

FOSTERING SOCIAL INNOVATION TO ADDRESS HUMANITY'S CHALLENGES

A Report by Cheung Kong Graduate
School of Business (CKGSB)



CKGSB
长|江|商|学|院
CHEUNG KONG GRADUATE
SCHOOL OF BUSINESS



Introduction

At Cheung Kong Graduate School of Business (CKGSB), we go beyond the traditional boundaries of business schools to foster collaboration among businesses, governments, multilateral institutions, non-profit organizations and civil society to develop and deploy effective and innovative solutions to humanity's most challenging issues. Working with partners across the international business sector, global think tanks, multilateral organizations and academia, this report aims to capture some of these unique and interdisciplinary efforts and diverse perspectives on social innovation trends and outlook.

The report begins with an introduction of social innovation from CKGSB's Founding Dean and Professor of China Business and Globalization, Xiang Bing, and the United Nations' China Resident Coordinator, Siddharth Chatterjee. There is no consensus on the definition of social innovation but the central tenet is clear. How can institutions and organizations work together to solve humanity's biggest challenges? The next three sections of the report are dedicated to answering this question, through the perspectives of academia, international organizations and businesses.

As China's leading research-driven business school, the first section features CKGSB faculty and partner schools as they provide in-depth research and analyses with frameworks for implementation to potential solutions. The second section showcases the viewpoints from various international partners who have been devoting themselves to solving issues that go beyond national boundaries and working with educational institutions such as CKGSB to create greater synergy. The third section showcases businesses, one of the major building blocks to combating societal issues and one that CKGSB believes can be shaped for the better through transformative business leaders with a global vision, sense of social responsibility, innovative mindset, and ability to lead with empathy and compassion. Finally, the report ends with two case studies led by CKGSB utilizing socially innovative ways to improve access to basic services in remote communities and alleviating poverty in China's most deprived areas.

Drawing on the multitude of perspectives, examples and ideas, this report offers practitioners and organizations a better understanding of how social innovation can be applied across sectors, why it matters and what global thought leaders are doing to enact change.

Table of Contents

Introduction

- | | |
|--|----------|
| 01 Message from the Dean | 6 |
| Xiang Bing, Founding Dean and Professor of China Business and Globalization, CKGSB | |
| 02 Achieving the SDGs in a Post-pandemic World: The Role of Social Innovation | 9 |
| Siddharth Chatterjee, Resident Coordinator in China, United Nations | |
-

Academia

As institutions fostering talents who define our future and tackle humanity's challenges, universities and schools reflect on societal issues and provide in-depth analyses and solutions in this section.

- | | |
|--|-----------|
| 03 In-depth Analysis: Seeking Common Prosperity from a Global Perspective | 13 |
| Xiang Bing, Founding Dean and Professor of China Business and Globalization, CKGSB | |
| 04 Making Social Innovation Happen: How to Lead for Impact | 22 |
| Richard HILL, Head of Knowledge & Learning, Møller Institute, Churchill College, University of Cambridge | |
| 05 Developing 'Business for Good' in China | 27 |
| Zhu Rui (Juliet), Professor of Marketing and Director of the Social Innovation and Business for Good Centre, CKGSB | |
| 06 Why We Have Been Understating the Costs of Air Pollution | 31 |
| Brian Viard, Professor of Economics, CKGSB | |
| 07 Chasing Carbon Neutrality | 35 |
| Liu Jing, Professor of Accounting and Finance, CKGSB,
and Duan Lei, Senior Researcher, Business Scholars Program, CKGSB | |
| 08 Changing Consumption and Production Behaviors | 40 |
| Sun Baohong, Dean's Distinguished Chair Professor of Marketing, CKGSB | |
| 09 Why Social Innovation Matters? | 44 |
| Bo Ji, Chief Representative of CKGSB Europe and Assistant Dean, CKGSB | |
-

International Organizations

International organizations have been devoting themselves to solving issues that go beyond national boundaries and working with all parties to create greater synergy.

10 From Poverty Reduction to Common Prosperity: Challenging Reforms, Big Upside	50
Martin Raiser, Country Director for China and Mongolia, and Director for Korea, World Bank	
11 Philanthropy in China	53
Jiakai Yuan, Vice President and China Chief Representative, United Way Worldwide	
12 Social Innovation is Key to Safe E-Waste Disposal	57
Frank-Jürgen Richter, Chairman, Horasis	
13 Reducing Our Global Footprint	62
Nathalie Bastianelli, Founder of WeBelongtoChange	
14 A Step Towards Mutual Prosperity: Putting Purpose into Practice: The Economics of Mutuality	66
Bruno Roche, Founder, Economics of Mutuality	

Businesses

One of the major building blocks to combating societal issues, companies are nowadays expected to demonstrate corporate social responsibility, as many issues facing humanity cannot be solved without companies doing their part. However, is it possible for companies to solve these issues alone?

15 The Future of Green Finance and Impact Investment	71
Gao Erji, Vice President, Caixin Media	
16 Bridging the Environmental Sustainability Gap	75
Alfredo Montufar-Helu, Beijing Director, Economist Intelligence Corporate Network, The Economist Group	
17 Radical innovation – Only Half the Story	79
Mauricio Bermudez Neubauer, Managing Director, Accenture	
18 Infrastructure and Climate Change: The Role of Sustainable Infrastructure in the Transition to Low Carbon Economies	83
Gregory Hodgkinson, Senior Advisor and Former Chairman, Arup Group	
19 Leading a Lower Carbon Future	87
Fernando Vallina, Chairman, ExxonMobil (China) Investment Co., Ltd.	
20 Creating a Sustainable World One Product at a Time	92
Jun Shen, Unilever Homecare North Asia R&D and Global Innovation Hub Director and Senior Engineer	
21 How Furniture Manufacturing Can Contribute to Net-Zero	96
Zhao Xiaobin, Co-Founder and CEO, Cambond	

22 What I Learnt from the Pandemic about Education	99
Lina Getachew Ayenew, Founder and CEO, Education for Ethiopia	
23 Making Social Responsibility a Competitive Advantage for Multinationals in China	102
Callum Douglas, Corporate Responsibility Director, PwC	

Case Studies

Case Study: CKGSB's Ji'an Poverty Alleviation Initiative	107
To enhance public welfare and give back to society, CKGSB initiated a three-project campaign in 2017 to alleviate poverty in Ji'an, an impoverished district in Jiangxi, China. CKGSB used its core business – education and business management – in creative, socially innovative ways to improve access to basic services of the community, reduce the impact of disasters and raise the living standard in Ji'an.	
Case Study: CKGSB's Goji Berry Project	110
During a trip to the Gobi Desert Challenge in 2015, a group of CKGSB professors, alumni, students and staff voluntarily helped the local villagers sell their unique local Goji berries using innovative business strategies to design, market, distribute and sell their product, raising the annual income of all in the community by nearly 35% and helping lift them out of poverty in a dignified way.	

Acknowledgements	117
About Cheung Kong Graduate School of Business (CKGSB)	118

01

Message from the Dean

Xiang Bing

Founding Dean and Professor of China Business and Globalization, CKGSB

Dr. Xiang Bing is the Founding Dean and Professor of China Business and Globalization at Cheung Kong Graduate School of Business (CKGSB).

Dr. Xiang is a leading authority on China business. His research interests include the reform of state-owned enterprises, economic disruption, innovation and the role of the private sector in China. His insights on the innovations in China, globalization of Chinese companies, China's development models, global implications of China's transformation, social innovation, economic disruption, China-US relations, global trade and investment systems and global governance have been widely acclaimed.





Today, we find ourselves in an era of major transformations—including technological, economic, social, political and geopolitical disruptions—coupled with dysfunctional global governance, rising protectionism, nationalism and populism, as well as reconfiguring global investment and trading systems. Humanity has been confronted with serious challenges, such as income and wealth inequality, diminishing social mobility, and climate change, which are difficult to address partly due to collective myopia. Meanwhile, the COVID-19 pandemic has only made these challenges more pertinent and urgent. In this era of tectonic changes, business schools have an unshakable responsibility in helping individuals and institutions (companies and NGOs) to better navigate through these turbulent times, and to make the world a better place both economically and socially.

Since our inception in November 2002, Cheung Kong Graduate School of Business (CKGSB) has been innovating beyond the traditional boundaries of business education to play a catalyst role in addressing some of these societal and environmental challenges. Our mission is to cultivate transformative business leaders with a global vision, sense of social responsibility, innovative mindset, and ability to lead with empathy and compassion. In this regard, CKGSB has been expanding the traditional focal points of business schools and the notion of social responsibility by fostering social innovation, which we define as catalysing the collaboration among businesses,

governments, multilateral institutions, non-profit organizations and civil society to develop and deploy effective and innovative solutions in addressing humanity's most challenging issues.

Our unique experiments with social innovation start from our pioneering efforts to systematically incorporate the humanities—such as history, religion and philosophy—into core business curricula starting from 2005. Our introduction of the humanities has been motivated by the following considerations. Firstly, on the individual level, we hope to inspire business leaders to aspire to not just a 'rich' life, but also an 'enriched' and even 'enlightened' life. Secondly, we believe that the humanities—particularly courses engaging global history, religion and different philosophical traditions—are essential for the business leaders of today and tomorrow to manage global and diverse teams. Lastly, the humanities can help mitigate humanity's collective myopia, and foster a long-term vision and a broader view of business for the greater good.

At CKGSB, we inspire students to focus on the whole wealth cycle—not only to learn how to better compete and collaborate, but also to focus on why they do business and what to do with their wealth for the greater good. Hence, since 2010, we have been requiring our EMBA students to complete 48 hours of community and philanthropy work (equivalent to 6 days of course work), in order to graduate. This initial experiment with our EMBA students was later



extended to all degree programs at CKGSB in 2012. As a result, our students have cumulatively dedicated more than 165,000 hours of work to the community.

In 2017, we started offering a compulsory social innovation module, because we believe that key issues

humanity faces today cannot be solely addressed by the business, government or non-profit sector alone, but rather require collaboration among all parties to effectively address them.

"We believe that key issues humanity faces today cannot be solely addressed by the business, government or non-profit sector alone, but rather require collaboration among all parties to effectively address them."

This is the reason we promote collaboration across government, businesses, NGOs, civil society and international organizations by experimenting with social innovation. In 2018, social innovation became a required module for all degree programs across our school.

Going forward, we seek to work with schools, businesses, governments, civil society and multilateral institutions worldwide to continue pushing the boundaries of business education and playing a constructive role in addressing

some of the most pressing challenges facing the global community. Particularly in light of climate change and the ramifications of the COVID-19 pandemic, it has become more urgent and imperative for business schools to play a catalyst role in advancing cooperation among the different stakeholders. More than ever, we need globally-minded and socially-responsible business leaders, who can compete with compassion and empathy. We, at CKGSB, will continue to stay positive, future-oriented and innovative in driving that agenda forward.

02

Achieving the SDGs in a Post-pandemic World: The Role of Social Innovation

Siddharth Chatterjee

**Resident Coordinator in China,
United Nations**

Mr. Siddharth Chatterjee took office as the United Nations Resident Coordinator in China on 16 January 2021 and presented his letter of credentials to the President of the People's Republic of China, Xi Jinping, on 14 April 2021. The Resident Coordinator (RC), is the highest ranking representative of the UN Development System. The RC is the designated representative of - and reports to - the UN Secretary-General. Mr. Chatterjee has more than 25 years of experience in international cooperation, sustainable development, humanitarian coordination and peace and security, which he has acquired at the United Nations and externally.





