdgs.un.org/goals/goal4 (retrieved 13 July 2024)

[68] United Nations Secretary-General (n.d.) 'Special event on transforming education'. https://sdgs.un.org/sites/default/files/2024-06/High-Level%20Meeting%20on%20TE%20-%20Concept%20Note_FINAL.pdf?_gl=1*1pox57*_ga*NTIwMjEyNzEwLjE3MTcxMjgzMDI.*_ga_TK9BQL5X7Z*MTcxOTk5MTQ0Mi41LjAuMTcxOTk5MTQ0Mi4wLjAuMA (retrieved 20 August 2024)

[69] Kasanda, P., Devereux, A. and Halcoussis, S. (2024) 'Dispute resolution clauses: The case for international arbitration in cross-border M&A'. Clyde&Co, 30 April. www.clydeco.com/en/insights/2024/04/dispute-resolution-clauses-the-case-for-internatio

[70] Dewoskin, K. and MacCharles, A. (2024) 'How US–China competition is benefiting the world—and reshaping the global economy'. *Fortune*, 2 July. https://fortune.com/2024/07/02/us-china-competition-benefiting-worldand-global-economy-supply-chains-politics-leadership

[71] Magesh, V. et al. (2024) 'AI on trial: Legal models hallucinate in 1 out of 6 (or more) benchmarking queries'. Stanford University Human-Centered Artificial Intelligence, 23 May. https://hai.stanford.edu/news/ai-trial-legal-models-hallucinate-1-out-6-or-more-benchmarking-queries

[72] United Nations (2023) 'Greater acceptance, participation in International Court of Justice's compulsory jurisdiction key for improving global dispute settlement, Security Council hears'. 12 January. https://press.un.org/en/2023/sc15171.doc.htm

[73] Norton, L.P. and Blue, C. (2024) 'ESG turns 20: A brief history, and why it's not going away'. *Morningstar*, 22 June. www.morningstar.com/sustainable-investing/esg-turns-20-brief-history-why-its-not-going-away

[74] The Global Compact (2004) 'Who Cares wins: Connecting financial markets to a changing world'. www.unepfi.org/fileadmin/events/2004/stocks/who_cares_wins_global_compact_2004.pdf

[75] Delgado-Ceballos, J. et al. (2023) 'Connecting the Sustainable Development Goals to firm-level sustainability and ESG factors: The need for double materiality'. *BRQ Business Research Quarterly*, 26(1), 2-10. https://doi.org/10.1177/23409444221140919

[76] United Nations (2015) 'Transforming our world: The 2030 Agenda for Sustainable Development'. https://sdgs.un.org/publications/transforming-our-world-2030-agenda-sustainable-development-17981

[77] Baselli, V. (2021) 'Which countries lead on ESG?' *Morningstar*, 22 April. www.morningstar.co.uk/uk/news/211424/which-countries-lead-on-esg.aspx

[78] Bloomberg Intelligence (2024) 'Global ESG assets predicted to hit $40 trillion by 2030, despite challenging environment, forecasts Bloomberg Intelligence'. 8 February. www.bloomberg.com/company/press/global-esg-assets-predicted-to-hit-40-trillion-by-2030-despite-challenging-environment-forecasts-bloomberg-intelligence/

[79] Benuzzi, M., Klaser, K. and Bax, K. (2024) 'Which ESG+F dimension matters most to retail investors? An experimental study on financial decisions and future generations'. *Journal of Behavioral and Experimental Finance*, 41, 100882. https://doi.org/10.1016/j.jbef.2023.100882

[80] Gelb, J. et al. (2023) 'Investors want to hear from companies about the value of sustainability'. McKinsey & Company, 15 September. www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/investors-want-to-hear-from-companies-about-the-value-of-sustainability

[81] Starks, L.T. (2023) 'Presidential address: Sustainable finance and ESG issues—*value* versus *values*'. *Journal of Finance*, 78(4): 1837-1872. https://doi.org/10.1111/jofi.13255