At the turn of the last decade, the momentum around the Sustainable Development Goals (SDGs), the ambitious set of UN objectives for a more just and sustainable future, seemed to be fizzling out, as their scope and complexity made implementation especially hard and costly. When the COVID-19 pandemic hit and political and financial capital got diverted to fronting the health emergency, some feared that the SDGs would not survive. As we learn to coexist with the virus, however, it is possible to see a silver lining: rather than patching up the existing system with all its flaws and shortcomings, the global reset triggered by the pandemic provides the opportunity to “build back better” and realize the future envisioned by the SDGs.

Social innovation plays a critical role to get us there. Defined as the “conceptual, process, product or organizational change which improves the welfare and well-being of individuals and community,” social innovation shares the SDG’s ultimate objective of a better world, and offers a powerful instrument to achieve them.

Take SDG 1, for example, to eradicate poverty in all its forms by 2030. China, the country where I currently serve as the UN Resident Coordinator, has been extremely successful in its fight against poverty, having lifted some 750 million people from it in less than two generations. Challenges, however, remain, especially in bridging a lingering rural/urban divide. However, through rural revitalization, the government is now anchoring social innovation in rural areas by investing heavily in infrastructure, internet penetration and education in those

regions. The private sector is also seeing the potential of social innovation.

Taobao Villages, equipped with technology and infrastructure to engage in e-commerce, have seen their income shooting up since they were first established. Social innovations that are well executed have the potential to yield positive spillover effects. In Lancang Lahu Autonomous County, in China’s Yunnan Province, Zhu Youyong teaches local farmers how to plant potato varieties during the harsh winter season. Undeterred by the initial skepticism, Zhu Yuoyong took to the Pinduoduo ecommerce platform¹ to promote winter potato planting, also looping in thousands of students from the local agricultural university to popularize the initiative. These farmers are now able to sell their produce through ecommerce to different provinces and have significantly improved their incomes and livelihoods².

The UN Country Team in China is also using social innovation to help advance rural revitalization in this country. Through public-private jointly financed business plans and Public-Private-Producer Partnership model, we support inclusive value chain and rural business development, benefiting the most vulnerable groups in rural areas.

What makes social innovation so powerful to help us achieve the SDGs is that it allows us to address the interlinkages that exist across the goals.



"What makes social innovation so powerful to help us achieve the SDGs is that it allows us to address the interlinkages that exist across the goals."

One of the fundamental characteristics of the SDGs is the realization that development is complex. Operating in silos, in the way we have traditionally done to individually tackle each of the economic, environmental, or social dimensions of development challenges, is insufficient, and often counterproductive. Social innovation allows us to address multiple challenges simultaneously, thus hitting more than one goal.

Ending hunger as per SDG 2, for example, requires addressing the root causes such as poverty (SDG 1), which often comes from lack of access to health services (SDG3) or education (SDG 4) or discrimination (SDGs 5, 10 and 16) or unemployment (SDG 8) or from the effects of climate change (SDG 13). As a result, tackling hunger in a rural community requires social innovation and a combination of interventions, including climate-smart agricultural practices, access to agricultural inputs and advisory services, weather-indexed insurance, post-harvest management practices, and vertical linkages to markets.

Social innovation is not only done by government. All resources, public and private, national, and international, need to be brought to bear. The private sector has an especially important role to play, not just for the funds it can contribute but, perhaps more importantly, for its frame of mind, technical capability, and execution ability. Wawira Wanjira is this year's UN Person of the Year in Kenya³, where I last served before my current role.

Through her organization, Food 4 Education, she provides low-cost nutritious meals to thousands of schoolchildren in the country. Her innovative model allows parents to load digital money to electronic wristbands worn by their children, who then use them at school to pay for their meals with a tap-to-eat device.

The potential for achieving the SDGs through social innovation is not limited to rural areas, with much able to be done in cities. Chinese online retailer JD.com has developed an innovative solution to address SDG 12 on Responsible Consumption and Production through a Corporate Social Responsibility initiative. Working with residential communities in Beijing, they teach residents waste sorting⁴ through an application that rewards users for correctly disposing of their urban waste. In addition to SDG 12, this smart use of technology (SDG 9) also educates residents (SDG 4), makes communities sustainable (SDG 11), protects the environment (SDGs 14 and 15), and strengthens compliance with government regulations (SDG 16).

As we redouble our efforts to achieve the SDGs in the face of the pandemic, social innovation provides a formidable tool to build back better and realize a more just and sustainable world by 2030. What remains urgent, and is our debt to posterity, is the concerted efforts to make the next nine years count.

Academia

As institutions fostering talents who define our future and tackle humanity's challenges, universities and schools reflect on societal issues and provide in-depth analyses and solutions in this section.

- | | |
|---|-----------|
| 03 In-depth Analysis: Seeking Common Prosperity from a Global Perspective
Xiang Bing, Founding Dean and Professor of China Business and Globalization, CKGSB | 13 |
| 04 Making Social Innovation Happen: How to Lead for Impact
Richard HILL, Head of Knowledge & Learning, Møller Institute, Churchill College, University of Cambridge | 22 |
| 05 Developing 'Business for Good' in China
Zhu Rui (Juliet), Professor of Marketing and Director of the Social Innovation and Business for Good Centre, CKGSB | 27 |
| 06 Why We Have Been Understating the Costs of Air Pollution
Brian Viard, Professor of Economics, CKGSB | 31 |
| 07 Chasing Carbon Neutrality
Liu Jing, Professor of Accounting and Finance, CKGSB,
and Duan Lei, Senior Researcher, Business Scholars Program, CKGSB | 35 |
| 08 Changing Consumption and Production Behaviors
Sun Baohong, Dean's Distinguished Chair Professor of Marketing, CKGSB | 40 |
| 09 Why Social Innovation Matters?
Bo Ji, Chief Representative of CKGSB Europe and Assistant Dean, CKGSB | 44 |

03

In-depth Analysis: Seeking Common Prosperity from a Global Perspective

Xiang Bing

Founding Dean and Professor of China Business and Globalization, CKGSB

Dr. Xiang Bing is the Founding Dean and Professor of China Business and Globalization at Cheung Kong Graduate School of Business (CKGSB).

Dr. Xiang is a leading authority on China business. His research interests include the reform of state-owned enterprises, economic disruption, innovation and the role of the private sector in China. His insights on the innovations in China, globalization of Chinese companies, China's development models, global implications of China's transformation, social innovation, economic disruption, China-US relations, global trade and investment systems and global governance have been widely acclaimed.



A comparison of the Gini Coefficient of selected countries



Since 1979, the market economy and global free competition has created unprecedented economic development and wealth creation. However, this has also led to massively uneven distribution of income and wealth, a decline in social mobility, and other issues.

Regarding the uneven distribution of income, the United Nations Development Programme's 2020 report, Human Development Report 2019, revealed that in 1980 the average pre-tax income of the top 10% of US citizens was 11 times greater than that of the bottom 40%. By 2017, this gap had become 27 times bigger. In Europe by 2017, the wealth gap has risen from 10 times greater to 12 times.

According to the World Inequality Database, wealth concentration has become even more pronounced. Between 1980 and 2019, the wealth of the top 1% of the US population rose from 23% to 35%, while the proportion of this group's income versus the country's total income increased from 10.5% to 18.8%. During the same period in India, the wealth of the top 1% rose from 7.5% to 21.7%. Between 1980 and 2012, the proportion of the income of this group rose from 12% to 31%.

UN Secretary António Guterres noted in a speech in July 2020 that the 26 richest people in the world own as much wealth as half the global population. Between 1980 and 2016, the world's richest 1% acquired 27% of the total cumulative growth in income.

Throughout the world, developed countries such as France have experienced relatively large social disruption in recent years and this has also occurred in countries like Chile, which is a member of the OECD. One of the reasons for this is the ever-widening wealth gap and the attendant decline of social mobility.

The amount of disruption brought about by technology, together with the impact of the COVID-19 pandemic, has exacerbated the already serious income and wealth gaps, highlighting the urgent need to promote inclusiveness and common prosperity within the global sphere.

In the post-COVID-19 era, some technology giants have led and shaped the transformation from an offline economy to online, making them primary beneficiaries of the epidemic. COVID-19 has accelerated this concentration of wealth. According to statistics released by Forbes, the total amount of wealth held by over 2,200 billionaires all over the world rose by USD \$1.9 trillion in 2020, an average increase of 20% compared with the end of 2019.

In China, data released by the National Bureau of Statistics shows that the domestic Gini coefficient has been on a downward trend since 2008, although the overall range is still within 0.46–0.47. Globally, 0.4 is considered a warning line for the gap between the rich and the poor. When the Gini coefficient exceeds this figure, economies face the risk that it might trigger serious social instability.

Wealth inequality in China is also among the most serious in the world. According to the China Development Report issued by Peking University in 2015, the top 1% of households in China own about one-third of the country's property.

In response to the unequal distribution of income and wealth, the Fifth Plenary Session of the 19th Central Committee of the Communist Party of China listed "promoting common prosperity" across the country as a very important task of its 14th Five-Year Plan.

President Xi Jinping has emphasized in many speeches that the promotion of common prosperity for the whole nation must be given more importance: "Promoting common prosperity for all people is an arduous, long-term task. It is necessary to select some regions where we can trial this initially [to] demonstrate the results." The Chinese government recently decided to support the

high-quality development in the province of Zhejiang as a model of common prosperity.

China's promotion of common prosperity is of strategic significance to the stability and long-term development of its economy and social harmony. Its experience in this regard could also demonstrate workable policies for solving the issue of unequal distribution of wealth and income.

Faced with future global changes and the impact of disruptive technology, this article focuses on the issue of how to achieve common prosperity, based on the "Three Distribution" theoretical framework. I will examine and reflect on the experience and lessons learned by different countries and regions from a more global perspective. Further, top-down thinking, the so-called "View the Earth from the Moon", will, I hope, help to explore possible paths for common prosperity and for building more equitable and inclusive societies.

The First distribution by the invisible hand of the market: economic growth and wealth creation need to become more inclusive and balanced.

The first distribution, led by the market mechanism, has a decisive impact on the distribution of income and wealth.

There are many factors that affect income and wealth distribution. These include the political system, the relationship between state and business, whether resource allocation is market-led, industrial policy, the level of education among the population, population demographics, stage of economic development, level of infrastructure development, technological disruption, economic financialization and globalization, anti-monopoly regulations, mechanisms to promote fair competition, and so on.

Chinese and other scholars have done extensive research on the relationship between distribution and inequality of

income and wealth, so I will not repeat it here. Instead, I will focus on two changes that may help reduce the income gap caused by the first distribution: enterprise system and corporate value orientation.

In 1997, I proposed the concept of the enterprise system. Based on the degree of separation of ownership and management, companies can be divided into three categories: family type (Type A), modern enterprise system type (Type B), and state-owned type (Type C). Among them, Type B enterprises display the characteristics of the enterprises that have achieved the separation of management and ownership, dispersed equity, and established a modern corporate governance system.

Based on the degree of separation of ownership and management, companies can be divided into three categories: family type (Type A), modern enterprise system type (Type B), and state-owned type (Type C).