[82] Berg, F., Kölbel, J.F. and Rigobon, R. (2022) 'Aggregate confusion: The divergence of ESG ratings'. *Review of Finance*, 26(6): 1315-1344. https://doi.org/10.1093/rof/rfac033

[83] Avramov, D. et al. (2022) 'Sustainable investing with ESG rating uncertainty'. *Journal of Financial Economics*, 145(2): 642-664. https://doi.org/10.1016/j.jfineco.2021.09.009

[84] Eccles, R. G. (2024). Moving Beyond ESG. Harvard Business Review. https://hbr.org/2024/09/moving-beyond-esg

[85] Benuzzi, M., Klaser, K. and Bax, K. (2024) 'Which ESG+F dimension matters most to retail investors? An experimental study on financial decisions and future generations'. *Journal of Behavioral and Experimental Finance*, 41, 100882. https://doi.org/10.1016/j.jbef.2023.100882

[86] United Nations (n.d.) 'Declaration on Future Generations'. www.un.org/en/summit-of-the-future/declaration-on-future-generations (retrieved 13 July 2024)

[87] Benuzzi, M., Klaser, K. and Bax, K. (2024) 'Which ESG+F dimension matters most to retail investors? An experimental study on financial decisions and future generations'. *Journal of Behavioral and Experimental Finance*, 41, 100882. https://doi.org/10.1016/j.jbef.2023.100882

[88] AI Sweden (n.d.) 'GPT-SW3'. www.ai.se/en/project/gpt-sw3 (retrieved 11 July 2024)

[89] Mohamed bin Zayed University of Artificial Intelligence (2023) 'Meet "Jais", the world's most advanced Arabic large language model open sourced by G42's inception'. 30 August. https://mbzuai.ac.ae/news/meet-jais-the-worlds-most-advanced-arabic-large-language-model-open-sourced-by-g42s-inception/

[90] Porter, J. (2023) 'ChatGPT continues to be one of the fastest-growing services ever'. *The Verge*, 6 November. www.theverge.com/2023/11/6/23948386/chatgpt-active-user-count-openai-developer-conference

[91] United Nations (2022) 'World population prospects 2022: Summary of results'. Department of Economic and Social Affairs. www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/wpp2022_summary_of_results.pdf

[92] Frimpong, E. (2021) 'Global boardroom diversity: Trends and updates from the Diligent Institute'. Corporate Council Business Journal, 28 October. https://ccbjournal.com/articles/global-boardroom-diversity-trends-and-updates-from-the-diligent-institute

[93] Barter, N. and Omura, A. (2024) 'Corporate climate policy and CEO age: Age matters'. SSRN. http://dx.doi.org/10.2139/ssrn.4767698

[94] Berger, B.M. (1960) 'How long is a generation?' *British Journal of Sociology*, 11(1), 10–23. https://doi.org/10.2307/587038

[95] European Environment Agency (n.d.) 'Historical and projected global population'. www.eea.europa.eu/data-and-maps/daviz/data-visualization-40 (retrieved 12 June 2024)

[96] Ibid.

[97] Future Generations Commissioner for Wales (n.d.) www.futuregenerations.wales (retrieved 11 July 2024)

[98] U.AE (2024) 'Youth'. 6 June. https://u.ae/en/information-and-services/social-affairs/youth

[99] Eduskunta Riksdagen (n.d.) 'Committee for the Future'. www.eduskunta.fi/EN/valiokunnat/tulevaisuusvaliokunta/Pages/default.aspx (retrieved 11 July 2024)

[100] Sustainable Development Directorate, Malta (n.d.) 'Guardian of Future Generations'. https://sustainabledevelopment.gov.mt/guardian-of-future-generations/ (retrieved 11 July 2024)