Globally, major developed economies such as the United States, the United Kingdom, Japan, and Germany, have an enterprise system that is basically a combination of Type A and Type B companies. A common feature in these developed

countries is the important role and presence of a batch of those Type B enterprises that transcend family ownership and control, that separate management and ownership.

In Germany, B-type companies include Siemens, BASF, and Bayer, while in Japan there are Toyota, Honda, Sony, and Panasonic. In East Asia, Japan is the only economy to date that has a significant presence of Type B enterprises.

The United States not only has traditional Type B companies such as IBM, General Electric, General Motors, Citi, Coca-Cola, and Procter & Gamble, but also a new generation of Type B enterprises that has sprung from ground-breaking innovations and has leading and important influence on global development, such as Google, Amazon, and Facebook.

Since the start of reform and opening up in 1978, China's social and economic development has been spectacular. From the perspective of the enterprise system, the current Chinese system represents a combination of Type A and Type C companies.

In China, Type C state-owned enterprises play a dominant, even monopolistic role in many industries. At the same time, Type A enterprises have become the backbone of China's gross domestic product (GDP), employment opportunities, and the creation of new jobs.

In the long term, China may need to spur and cultivate the development of Type B enterprises so as to build an enterprise system that combines Type A, Type B, and Type C companies. This could be a necessary condition for deepening its economic transformation and promoting common prosperity. For a detailed discussion of this issue you can refer to my article, "Enterprise System and its Optimization" published in 2019.

In some countries and regions where Type B companies dominate, the income gap between corporate senior management team and ordinary employees remains significant after the first distribution. For example, in 2019 the salary of Google CEO Sundar Pichai was about USD \$280 million, or 1,085 times the average annual salary of a Google employee of USD \$258,000.

According to statistics from Bloomberg in 2018, among listed companies the ratio between the salary of a CEO and the average salary of their employees in the United States was 265:1. The ratio in the United Kingdom was 201:1, in Germany 136:1, and in Japan 58:1. In view of this, narrowing the income gap effectively may require companies to make fundamental shifts in their corporate value orientation.

Globally, there are different orientations in corporate value. The corporate value of "Shareholders First" has been very popular all over the world. Here, the goal of the company is to maximize the interests of shareholders.

Take the United States as an example, where around 6,600 companies had implemented employee stock ownership plans, covering 14 million employees, by 2021. At the same time, corporate management team incentive plans have become the standard. One of the goals is to align the interests of employees, the management team and shareholders, so that employees and management can manage and operate the company more from the interests of shareholders.

In recent years, people from all walks of life in the United States, including business and academia, have reflected on the potential limitations of the value orientation that emphasizes shareholder value maximization.

For example, in 2019 CEOs from 181 US top companies, including Apple and Amazon, jointly signed the "Statement on the Purpose of a Corporation" at Business Roundtable, declaring that creating value for customers, investing in employees, supporting communities, and protecting the environment, plus continuing to protect the interests of shareholders should be a company's five main value targets. This shows how American business leaders have begun to put more emphasis on their social responsibilities and have more diverse and inclusive value orientations.

The corporate value orientation of Japan differs markedly from that of the US. The two countries have very different cultural traditions. Japanese companies generally prioritize the interests of employees, suppliers, and customers, and only then the interests of shareholders. Further, in Germany, the "Rhine Capitalism" model also pays much attention to the interests of employees, instead of the interests of shareholders only.

The above two corporate value orientations from Japan and Germany contrast with the US type of "Anglo-Saxon capitalism", being relatively more inclusive and more balanced. The salary ratios of their CEOs and employees also illustrate this point, as noted above, being much smaller.

In the future, the corporate value orientation will still be diverse globally. However, there is no doubt that it will be more balanced, holistic, long-term and inclusive everywhere, while having more emphasis on social purpose and functions.

In this new era of tectonic global transformations, social conflict is apparent and the expectations of society and government for enterprises' social functions have reached a new height. This further requires companies to redefine corporate social value propositions from a strategic perspective.



Second distribution (visible hand of government): Social security programs need to become more proactive, comprehensive, fair, transparent, and effective.

According to the principle of balancing efficiency and equity, the second distribution led by government is through taxation, social security expenditure, and more. This visible hand attempts to promote equity in societies.

Through the second distribution, the government intends to mitigate the income gap arising from the first distribution, which constitutes an important solution to reducing uneven incomes and wealth.

Countries in the European Union, and especially Nordic countries, are well known for their high-welfare state models. This security system has effectively improved uneven income distribution and maintained good social mobility, helping to achieve more equitable and inclusive economies.

First, I will use the Gini coefficient to compare the impact of the first and second distributions on income inequality in EU and Nordic countries.

Comparing the Gini coefficient after both the first distribution and the second, we can see that the

distribution policies in the Nordic countries and some other European countries have significantly reduced uneven income caused by the first distribution.

According to the latest statistics from the OECD, in 2018 the income difference after the first distribution among major Nordic countries was very significant with the Gini coefficient generally above 0.4. Finland even exceeded 0.5. However, after the second distribution, the Gini coefficient of these countries dropped significantly, to within the range 0.26–0.27, which made them the countries with the smallest income gap in the world.

Meanwhile, according to data from the World Bank, the per capita GDP of these Nordic countries maintains a relatively high level. In 2019, Norwegian per capita GDP was around USD \$70,000. The per capita GDP of Denmark, Sweden and Finland were all above USD \$40,000. These countries are all among the world's high income countries and have achieved common prosperity. They are the successful examples of European social democracy, which differ from American neoliberalism.

Second, from 2014-2018, the EU's total social security expenditure and social security expenditure per capita increased steadily. In 2018, the total amount of social security reached EURO €376.6 billion, and the average maximum amount of social security one person could use per year was EURO €8,435. Social security accounted for 28% of GDP. Although there are differences in economic and social development within the EU, overall it has maintained a relatively high level of social security.

Third, fair income distribution can also promote social mobility. According to the World Economic Forum's 2020 Global Social Mobility Report, the major Nordic countries, including Denmark(1), Norway(2), Finland(3), and Sweden(4), have the highest social mobility ranking in the world. The United States ranks 27th. Among Asian countries, Japan has the best social mobility, ranking 15th. China ranks 45th.

Criticisms of the welfare model have not stopped since its emergence. Critics believe that high welfare encourages people's laziness and weakens the sense of competition, while increasing the financial burden for society and hindering economic growth.

From the analysis of indicators such as the Gini coefficient, which indicates the gap between the rich and the poor, social security and public finance expenditure, and income per person, European countries, including the Nordic countries plus Germany, and Switzerland, have indeed solved the problem of a high Gini coefficient after the first distribution and effectively promoted social equity and social mobility through a strong, active and comprehensive second distribution system. European countries have accumulated some successful practical experience in promoting social harmony and achieving inclusive growth.

The economic and social development of these European countries is advanced and mature, while China is still a developing country. From this perspective, the situation of other such developing countries as Russia and Brazil is more worthy of reference and benchmarking for China.

Education, medical care, and pension expenditure account for a relatively large share of social security in various countries and regions.

China's public education expenditure accounted for only 3.5% of GDP in 2017, which is lower than the world average of 4.5%. It not only has a large gap of more than 6% compared with the Nordic countries, but also is lower than Brazil (6.3%), Russia (4.7%), and India (3.8%).

In health care, China's expenditure accounted for 5.2% of GDP in 2017, which was lower than Brazil (9.5%) and Russia (5.3%), and higher than India (3.5%). By the end of 2019, more than 1.35 billion Chinese people had basic medical insurance, with a participation rate of over 95%. However, medical expenditure per person was relatively low. According to data from the World Health Organization, in 2017, China's expenditure (USD \$841 per capita, per annum) was not only much lower than that of the United States (USD \$10,246 dollars), but also lower than Brazil (USD \$1,424) and Russia (USD \$1,404).

Regarding old age security, according to the OECD statistics, between 2015 and 2016, Brazil and Russia's pension expenditure accounted for around 9.1% of GDP, which was even higher than some developed countries such as the US (4.9%). China's pension expenditure accounted for 4.1% of its GDP.

These statistics show that, at this stage, there is still much room for China to increase its investment in social security programs. Especially when compared with developing countries with a similar GDP per capita, such as Brazil or Russia, China lags behind in spending on education, medical care, pensions, and unemployment benefits.

In recent years, the Chinese government has attached great importance to common prosperity. In the 14th Five-Year Plan, it was proposed to improve the redistribution mechanism and increase the accuracy of adjustments on taxation, social security, and transfer payment.

In the future, we need to have a stronger and more proactive second distribution, build a more comprehensive and equitable social security system that enables the results of reform and developments to benefit all people and achieve common prosperity.

Some of the successful experiences and failures of some European high-welfare countries and some of the practices in BRICs (Brazil, Russia, India and China) are worthy of reference.



Third distribution: Cultivate the culture of donation and charity, and promote social innovation.

The third distribution is to use some of the personal and institutional wealth for public welfare, and for social purpose on the basis of individual volition.

The US is remarkable for the spirit of fraternity and generosity embodied in its donations and charity culture, and the influence of various charitable organizations on its society. Charitable donations and non-governmental charitable organizations have made an important contribution to the relief of the wealth gap after the first and second distributions in the US.

According to the 2020 US Charitable Donations Report, released by Giving USA Foundation in June 2020, the total amount of charitable donations in the US in 2019 was around USD \$449.64 billion, accounting for 2.1% of GDP. After allowing for inflation, this ranked the second highest in its domestic history.

Personal donations are the largest source of charitable donations in the US. In 2019 these accounted for about 68.87 % of donations, totaling USD \$309.7 billion, followed by donations from foundations totaling approximately USD \$75.7 billion. Legacy donations totaled approximately

USD \$43.2 billion and corporate donations amounted to approximately USD \$ 21.1 billion.

In the US, charitable donations have become a general consensus across strata with 70–90% of American families donating every year. Each family donates an average USD \$2,500 per year, which is two to 20 times that of European families.

In 2019, China received a total of RMB 170.144 billion (USD \$26.45 billion) in domestic and foreign donations, of which the mainland received a total of RMB 150.944 billion, accounting for 0.15% of its GDP. The largest source of donations was enterprises (61.71%), followed by individuals (26.40%), social organizations (5.75%), public institutions and religious sites (2.49%), government ministries (1.67%), groups and organizations (0.21%), and others (1.77%).

The gap between China and the US is obvious. US GDP is about 1.45 times that of China, while the total amount of US charitable donations is about 20 times greater.

According to The Philanthropy 50 list in Chronicle of Philanthropy in the US, in 2020 the top 50 philanthropists donated a total of USD \$24.7 billion, compared with USD \$15.8 billion in 2019, an increase of 56%. Such donations were mainly for various projects for climate change, epidemic prevention and control, poverty relief and education.

Andrew Carnegie brought to American entrepreneurs and businessmen the concept that it is shameful to die with wealth. Bill Gates and Warren Buffett initiated the Donation Commitment in 2010, advocating that billionaires across the US donate half of their wealth to charities. According to

statistics from Forbes, by the end of January 2021, the top 25 richest Americans have donated a total amount of USD \$149 billion in their lifetimes.

In the future, the solution to the problems of income and wealth inequality and diminishing social mobility will not be achieved by individual actions. The goal of common prosperity requires coordinated and joint undertaking of governments, enterprises, non-governmental organizations, civil society, and international organizations, through social innovation to consolidate all these resources and players.



The road to common prosperity.

Looking at the development of major economies in the world over the past 40 years, China and the US have led the world in economic development and wealth growth. These two countries, despite their outstanding economic performances, have also experienced very serious problems of uneven income and wealth distribution. In 2019, the Gini coefficient was 0.48 in the US and 0.46 in China, ranked 3rd and 4th among world's major economies only after Brazil (0.53) and India (0.50).

How can the aforementioned observations and reflections bring lights to China's future path to common prosperity?

First, China needs to maintain and strengthen its sustained and strong economic growth in the first distribution, in particular relying on innovation and value competition rather than price competition, to create more high-value-added employment opportunities, and to continue to sustain a new generation of economic disruptions. The reasoning behind this is that growth and continuous wealth creation are prerequisites for common prosperity.

Future economic development and growth must also be more inclusive and balanced, another necessary condition for common prosperity. China must optimize its enterprise system and focus more on building more Type B enterprises.

In terms of corporate value orientation, Chinese companies need to be more holistic, inclusive and balanced, and go beyond the concept of maximizing shareholders' interests. Chinese companies should also pay more attention to corporate social values and purpose, actively participate in promoting social innovation, and become a backbone for solving social problems.

Social values and purposes in the new era have become an indispensable part of the strategy for many large-scale corporates. The superimposed influence of technological disruption, the COVID-19 pandemic and other factors have intensified the issue of income and wealth inequality.

Second, in the future, more active, transparent, and equitable redistribution of wealth through the visible hand of government are needed around the world. From this point of view, the rise of "socialism" globally may be one of the megatrends in the new era.

Building a more complete, comprehensive, equitable social security system is necessary for achieving common prosperity. At the moment, China and the EU countries are not at the same stage of development, and thus a high-welfare society is not entirely suitable for China's current situation. However, the EU's successful experiences with the second distribution, including its failures and lessons,

are still worthy of reference. Developing countries such as Russia and Brazil have similar per capita GDP to China. Compared with them, China also has room to improve on education, medical care, and pensions. In the future, China needs to increase investment to construct a more active, stronger, and fairer second distribution system.

Third, regarding the third distribution, the US example offers some lessons. The US may have the most advanced market economy, unsurpassed innovation capabilities and unmatched generosity in giving, charity and philanthropy, but the US is not viewed as a good example of common prosperity. The US case illustrates the critical role of the visible hand by government for common prosperity and highlights potential limitations of combining the invisible hand with the third redistribution for common prosperity. For the future, social innovation that goes beyond charity and philanthropy, will become complementary to the invisible hand of market and the visible hand of government, and may play a more important role in reaching common prosperity.

For common prosperity, China needs to learn from many economies around the globe and to be innovative in exploring new paths to building a more equitable, sustainable and inclusive society. Exploration and innovation in common prosperity by China is not only of great significance to the country's economic development and prosperity, social harmony and advancement. It could also help contribute Chinese wisdom and solutions to the important challenges of human development worldwide.

04

Making Social Innovation Happen: How to Lead for Impact

Richard Hill

Head of Knowledge & Learning,
Møller Institute, Churchill College,
University of Cambridge

Richard Hill is an experienced facilitator and Programme Director whose ambition is to support teams, organisations and individuals to realise their potential through developing leadership, purpose and culture. Working to bridge the gap between academic insight and day-to-day working realities, he brings both thought leadership and on the ground experience to enable the success of others.





Leaders exist to create impact. The drive to shift conditions, context or consequence is what separates leaders from the rest of the world. The change from state A to state B is what motivates and drives a leader to act, and creates the foundation for the legacy they leave.

Impact is a creature with many faces – as leaders we choose the spaces where we make impact. While the space that most have chosen in the last century has revolved around financial impact, (focused on balance sheets, profit and loss and shareholder value) as we find ourselves firmly in the 21st Century, we are now discovering that the faces of impact we have perhaps ignored in the past must now be engaged with.

These faces are many, but perhaps include environmental impact, creation of shared value across communities, social empowerment, and many others.



Why must we engage?

Leaders of today need to manage significant complexity, rapidly evolving circumstance, technological innovation, and social volatility. It may be fashionable to state that we are existing in a period of unprecedented change – but it is also true. Leadership has always dealt in the management of uncertainty, but right now we are experiencing greater connectivity, faster adaptation and the opportunity to drive more significant change.

This means that the spaces we assess ourselves against are no longer the transactional measurements of balance sheets. We look to the broad dimensions of society where we operate, looking at the value we build for our shareholders, our employees, our customers and our markets alongside each other with equal weighting.

This requires us to make the shift from leaders who create impact to become Impact Leaders.

Impact Leadership is the conscious decision to bring broad horizons into your leadership practice, ensuring that you consider every aspect of the challenges you set for yourself and others. It demands the capacity to understand contexts beyond your own, to be able to empathise

with and acknowledge experiences you haven't directly had, and most importantly requires an ability to think holistically based on your own and others' insights.

The purpose of Impact Leadership is to broaden the parameters of your success. It shifts your legacy as a leader from simple achievement to the creation of continuous value. In the past it might have been the domain of a select few, but in the future, it will be an essential tool for leaders in all areas. Its fundamental task is to ensure positive growth in all spaces, not just the narrow metrics of organisational success.

This brings us to the question of social innovation. In a world where all innovations are social, whether through their creation or adoption, it can be hard to think of a single innovation, technological or otherwise, which doesn't have an impact on our societies.

We are faced with an incredible degree of connectivity – products, services, societies, technologies and ecosystems all interrelate at an unprecedented level. Any development in one area requires a shift in understanding, outcome or behaviour in another.



This means that as leaders we have a duty to recognise where and how impact happens as a result of our decision-making. No leadership action sits in isolation in our connected world. The context in which we now operate demands that instead of shying away from seemingly distant spaces we must enlarge our leadership perceptions to include every aspect where we have impact, however far it may appear to sit from our core endeavours.

Impact leadership is not a set of knowledge but is a way of approaching the world. At its heart is the

capacity to understand the chains which bind each decision we take into a series of reactions which in turn affect additional aspects of what we are trying to achieve.

To develop your capacity to be an Impact Leader, it is important to recognise where you sit. Impact Leaders are positioned at the horizon – they are looking ahead to what is new, while equally balancing what has come before. They learn lessons and insights from the landscape leading up to the horizon and shape new possibilities which sit beyond it.

"Impact Leaders are positioned at the horizon – they are looking ahead to what is new, while equally balancing what has come before."

Four critical skills and behaviours lie at the heart of Impact Leadership:

1 Critical thought

Rational judgement which evaluates both self and context is essential to ensure clarity of decision and direction. It does not require the removal of subjectivity, but instead moderates for it, allowing you to step beyond your assumptions and biases towards a greater 'truth'.

2 Trustworthiness

To be ready to respond to multiple spaces, those who are already expert in these spaces need to be willing to trust your capacity to understand and drive the links between worlds. Trustworthiness, or the capacity to act in a way which inspires others to trust in you, is a major component of leading impact.

3 Purposefulness

Understanding the profound objective that you are working towards creates a springboard for opening yourself up to the many dimensions you must consider as you develop impact. Purpose provides the light and shade under which you can balance the outcomes you create and the effects they have around you.

4 Courage

Being impactful requires us to step beyond ourselves and let go of the safety net of assumptions which give us comfort. Rather than being an unknowable skill, courage is an ability learned through the combination of your own ability, the empowerment to act, a foundation of belonging and an attitude of generosity. Impact requires us to be courageous enough to look beyond our needs and acknowledge the experiences of others.

To be impactful requires conscious action – it is not an accidental outcome but the sum of intent, action, and awareness. It requires a perspective on the world which makes you see the potential for positive development across a spectrum and to have a desire to see growth occur in each of these.

05

Developing 'Business for Good' in China

Zhu Rui (Juliet)

Professor of Marketing and
Director of the Social Innovation
and Business for Good Centre,
CKGSB

Zhu Rui is Professor of Marketing at Cheung Kong Graduate School of Business (CKGSB). Prior to joining CKGSB, she was associate professor of marketing, and Canada Research Chair in consumer behavior at the University of British Columbia. She received her PhD in Marketing from University of Minnesota.





In this day and age, companies are no longer being evaluated only through their economic dimensions. In a post-pandemic world, stakeholder capitalism as a value creation structure is simply no longer sustainable. People and consumers are asking how corporations are benefiting society and what they are doing to impact the world in positive ways. Whether or not a company offers innovative solutions to social problems is becoming an important dimension on which we judge success.

The current economic model is good at accumulating wealth, promoting employment, promoting creativity and producing new technologies, but they've also brought in their wake a set of social problems, including a growing gap between the rich and poor, and environmental degradation. People have begun to realize that a company that only pursues economic growth is not necessarily a good company. A good company needs to assume social responsibility, solve societal problems, and become a value to society.



How can corporations balance profit with social responsibility?

In my recently published book, I sum up the theoretical framework of "a three-step approach for sustainable business." Companies must first make sure that their value proposition encompasses mutual benefit value systems. Then they must find what their company's expertise is and how it intersects with society's pain points. Finally, they must enforce a comprehensive governance structure. Without rules and mechanisms in place, great ideas will fall apart.

Companies that practice 'good business' are forming a trend in recent years. Tencent updated its mission statement to include, "Technology for Good" in 2019, and Ping An began to build an ESG system starting from its board of directors. These companies are not alone.

While there is an abundance of cases of Western companies becoming more sustainable, Chinese companies are now, too, gradually adopting Environmental, Social and Corporate Governance (ESG) frameworks. Aside from laying out a theoretical framework for how companies should operate, I also wanted to track some of these outstanding Chinese companies to shed light on the progress here in Asia.

At CKGSB, social innovation and business for good is embedded in our DNA. It is the reason why Mr. Li Ka-shing decided to fund the establishment of the School in China nearly 20 years ago, so as to educate a new generation of business leaders to be more socially responsible. In 2005, CKGSB pioneered the integration of the humanities into its core business curricula to give students a more holistic view of business development. CKGSB requires 48-hours of community service and a compulsory "Business for Good and Social Innovation" module for all of its degree students, with the aim of addressing global issues facing humanity, such as wealth inequality, social immobility and sustainability. We also offer philanthropy scholarships in all degree programs to leaders in the nonprofit sector. Last year, we even began offering an online course on "Social Innovation from Global Perspectives", which convenes experts and leaders worldwide on this topic.

When we first started these initiatives, these concepts were still very new. Now, I am encouraged to see that my students not only understand the concept, but also agree with it. Everyone is far more enthusiastic about this idea than before, and students reach out to ask how they can do things better. Similar to the B Corps Movement, which was started in 2006 by a number of American



entrepreneurs who wanted to transform mainstream business, Chinese companies are also working to develop criteria for "the good company" and a certification system to identify those with a strong sense of social responsibility and outstanding performance in solving social problems.

This year, we are aiming to systematize our approach to social innovation by introducing a one-year practice-based course on social innovation and business for good, which is compulsory in our EMBA program and asks students to look into improving their own companies in the area of

ESG. We are pairing mentors with students, so that they get support from leaders in this domain, in addition to professors. This practice-oriented course is our bold step to encourage students to truly apply what they learn in school to what they do on a daily basis.