[101] Office of the Commissioner for Fundamental Rights of Hungary (n.d.) 'The role of the Ombudsman'. www.ajbh.hu/web/ajbh-en/the-role-of-the-ombudsman (retrieved 11 July 2024)

[102] Good Energy (n.d.) 'The good future board'. www.goodenergy.co.uk/the-good-future-board/ (retrieved 11 July 2024)

[103] Pentland Brands (2023) 'Pentland x the people to bring youth insights into the boardroom'. 25 July. https://pentlandbrands.com/pentland-the-people-bring-youth-insights-into-boardroom/

[104] The Body Shop (n.d.) 'Introducing our youth collective'. www.thebodyshop.com/en-sg/about-us/activism/beseenbeheard/our-youth-collective/a/a00076 (retrieved 11 July 2024)

[105] Barter, N. and Fleming, C. (2023) *Future Normal: 8 Questions to Create Businesses Your Children Will Be Proud Of*. Abingdon, Routledge.

[106] Jonas, H. (1985) *The Imperative of Responsibility*. Chicago: University of Chicago Press, 7.

[107] Schleicher, A. (2018) 'World Class: How to build a 21st-century school system'. OECD Publishing. https://doi.org/10.1787/9789264300002-en

[108] Pane, J.F. et al. (2015) 'Continued progress: Promising evidence on personalized learning'. RAND Corporation. www.rand.org/pubs/research_reports/RR1365.html

[109] Big Picture Learning (2020). www.bigpicture.org

[110] World Bank (2019) 'Ending Learning Poverty: What will it take?'. https://documents1.worldbank.org/curated/en/395151571251399043/pdf/Ending-Learning-Poverty-What-Will-It-Take.pdf

[111] Luckin, R. et al. (2016) *Intelligence Unleashed: An Argument for AI in Education*. London: Pearson.

[112] Organisation for Economic Co-operation and Development (n.d.) 'Future of Education and Skills 2030'. www.oecd.org/en/about/projects/future-of-education-and-skills-2030.html (retrieved 13 July 2024)

[113] Hargreaves, A. and Fullan, M. (2012) *Professional Capital: Transforming Teaching in Every School*. New York: Teachers College Press.

[114] Binkley, M. et al. (2012) 'Defining twenty-first century skills'. In Griffin, P., McGaw, B. and Care, E. (eds) *Assessment and Teaching of 21st Century Skills*. Cham: Springer, 17–66.

[115] Caldwell, G.S. et al. (2021) 'Immobilising microalgae and cyanobacteria as biocomposites: New opportunities to intensify algae biotechnology and bioprocessing'. *Energies*, 14(9), 2566. https://doi.org/10.3390/en14092566

[116] Moro, C., Francioso, V. and Velay-Lizancos, M. (2021) 'Modification of CO_2 capture and pore structure of hardened cement paste made with nano-TiO_2 addition: Influence of water-to-cement ratio and CO_2 exposure age'. *Construction and Building Materials*, 275, 122131. https://doi.org/10.1016/j.conbuildmat.2020.122131

[117] Zhou, X. et al. (2023) 'Environmental and human health impacts of volatile organic compounds: A perspective review'. *Chemosphere*, 313, 137489. https://doi.org/10.1016/j.chemosphere.2022.137489

[118] McDaniel, C.S. et al. (2006) 'Enzyme-based additives for paints and coatings'. *Progress in Organic Coatings*, 55(2), 182-188. https://doi.org/10.1016/j.porgcoat.2005.09.013

[119] Rabajczyk, A. et al. (2021) 'Self-cleaning coatings and surfaces of modern building materials for the removal of some air pollutants'. *Materials*, 14(9), 2161. https://doi.org/10.3390/ma14092161

[120] Cole, G.M. et al. (2023) 'Integrated techno-economic and life cycle assessment of a novel algae-based coating for direct air carbon capture and sequestration'. *Journal of CO_2 Utilization*, 69, 102421. https://doi.org/10.1016/j.jcou.2023.102421