In the future, we see many possibilities to grow our emphasis on sustainability. The more we change people's mindsets, the more we can encourage them to apply these principles to what they do, then the better this world will be.

06

Why We Have Been Understating the Costs of Air Pollution

Brian Viard

Professor of Economics, CKGSB

Dr. Brian Viard moved to Beijing in 2007 to join the faculty of Cheung Kong Graduate School of Business (CKGSB). Prior to that, he was a professor at Stanford Graduate School of Business. Professor Viard's research focuses on industrial organization economics, environmental economics, and economics of strategy. Professor Viard's recent work focuses primarily on environmental economics including the economic effects of China's efforts to reduce automobile pollution, the effect of air pollution on manufacturing productivity, and how spillovers between Chinese cities affects efforts to reduce air pollution.





Air pollution has been recognized as harmful to humans at least since the time of Hippocrates (circa 400 BC) who attributed various illnesses to “impure and unhealthy” atmospheres. However, it took until the eighteenth century for it to be scientifically measured and even longer for the beginnings of regulation. One of the earliest regulations, the UK’s Clean Air Act of 1956, was spurred on by the “London Fog” of 1952 which is estimated to have prematurely killed 12,000 people in two weeks¹.

Like other public policy decisions, evaluating an environmental regulation should be based on comparing its social costs to its social benefits. Reducing air pollution may require costs such as abatement equipment, compliance personnel, research and development expenses, and reductions in economic output. Against this must be weighed the benefits. Traditionally, the benefits of pollution reduction were considered to be almost exclusively lower morbidity and mortality. While these are important benefits, economists have recently identified a host of others.

In addition to better physical health, a major benefit of air pollution reduction is improved mental health and subjective wellbeing. Although psychologists originally identified air pollution’s effects on mental health, economists have begun to quantify the economic costs. High air pollution has been found to reduce students’ test scores² and overall academic performance³, lower adults’ cognitive ability⁴, accelerate dementia⁵, increase driving accidents⁶, and make people less happy and satisfied⁷. This affects not only blue collar workers but also professional workers and managers. Economists have found air pollution significantly impairs judgment or cognition in occupations ranging from call center workers⁸ to judges⁹, politicians¹⁰, investors¹¹, and umpires¹². This means that not only manufacturing but also services are impacted.



"Economists have found air pollution significantly impairs judgment or cognition in occupations ranging from call center workers⁸ to judges⁹, politicians¹⁰, investors¹¹, and umpires¹². This means that not only manufacturing but also services are impacted."

Another major social benefit economists have identified in the last few years is that lowering pollution can increase productivity through channels such as higher worker stamina and cognitive ability, reduced work absences, and increased longevity of already-trained workers¹³. Effects have been found not only for outdoor but also indoor workers as many harmful pollutants are small enough to permeate buildings. While most studies to date have looked at productivity improvements in specific occupations such as fruit processors¹⁴ and textile workers¹⁵, reductions in particulate matter have been shown to increase nationwide productivity in China's manufacturing sector¹⁶.

Even previous estimates of air pollution's impact on health and longevity are likely understated because they fail to account for behavioral responses. When confronted with pollution, people often engage in avoidance behavior. For example, they may spend more time indoors than they otherwise would. Not only is there a direct cost of this – people are not able to engage in the activities they most prefer – it also means that studies relating pollution levels to health outcomes understate the damage that occurs if behavior were to remain unchanged. While economists have identified this issue, more work is needed to quantify by how much morbidity and mortality effects should be adjusted for avoidance behavior.



The most extreme form of avoidance behavior involves moving to a different city with cleaner air. Economists have found significant out-migration in response to long-term pollution levels¹⁷. Aside from the one-time relocation costs, this would appear to be a zero-sum game because one city's loss is another's gain. However, this is not necessarily the case because out-migration results in worse matches of workers' skills with firms' needs. More troubling is the fact that research so far has found that high-skilled workers, the main drivers of long-run growth, are more likely to relocate from dirty to clean cities, resulting in regional imbalances.

Economists have also recently uncovered extremely long-term effects of air pollution. Exposure to air pollution in childhood has been shown to lead to fewer

years of schooling¹⁸ and lower labor force participation¹⁹ and incomes²⁰ in adulthood. Areas located downwind of industrial sites have lower growth rates of skilled employment and wages ten to twenty years later²¹. Even more striking, highly-polluted locations had higher shares of low-skilled workers one hundred years later²².

What does all this mean for those who set environmental policy? Cost-benefit analyses of regulations should take account of this broader range of previously-unknown benefits of reducing pollution and must account not only for contemporaneous costs but those that will arise many years in the future. To not do so will tip the balance toward too little regulation and an excessively high level of air pollution with all the associated social costs.

07

Chasing Carbon Neutrality

Liu Jing

Professor of Accounting and Finance, CKGSB

Dr. Liu is Professor of Accounting and Finance at the Cheung Kong Graduate School of Business (CKGSB). Prior to joining CKGSB, he was a tenured professor at UCLA's Anderson School of Management. He earned his Ph.D. from Columbia Business School in 1999. Academically, Dr. Liu is an internationally recognized expert on capital markets and investment analysis.



Duan Lei

Senior Researcher, Business Scholars Program, CKGSB

Duan Lei is a researcher at the Investment Research Centre of the Cheung Kong Graduate School of Business (CKGSB) and leads the school's research efforts in the Business Scholars Program. In the past two years, he has led his team to conduct in-depth research projects on industries including Internet, sports, entertainment, tourism and logistics in China. He received his Master of Business Administration from the Cheung Kong Graduate School of Business and his Master of Science in Integrated Circuit Design Engineering from Fudan University. Prior to joining CKGSB, he worked for Hua Hong Group and Fudan University's Microelectronics Research Institute (now School of Microelectronics).





China plans to peak carbon emissions in 2030 and be fully carbon neutral by 2060. How will this impact economic activities?

Since the Industrial Revolution, human activity has caused the earth's temperature to rise abnormally - and rapidly. According to data from NASA, the current global average surface temperature is around 1.2°C higher than it was in 1880, a number far beyond the normal fluctuation range of the earth's average temperature in the previous 10,000 years.

The potential economic losses due to the effects of continued global warming are staggering. According to research from Yale University professor and climate economist William D. Nordhaus, by the end of this century, if global temperatures rise by 3°C, 4°C or 5°C, worldwide annual economic losses could be as much as 2.3%, 4% or 6.5% of GDP respectively.

Furthermore, research by the Federal Reserve Institute of Globalization has shown that unless counteractive measures are taken, global temperatures will continue to rise by a further 3.7°C by the year 2100, resulting in a possible loss of 7.2% of annual per capita GDP. To put this in perspective, by the end of this century, unchecked global warming would cause human beings to face economic losses equivalent to a COVID-19-scale pandemic every single year.



Solving the problem.

Achieving carbon neutrality is an enormous challenge. Energy usage is both the largest source of global carbon emissions and also an important factor in the economic development of nations as well as the continued improvement of living standards. The correlation coefficient between energy consumption growth rates and GDP growth rates is as high as 90%.

Despite the likelihood of a knock-on effect of lowering living standards, it is extremely difficult to persuade people to reduce energy usage in order to reduce emissions. Therefore, the key to solving carbon emissions problems is to solve the economic knock-on effects. Accordingly, there are two ways to approach emission reduction and achieve the goal of carbon neutrality whilst continuing to maintain growth rates and standards of living.

The first approach is to continue to reduce the cost of new energy. For example, the government subsidies granted during the inception of the industry led to the cost of generating solar and wind energy falling below that of more traditional energy sources. Because it now makes financial sense, even without additional stimulus policies, the market will organically choose to use new energy over other sources. The cost reduction of new energy production stems from technological progress and economies of scale

which, once progression is established, drive a positive cycle of cost reduction.

The second approach is to increase the cost of carbon emissions. If the cost of carbon emissions is high enough, companies will invest in research and development of new energy in order to avoid emissions and their associated costs.

The basic idea behind increasing the cost of carbon emissions is to tax them. This can be done by stipulating how much tax should be paid per certain amount of emissions. But this administrative approach can often be inefficient and increase costs in areas where it isn't required or desired.

An alternative is to use the market to solve the problem. By setting a limit on China's overall carbon emissions, you can then give companies the right to buy carbon emission credits from each other, meaning that emissions will establish their own market prices. This price can also be considered a carbon tax, one imposed by society on carbon-generating companies.

China introduced such a market in July 2021, with an opening price of \$7.40 per ton of carbon but, although this price is over three times higher than the current global

carbon tax rates which hover around \$2 per ton, it is still way off the mark. In order to limit global temperature increases to 2°C by the end of this century—which a number of experts say is required—the International Monetary Fund estimates that the price of carbon emissions needs to reach \$75 per ton by 2030 to effectively control the rise in temperature.

Continuing confidence.

Although global energy usage is still dominated by fossil fuel-derived power, renewable energy supply and demand is growing at a rapid pace. Taking the global primary energy consumption structure in 2019 as an example: oil, coal and natural gas accounted for 33.1%, 27.0% and 24.2% of consumption respectively; while renewable energy sources such as solar, wind and hydropower added up to only 11.4%.

But since 2013, clean energy has consistently outpaced traditional energy sources in newly installed capacity for power generation globally. According to the Chinese government's carbon neutrality goals, the share of non-fossil energy in primary energy consumption will be in excess of 25% in 2030, and clean energy will dominate the energy mix in 2060.

Confidence in the future development of clean energy comes in large part from the fact that the cost of solar and wind power generation has been rapidly decreasing

Business opportunities.

China is a world leader in industrial and technological development. In 2019, the output of silicon wafers, cells and modules in China's solar industry accounted for 91%, 79% and 71% of the total global output, respectively. The output of inverters—devices that convert electrical power from direct to alternating current—accounted for more than 80% of the global market and the manufacturing of complete machines for wind power generation made up 41% of the global total output.

China's energy and tech sectors have also produced global industry leaders, for example, lithium battery manufacturer Ningde Times, which has a market value of over RMB 1 trillion. There are also popular independent brands of new energy vehicles, such as NIO and XPeng. Because of China's dominance in these markets, if the world continues to seek to reduce emissions and lower

carbon output, it will create a huge opportunity for the country in terms of business development. Carbon reduction can help China to expand and overtake its competitors in the energy and automobile sectors, while also leaping ahead in industrial competitiveness. Particularly in the context of global emission reductions, new energy vehicles have ushered in a golden age of development at both the policy and cost levels. European countries are gradually moving towards outlawing fuel-powered vehicles after 2025 and completely banning the sale of gasoline and diesel vehicles in order to fulfill the obligations of the Paris climate agreement.

According to the latest data from the United Nations Environment Program, global greenhouse gas emissions in 2019 were equivalent to 59.1 billion tons of carbon dioxide, which would result in the payment of around \$4.4 trillion in global annual carbon taxes. Based on these numbers we can see that spending about 5% of global GDP each year on carbon taxes is required to effectively slow any rise in temperature. Such a huge economic investment will challenge the determination of people and policymakers to reduce emissions.

over recent years and making it easy for it to compete directly with traditional energy sources. According to the International Renewable Energy Agency, from 2010 to 2019, the cost of solar power generation worldwide fell by 82%, onshore wind power by 39% and offshore wind power by 29%. In 2019, many areas of China's solar, wind and thermal power already reached cost parity with grid-connected power. With the continuing development of technology and increasingly large-scale application, the cost of solar and wind energy has considerable potential for further reductions.

Another reason for confidence in new energy comes from the potential for clean energy development. Solar energy, for example, could meet China's current electricity consumption needs with only 0.6% of the country's land area, around 237km², covered in photovoltaic panels. Adjustments would have to be made to take into account energy demand peaks and troughs, and transmission losses, but the potential is clearly there.

carbon output, it will create a huge opportunity for the country in terms of business development. Carbon reduction can help China to expand and overtake its competitors in the energy and automobile sectors, while also leaping ahead in industrial competitiveness. Particularly in the context of global emission reductions, new energy vehicles have ushered in a golden age of development at both the policy and cost levels. European countries are gradually moving towards outlawing fuel-powered vehicles after 2025 and completely banning the sale of gasoline and diesel vehicles in order to fulfill the obligations of the Paris climate agreement.

In China, Hainan has said it will ban the sale of fuel cars by 2030, becoming the first province in the country to set a deadline for phasing out older energy vehicles. The transformation from fuel vehicles to new energy vehicles

is accelerating, with Ernst & Young predicting that electric vehicle sales in Europe, China and the US will exceed fuel vehicle sales within 12 years. The China Consumers Association expects China's new energy vehicle sales to grow at an average annual rate of more than 40% over the next five years.

In terms of cost, the global IT and electronics sectors have seen an annual decrease of about 30% in unit costs. Similarly, the renewable power battery market has followed a Moore's Law style reduction in costs, with an average decrease in power generation cost of about 18% per year over the past few decades. Both decreases have resulted in new energy vehicles becoming more desirable in terms of cost.



Thinking about the future.

China is committed to stopping the growth of carbon emissions by 2030 and achieving carbon neutrality by 2060. However, reaching these goals is not a simple task. For example, China's industrial sector uses 48.3% of the country's energy, with the steel, and chemical and petrochemical industries accounting for 24% and 21% of energy use respectively. As demand in these industries continues to rise, it will be difficult to curtail emissions in the short term.

Global warming is obviously a pressing issue, and its impact on global civilization is seriously detrimental. Given the cost and complexity of reducing carbon emissions,

it is difficult for countries around the world to reach an agreement on the best way to approach the problem. In addition to the advancement of new energy technology, a substantial increase in the cost of carbon emissions is required as part of the climate solution.

Because of the universality of the climate crisis, an increase in carbon emissions costs will not only affect specific industries or new energy companies, but also the world as a whole. Staying at the forefront of developments in the approaching low-carbon era is an issue that every company and every country must think about carefully.

08

Changing Consumption and Production Behaviors

Sun Baohong

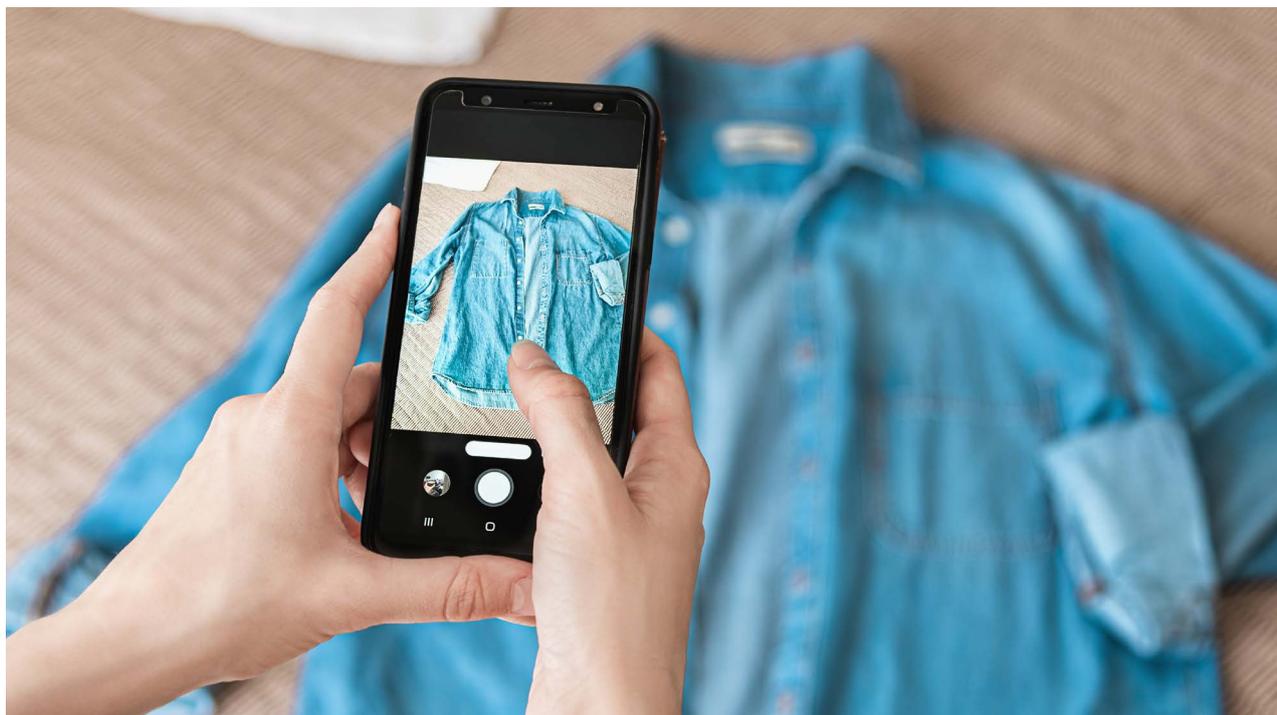
Dean's Distinguished Chair Professor of Marketing, CKGSB

Professor Sun Baohong is the Dean's Distinguished Chair Professor of Marketing and the Associate Dean for Americas at CKGSB. She also directs CKGSB's Customer Information Management Center. Prior to joining CKGSB in 2011, Professor Sun was Carnegie Bosch Professor of Marketing at the Tepper School of Business of Carnegie Mellon University. Professor Sun received her PhD from the University of Southern California in 1997 and BA from Renmin University of China.





China is a huge country both in terms of consumption and production. In the first three quarters of 2021, consumer spending contributed to 64.8% of China's GDP, the biggest driver of growth for the Chinese economy. The booming middle class has produced roughly 707 million people who are eager to buy things generations before them would have never dreamed of owning or experiencing, like cars, luxury items, a high-end lifestyle and international travel. Its consumption habits have a huge impact on the world. As a country focused on manufacturing for the world, we have an issue with overproduction. Companies that are built on China's manufacturing sector are eager to sell products to meet their business goals. The more impulsive buying they can generate the better it is for their bottom line. However, this has left us with a lot of waste. Like many nations grappling with the same problem, more rational consumption is needed in China, too.



Luckily there are already encouraging signs from both consumers and producers to become more socially and environmentally sustainable. From the consumer side, they are gradually realizing that the current model for consumption cannot be sustained. Among Chinese consumers, younger generations under 35 years of age have much more awareness on environmental and social issues. If you ask Chinese consumers what their understanding of sustainability is, five topics are likely to come to mind – waste control, recycling, eco-friendly materials, low carbon emissions and the cooperative economy. Companies are also changing the way they produce as consumer habits change. Companies want to be seen leading the way in terms of operating sustainably.

It is encouraging to see increasingly more young consumers take to social media to advocate for a simpler life. For example, vloggers like Olivia Zhang are giving 'Tips on How to Shop More Sustainably' or '16 Baby Habits to Be More Environmentally Friendly'. More people are using platforms like Xianyu, similar to eBay, to buy and sell used items. This was unheard of in the past because for cultural reasons as Chinese consumers traditionally

did not like to buy used items. But the Xianyu platform is extremely easy to use and consumer behaviors are changing. Social media is playing a major role in driving some of this consumer behavior change.

From a production perspective, better technology, better use of environmentally-friendly materials in the production process, more accurate predictions on consumer demand, new business models, better alignment with a business strategy focused on environmental, sustainable production are all new ways companies are adopting to lower their global footprint.

Start-up companies are adopting new business models and using innovations to tackle some of our societal problems. Dozens of new start-ups are using technology to reduce food wastage and feed those in need. Each day, restaurants and grocery stores throw away a huge amount of unwanted leftover food. There are apps that connect those who have extra food with those who have none. This way, restaurants, grocery stores and even individuals can give away food, that otherwise would have been wasted, to someone in need.



Artisanal producers are using e-commerce platforms and social media live streaming to reach new markets. Many remote sellers from China's poorer regions have been able to reach more consumers by using live streaming platforms to market their products, bypassing distribution channels, to avoid logistical wastage. JD.com is working with major brands like Nestle, Lego, and Unilever to use more sustainable packaging like slimmer tape and electronic vehicles to make deliveries. These are all great examples of how companies are aligning their business models with sustainability in mind.

Aside from consumers and producers playing an important role in driving change, governments also have an important role to play in changing consumption and production practices. They can help to educate consumers to make better choices and put policy in place to incentivize behavioral change. For example, the policy that got rid of plastic bag usage was one such change that helped consumers move away from one-time use plastic shopping bags. With greater awareness, consumers can make responsible, educated choices. Those choices will help to change the business practices of corporations. In turn, these corporations will be encouraged to produce more responsibly, creating a virtuous cycle.

09

Why Social Innovation Matters?

Bo Ji

**Chief Representative of CKGSB
Europe and Assistant Dean,
CKGSB**

Bo is currently the Assistant Dean of Global Executive Education & Chief Representative for Europe at Cheung Kong Graduate School of Business (CKGSB). Bo has over-20-years working as a senior executive at Monsanto, Cargill, Pfizer, Wrigley and Mars. After his corporate career, Bo became a serial entrepreneur and investor. Bo created the China Start Program at CKGSB to bring global start-ups and scaleups to China.





The COVID-19 pandemic has not only disrupted our global economy, but it has also increased socioeconomic stratification and social upheaval. According to a report by the World Bank, up to 150 million people will fall into extreme poverty by the end of 2021¹. The data also shows that the middle class has begun to shrink for the first time in 50 years – potentially 52 million people in just Latin America alone. This unease may trigger huge social conflicts in the coming decades if we do not act now.

Inequality is one of the drivers of social unrest recently experienced on almost every continent. In France, for example, a small tax increase in crude oil and fuel triggered the 'Yellow Vests Protests' and violent demonstrators who claimed that a disproportionate burden of the cost fell on the working and middle classes, especially those living in rural and semi-urban areas. Ultimately, these protests in France forced the government to change its policy². In the long run, however, any increase in inequality that leads to a slowdown in economic activity is expected to further erode the middle class, leading to political instability, democratic regression, and increased conflict.

Using social innovation to address these issues and find solutions is a must. Social innovation matters to both society and corporations. It is the utilization of business models to solve societal problems that cannot be solved by the government or the private sector alone.

Major social problems that are becoming increasingly severe such as uneven distribution of income and wealth, decline in social mobility, environmental degradation and unsustainable development all require clearly thought-out, socially innovative solutions that cannot be achieved by one nation or one party alone. It must be a well integrated, coordinated cross-border collaboration that

actively draws on the resources of the government and the private sector.