[121] Dębowski, M. et al. (2021) 'Immobilized microalgae-based photobioreactor for CO_2 capture (IMC-CO2PBR): Efficiency estimation, technological parameters, and prototype concept'. *Atmosphere*, 12(8), 1031. https://doi.org/10.3390/atmos12081031

[122] Caldwell, G.S. et al. (2021) 'Immobilising microalgae and cyanobacteria as biocomposites: New opportunities to intensify algae biotechnology and bioprocessing'. *Energies*, 14(9), 2566. https://doi.org/10.3390/en14092566

[123] Sproles, A.E. et al. (2021) 'Recent advancements in the genetic engineering of microalgae'. *Algal Research*, 53, 102158. https://doi.org/10.1016/j.algal.2020.102158

[124] Nguyen, V.-T. et al. (2024) 'Emerging revolving algae biofilm system for algal biomass production and nutrient recovery from wastewater'. *Science of the Total Environment*, 912, 168911. https://doi.org/10.1016/j.scitotenv.2023.168911

[125] United Nations (n.d.) 'For a livable climate: Net-zero commitments must be backed by credible action'. www.un.org/en/climatechange/net-zero-coalition (retrieved 11 July 2024)

[126] Hoteit, L. et al. (2024) 'The next 50 years of work'. BCG, 22 March. www.bcg.com/publications/2024/foreseeing-future-work-opportunities

[127] World Economic Forum (2023) 'The future of jobs report 2023'. www.weforum.org/publications/the-future-of-jobs-report-2023

[128] United Nations (2024) 'Pact for the Future' (Rev. 2, draft). www.un.org/sites/un2.un.org/files/pact_for_the_future_-_rev.2_-_17_july.pdf (retrieved 28 August 2024)

[129] United Nations (n.d.) 'Declaration on Future Generations' (Rev. 3, draft). www.un.org/sites/un2.un.org/files/sotf-declaration-on-future-generations-rev3.pdf (retrieved 28 August 2024)

[130] U.AE (2024) 'Youth'. 6 June. https://u.ae/en/information-and-services/social-affairs/youth

[131] Organisation for Economic Co-operation and Development (n.d.) 'Youth'. www.oecd.org/en/topics/policy-issues/youth.html (retrieved 13 July 2024)

[132] United Nations Department of Economic and Social Affairs (n.d.) 'Definition of youth'. www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf (retrieved 13 July 2024)

[133] The Future Generations Commissioner for Wales (n.d.) 'Well-being of Future Generations (Wales) Act 2015'. www.futuregenerations.wales/about-us/future-generations-act/ (retrieved 28 August 2024)

[134] Haley, M. (2021) 'Introducing the Seventh Generation Principle – to promote true sustainability'. The Seventh Generation, 26 September. https://theseventhgeneration.org/blog-the-seventh-generation-principle/

[135] Far & Away Adventures (n.d.) 'Things you need to know about Indigenous people in Tahiti'. https://farandawayadventures.com/things-you-need-to-know-about-indigenous-people-in-tahiti/ (retrieved 13 July 2024)

[136] The Cabinet, United Arab Emirates (n.d.) 'UAE Centennial Plan 2071'. https://uaecabinet.ae/en/uae-centennial-plan-2071 (retrieved 13 July 2024)

[137] Quattrucci, L. (2017) 'The future is becoming a burden on the young. These three principles could change that'. World Economic Forum, 9 January. www.weforum.org/agenda/2017/01/the-future-is-becoming-a-burden-on-the-young-these-three-principles-could-change-that/

[138] Georgieva, K. (2024) 'Economic possibilities for my grandchildren'. International Monetary Fund, June. www.imf.org/en/Publications/fandd/issues/2024/06/Economic-possibilities-for-my-grandchildren-Kristalina-Georgieva