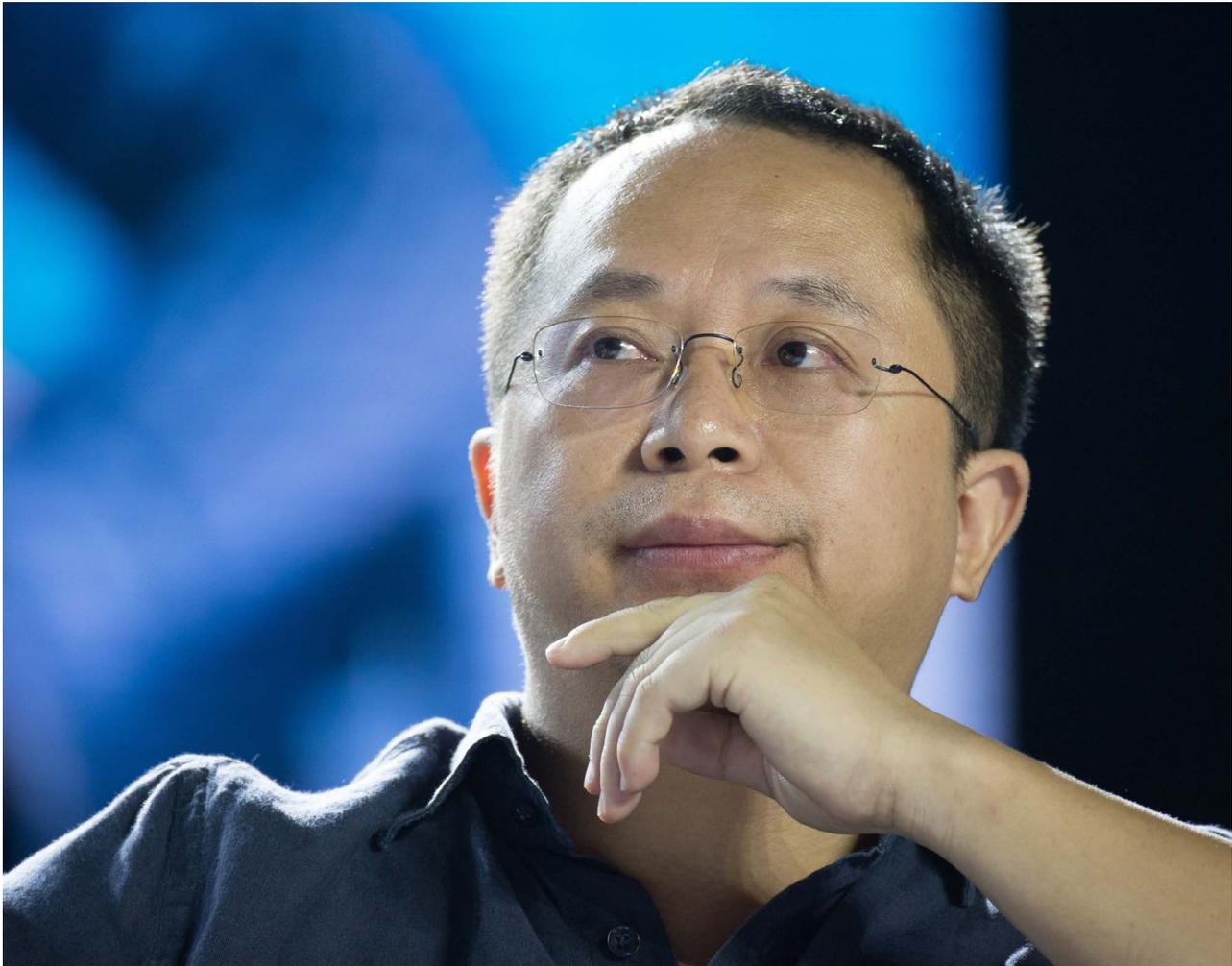
At CKGSB, we wanted to activate these resources, bring together organizations and business leaders to create a platform of openness, to build new partnerships and collaborations and to create impactful businesses. This has led to a partnership with the Møller Institute of Churchill College at the University of Cambridge for the "Igniting Innovation for Impact" program. The program invites speakers from the East and the West to share their stories, methods and resources to help other business leaders lead with purpose.



One of the speakers is Zhang Yong, the CEO of Haidilao Hot Pot and a CKGSB alumnus who wanted to create a restaurant brand synonymous with customer service and employee care. He believes that the wellbeing of employees leads to a better level of customer service which in turn leads to better business. Haidilao, one of China's most popular restaurant chains, found a competitive advantage in offering a unique customer service and dining experience, providing things like free manicures and foot massages while customers wait for their food. Their slogan, "Take Care of Your People" extends beyond the customers to the employees as well. The company provides job opportunities to people

from poverty-stricken counties looking for work in China's urban centres. It provides education subsidies for employees' children, starting from kindergarten and going all the way up to university, which allows children who would otherwise be 'left-behind' to stay with their parents in the cities.

In the post-pandemic era, the concept of 'social enterprise' and 'social innovation' is more important than ever, because if companies want to create sustainable growth in a transformative world, they must 'put people first and reshape values.'



Another example of a company using social innovation to reshape the way we live comes from our alumnus Zhou Hongyi, Chairman and CEO of Qihoo 360 Technology Co. Ltd. Qihoo 360, one of China's top internet security companies, has combined its vision of smart cities with years of technological development in artificial intelligence and big data to stop the spread of COVID-19. Shortly after the start of the pandemic, the company quickly launched a variety of control and prevention apps to help thousands of

communities in multiple cities reduce the risk of infection. Users were able to see if they had come into contact with those who were infected so they could take appropriate self-quarantine measures or monitor symptoms. Zhou Hongyi says, "As a technology company, the business model must not only pursue the interest of shareholders, but also the interests of the company's employees, industry, and greater society."

Businesses who practice social innovation benefit not just through higher profits but also receive other long-term advantages.

- 1 Businesses that can contribute their efforts to society are more likely to earn the public's trust and brand loyalty.**
For example, on July 21, 2021, a Chinese company Erke donated RMB 3 million (roughly USD 500,000) in cash, and RMB 47 million worth of materials to flood victims in Henan Province, making the little-known brand a viral sensation in a matter of days. The news sparked a shopping frenzy for the domestic sportswear brand. Overall sales from July 22-23, 2021 went up by 280% from the previous year³.
- 2 A growing number of investors are including social, environmental and corporate governance (ESG) considerations into their performance metrics and investment decisions.**
The post-pandemic investment landscape is set to place greater value on ESG disclosures⁴. Top financiers from all over the world are discussing how and who will fund — and profit from — the race to limit global warming. Banks and investors are already racing to stump up the USD 150 trillion that is needed to achieve net zero⁵.
- 3 The next generation workforce values long-term sustainability for both our society and the environment.**
Companies must strive to increase employee retention, and gain employee loyalty. Otherwise they will face the major challenge of loss of talent and high staff turnover.
- 4 Companies have better and long-term competitiveness if resource scarcity and environmental concerns are incorporated into their business model.**
It could, for example, help mitigate future external impacts such as supply chain or climate change disruptions.

International Organizations

International organizations have been devoting themselves to solving issues that go beyond national boundaries and working with all parties to create greater synergy.

10 From Poverty Reduction to Common Prosperity: Challenging Reforms, Big Upside	50
Martin Raiser, Country Director for China and Mongolia, and Director for Korea, World Bank	
11 Philanthropy in China	53
Jiakai Yuan, Vice President and China Chief Representative, United Way Worldwide	
12 Social Innovation is Key to Safe E-Waste Disposal	57
Frank-Jürgen Richter, Chairman, Horasis	
13 Reducing Our Global Footprint	62
Nathalie Bastianelli, Founder of WeBelongtoChange	
14 A Step Towards Mutual Prosperity: Putting Purpose into Practice: The Economics of Mutuality	66
Bruno Roche, Founder, Economics of Mutuality	

10

From Poverty Reduction to Common Prosperity: Challenging Reforms, Big Upside

Martin Raiser

Country Director for China and Mongolia, and Director for Korea, World Bank

Martin Raiser is the World Bank's Country Director for China and Mongolia, and Director for Korea since March 1, 2019. Mr. Raiser is leading a team that is managing an evolving partnership with China, a growing program of support to Mongolia, and a deepening knowledge partnership with Korea focused on innovation and technology.





The beginning of the 2020s marks an important threshold for China's economic development. In the coming decade China will very likely cross the threshold to high income. In 2020, the Chinese authorities announced that extreme poverty had been eliminated and China had become moderately prosperous. Shortly thereafter, Chinese policy makers launched a series of important initiatives, including a renewed emphasis on the objective of achieving common prosperity, indicating concern for the large domestic imbalances in levels of development and continued high levels of economic inequality. In short, as China is setting its sights on high income, its leaders no longer target growth at all cost, but aim for quality and balanced development.

This objective is commendable. Imbalances in China's development are notoriously high. Inequality, with a GINI coefficient of 0.46, is much higher than in the advanced economies. The urban-rural income gap remains large (with a ratio of around 2.7:1 in 2019, albeit down from a peak of 3.1 in 2009). Perhaps more importantly, as Scott Rozelle documents in his recent book *Invisible China*¹, there is persistent difference in access to quality public services and economic opportunities between those with an urban hukou and those registered as rural residents. This has led relative intergenerational mobility in China to decline since the early reform period²: it matters more today for your personal prospects what family you are born into than it did a couple of decades ago.



What could China's policy makers do to address these challenges? Inequality in the disposable income of households is the result of two factors: the inequality of market incomes – wages and capital incomes – and the extent of redistribution through taxes, government transfers and (far less importantly) private donations. The distribution of market incomes in China is roughly comparable to that in the average OECD country³. In fact, wage inequality has been falling over the past decade, as labor markets have tightened including for low skilled workers. While China today has more billionaires than the United States, the distribution of wealth in China is not particularly unequal either⁴. Nonetheless, better access to quality education for kids from rural households could help reduce inequality of opportunity and narrow wage gaps. The complete abolition of China's hukou system would allow workers to move to where the best jobs are, while labor market reforms could help reduce informality, once again reducing wage inequality.

On the other hand, the redistribution of income through taxes and government transfers in China is low. According to research by Lustig and Wang, the total impact of redistribution through the government in China as of the mid 2010s was to lower the Gini coefficient of final household income by around 8 points, similar to Chile and Mexico, but only two thirds of the impact in Turkey, half of that in Brazil and only around half of that impact in EU countries such as Poland and Spain⁵. China collects far less than other countries through personal income taxes, raising the bulk of its revenues through taxes on goods and services. These taxes represent a proportionally higher burden on poor households and are thus unequalizing. China could collect more progressive taxes, for instance by introducing an inheritance tax, a property tax, or reforming the personal income tax.

Direct transfers to poor households, including social welfare payments under the dibao and non-contributory rural pensions, have increased substantially in recent years, but benefit levels are still very low. Raising them and integrating multiple welfare benefits in one social registry would increase the level of protection offered to the most vulnerable while improving targeting and efficiency. In-kind transfers such as health and education spending contribute to lowering inequality because of intergovernmental transfers from richer to poorer regions. However, much larger inter-governmental transfers, alongside more rigorous performance-based monitoring systems, would be needed to close the gap in access to quality services⁶.