[139] High-Level Committee on Programmes (2023) 'Discussion paper: Duties to the future through an intergenerational equity lens'. United Nations System, 13 February. https://unsceb.org/sites/default/files/2023-02/HLCP%20Duties%20to%20the%20Future%20discussion%20paper%20%28public%29.pdf

[140] Future Generations Commissioner for Wales (n.d.) 'Future Generations Commissioner for Wales'. www.futuregenerations.wales/about-us/future-generations-commissioner/ (retrieved 13 July 2024)

[141] Office of the Commissioner for Fundamental Rights of Hungary (n.d.) 'The role of the Ombudsman'. www.ajbh.hu/web/ajbh-en/the-role-of-the-ombudsman (retrieved 13 July 2024)

[142] Sustainable Development Directorate, Malta (n.d.) 'Guardian of Future Generations'. https://sustainabledevelopment.gov.mt/guardian-of-future-generations/ (retrieved 11 July 2024)

[143] Azerbaijan.az (n.d.) 'Youth Policy'. https://azerbaijan.az/en/information/609 (retrieved 13 July 2024)

[144] Lagos State (n.d.) 'Ministry of Youth and Social Development'. https://youthandsocialdevelopment.lagosstate.gov.ng (retrieved 13 July 2024)

[145] Government of Canada (2024) 'Prime Minister's Youth Council'. 24 May. www.canada.ca/en/campaign/prime-ministers-youth-council.html

[146] Dutch National Youth Council (NJR) (n.d.) 'The springboard of the new generation'. www.njr.nl/en/ (retrieved 13 July 2024)

[147] Centre for Strategic Futures (n.d.). www.csf.gov.sg (retrieved 13 July 2024)

[148] Government of Canada (2024) 'Sustainable development vision and principles'. 22 March. www.canada.ca/en/environment-climate-change/services/climate-change/federal-sustainable-development-strategy/sustainable-development-vision-principles.html

[149] World Health Organization (2021) 'Mental health of adolescents'. 17 November. www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

[150] World Economic Forum (2020) 'A Global framework for youth mental health: Investing in future mental capital for individuals, communities and economies'. www3.weforum.org/docs/WEF_Youth_Mental_Health_2020.pdf

[151] World Health Organization (2024) 'Physical activity'. 26 June. www.who.int/news-room/fact-sheets/detail/physical-activity

[152] Statista (2024) 'Percentage of people worldwide who reported negative effects on wellbeing from feelings of loneliness in 2022, by age group'. www.statista.com/statistics/1400807/percentage-of-people-who-reported-feelings-of-loneliness-by-age-group-worldwide/

[153] United Nations Children's Fund (2023) 'Bridging the gender digital divide: Challenges and an urgent call for action for equitable digital skills development'. https://data.unicef.org/wp-content/uploads/2023/05/Bridging-the-Gender-Digital-Divide-1.pdf

[154] Mayo Clinic (2024) 'Teens and social media use: What's the impact?' 18 January. www.mayoclinic.org/healthy-lifestyle/tween-and-teen-health/in-depth/teens-and-social-media-use/art-20474437

[155] Gardner, C. (2023) 'Study probes connection between excessive screen media activity and mental health problems in youth'. Yale School of Medicine, 21 March. https://medicine.yale.edu/news-article/yale-study-probes-connection-between-excessive-screen-media-activity-and-mental-health-problems-in-youth/

[156] UBS (2023) 'How the data universe could grow more than 10 times from 2020 to 2030'. 28 July. www.ubs.com/us/en/wealth-management/insights/market-news/article.1596329.html

[157] We are Social media & Meltwater (2024). 'Digital 2024 global overview report'. https://datareportal.com/reports/digital-2024-global-overview-report

[158] United Nations Environment Programme (2020) 'How to feed 10 billion people'. 13 July. www.unep.org/news-and-stories/story/how-feed-10-billion-people

[159] UNICEF (n.d.) 'Water Scarcity'. https://www.unicef.org/wash/water-scarcity#:~:text=Half%20of%20the%20world%27s%20population,of%20extremely%20high%20water%20stress. (retrieved 28 August 2024)

[160] Save the Children (n.d.) 'The climate crisis'. www.savethechildren.org/us/what-we-do/emergency-response/climate-change (retrieved 13 July 2024)

[161] The Lancet (2021) 'Climate anxiety in children and young people and their beliefs about government responses to climate change: a global survey'. www.thelancet.com/pdfs/journals/lanplh/PIIS2542-5196(21)00278-3.pdf

[162] United Nations (n.d.) '*A Future with AI: Voices of Global Youth report launched*'. https://unite.un.org/news/future-ai-voices-global-youth-report-launched (retrieved 13 July 2024)

[163] American College of Obstetricians and Gynecologists (2022) 'Cord blood banking'. July. www.acog.org/womens-health/faqs/cord-blood-banking

ABOUT THE DUBAI FUTURE FOUNDATION

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DUBAI FUTURE FOUNDATION

The Dubai Future Foundation aims to realise the vision of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai, for the future of Dubai and consolidate its global status as a leading city of the future. In partnership with its partners from government entities, international companies, start-ups and entrepreneurs in the UAE and around the world, the Dubai Future Foundation drives joint efforts to collectively imagine, design and execute the future of Dubai.

Under the supervision and with the support of His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Chairman of the Executive Council of Dubai and Chairman of the Board of Trustees of the Dubai Future Foundation, the Dubai Future Foundation works on a three-pronged strategy: to imagine, design and execute the future. It does this through the development and launch of national and global programmes and initiatives, preparing plans and strategies for the future, issuing foresight reports and supporting innovative and qualitative projects. These contribute to positioning Dubai as a global capital for the development and adoption of the latest innovative solutions and practices to serve humanity.

The Dubai Future Foundation focuses on identifying the most prominent challenges facing cities, communities and sectors in the future and transforming them into promising growth opportunities by collecting and analysing data, studying global trends and keeping pace with, and preparing for, rapid changes. It is also looking at future sectors, their integration and the reshaping of current industries.

The Dubai Future Foundation oversees many pioneering projects and initiatives, such as the Museum of the Future, Area 2071, UAE Centre for the Fourth Industrial Revolution, Dubai Future Accelerators, One Million Arab Coders, Dubai Future District, Dubai Future Solutions, Dubai Future Forum and Dubai Metaverse Assembly. Its many knowledge initiatives and future design centres contribute to building specialised local talents for future requirements and empowering them with the necessary skills to contribute to the sustainable development of Dubai.

ABOUT THE SOCIAL AND HUMAN SCIENCES OF UNESCO

In a complex world confronted with major societal transitions (climate, digital, demographics, inequalities), UNESCO's Social and Human Sciences Sector leverages the contributions that these sciences can make to build inclusive and sustainable economies and societies. This is done through the management of social transformations and strengthening the science-policy nexus, the ethical governance of emerging technologies, particularly artificial intelligence, neurotechnology and climate engineering, and by fostering trust in science and the safety of scientists. The Sector also addresses racism and discrimination, forges intercultural dialogue, empowers youth and women, and deploys the ethical and social impact of sports.

In its role as a global laboratory of ideas, UNESCO has championed Futures Literacy & Foresight since 2012. Rooted in the discipline of anticipation, Futures Literacy & Foresight can improve our capacity to shape policies and systems that withstand shocks and create long-term resilience. UNESCO is at the forefront of social transformation, not only by enhancing foresight capacity-building, research, and awareness among Member States, but also by contributing to a UN-wide shift towards strategic foresight. As the coordinator of the UN Strategic Foresight Community of Practice and a Core Group Partner of the UN Futures Lab Network, UNESCO collaborates closely with the UN Futures Lab and the Executive Office of the Secretary-General to institutionalize long-term thinking, enhance risk management, and make foresight integral to planning and decision-making across the UN system.

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