None of the above is easy. Government advisors have thus been quick to manage expectations and insist that the path towards common prosperity would still rely centrally on "growing the cake" rather than redistributing it⁷. Global evidence suggests that it is growth that drives sustained improvements in living standards. However, the evidence also suggests that reducing inequality of opportunity is good for growth⁸. Giving all rural children the chance of a quality education is vital for growth to continue as China's workforce ages and declines in the coming decades. Rising incomes among the less well-off will add to the dynamism of China's consumer market and could drive the next wave of innovation and entrepreneurship. The next decade will show whether China's aim to shift to a new development paradigm is successful. A shift from growth at all cost to creating equal opportunities for all Chinese citizens would make success more likely.

11

Philanthropy in China

Yuan Jiakai

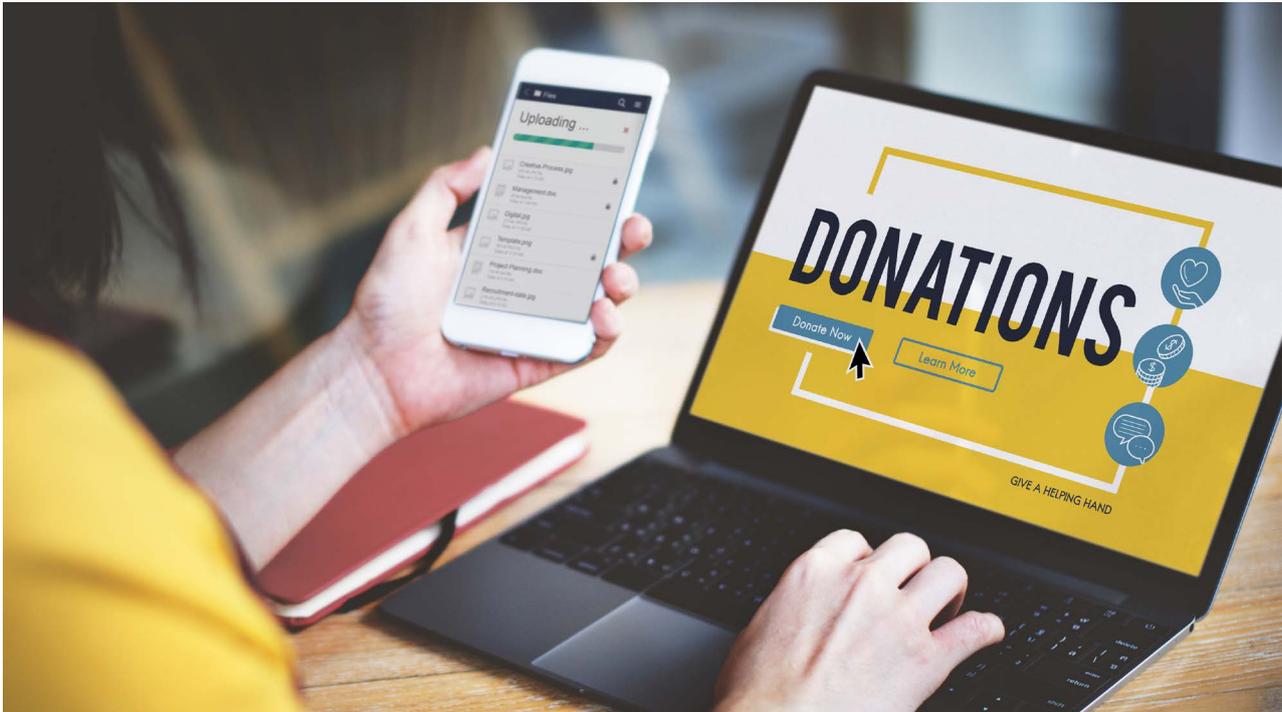
Vice President and China
Chief Representative,
United Way Worldwide

Yuan Jiakai is the Vice President and China Chief Representative of United Way Worldwide. Jiakai has devoted over a decade of his professional life to civil society work in China.





China introduced its new Charity Law in 2016 as part of a comprehensive framework to revamp its social sector; a year later, the law was followed by stringent registration and reporting requirements for all foreign non-governmental organizations (NGOs) operating in China. These rapid changes to China's philanthropic sector brought both opportunities and challenges for local and international NGOs and put pressure on the whole sector to strengthen operational capabilities to increase transparency and accountability. Meanwhile, donors have been increasingly asking for measurable impact outcomes and are driving NGOs to look to innovation and technology for this purpose. The global expansion of Chinese corporations is also fueling a greater need for Chinese NGOs to expand their activities into other countries.

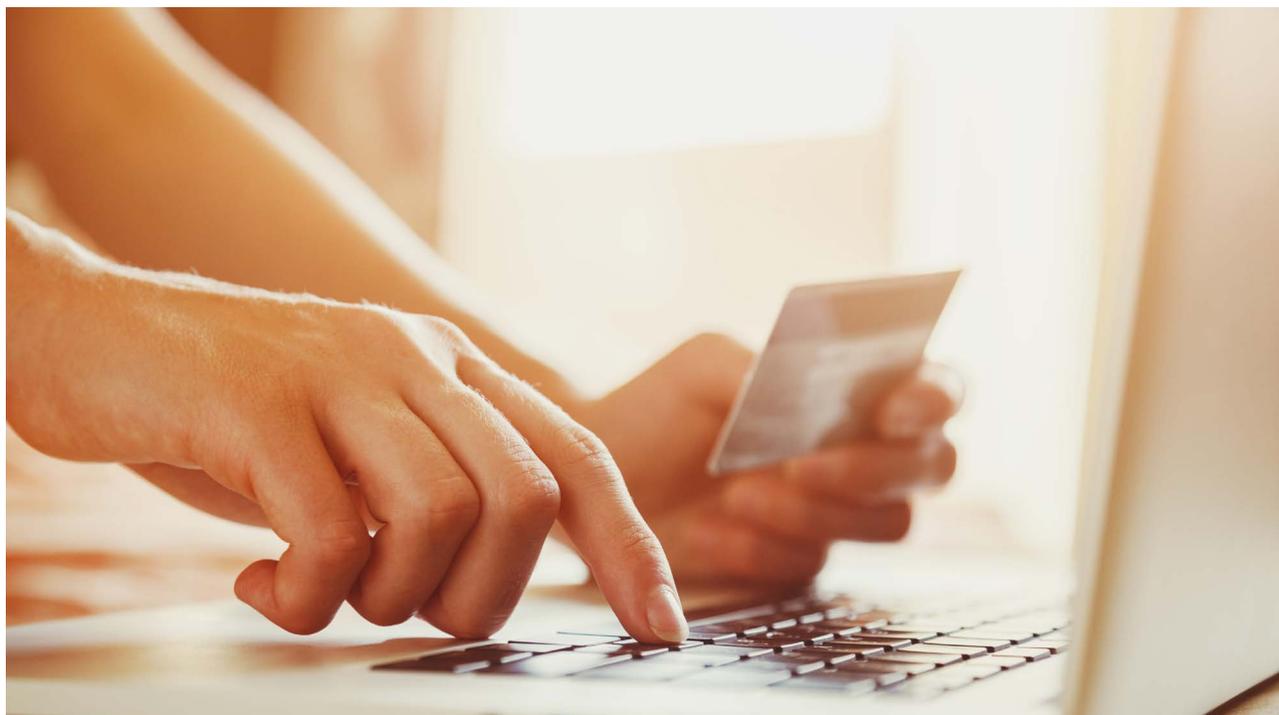


In 2008, the Wenchuan earthquake killed 69,000 people and injured 370,000, marking an important starting point in the development of China's grassroots NGO sector. Some of China's leading private foundations, including the Narada, Jet Li One, and Youcheng Foundations, recently celebrated or are now celebrating their thirteenth anniversary. During this 13-year period, the sector has rapidly grown, with the number of private foundations now exceeding 6,300. The total donations for 2018 and 2019 were RMB 127 billion (roughly USD \$19.8 billion) and RMB 133 billion (roughly USD \$2.8 billion), respectively.

In 2019, the total number of social organizations in China was 867,000, including 372,000 social groups, 487,000 private non-enterprise entities and 7,580 foundations, representing respective increases of 1.64%, 9.68%, and 7.76% compared to 2018. From September 1, 2016, to August 31, 2019, a total of 5,511 charitable organizations were legally registered and certified by the Ministry of Civil Affairs nationwide. Among them, 1,260 have successfully obtained the qualification certificate for fundraising from the public. On the government-approved platform for fundraising filing, 12,641 programs from 673 charitable organizations conducted filing for public fundraising information disclosure. There were 273 charitable trusts filed, and the value of trust property was RMB 2.9 billion (roughly USD \$454 million). In 2019, 524 overseas nongovernmental organizations' representative offices were registered to conduct activities in China, and 2,441 temporary activities were recorded.

The Chinese Ministry of Civil Affairs has approved twenty licenses to encourage online giving, and incredible growth has occurred. In 2016, the total funds raised online increased by 47% from 2015 to RMB 1.98 billion (roughly USD \$310 million). This reflected a 52% growth in donors, from 3 billion in 2015 to 4.6 billion donations in 2016. Tencent Foundation, the charitable arm of China's leading social media platform, initiated a new three-day 99 Charity Festival in September 2015. During this annual festival, Tencent leveraged its nearly 1 billion registered WeChat users and matched funds donated to NGOs. In 2019, Tencent Foundation raised RMB 1.78 billion (roughly USD \$278 million) through 48 million donations.

China's philanthropic sector has also been quick to introduce innovative products to engage and attract the fast-growing sector of high-net-worth individuals via its own version of donor-advised funds (DAF). Wealth management companies are actively seeking to cross over and tap into the philanthropic industry. Meanwhile, Chinese foundations are actively learning from the experiences of their US counterparts, and some are already in the process of launching their own versions of DAF (although there is no Chinese law permitting DAF structures just yet). The total donations from the top 100 Chinese privately owned companies, individuals, and families for 2018 and 2019 were RMB 25.6 billion (roughly USD \$4 billion) and RMB 159 billion (roughly USD \$24 billion), respectively.



Since 2019, the concept of using science and technology for good has continued to spread rapidly, and it will be more widely integrated into the values and development strategies of large, domestic, high-tech enterprises. More and more charitable organizations and social innovation projects have begun to focus on how to exercise the power of science and technology to effectively solve social problems. On the one hand, the combination of technology and philanthropy unblocked new channels through which high-tech enterprises could participate in philanthropy and impact investment and enhance the application value of their high tech; on the other hand, it also promotes the high-quality development of China's philanthropy. Governance innovation provides strong technical support. In 2019, China had 449.28 million fixed Internet broadband access users, an increase of 41.9 million over the end of the previous year, and mobile Internet user access traffic was 122 billion GB, an increase of 71.6% over the previous year. In the whole year, the software and information technology service industry achieved software business revenue of 7,176.8 billion yuan, an increase of 15.4% over the previous year. In 2019, China realized the precommercial use of 5G for the fifth generation of mobile communications. The

continuous improvement of Internet infrastructure and coverage provides a basic guarantee for a role for science and technology in China's philanthropy sector.

The launch of the Charity Law in 2018 was originally intended to develop philanthropy with the theme of private charity organizations, but it encountered many difficulties in subsequent practice. What actually happened in 2019 was the socialization and re-emergence of government-run philanthropy, and governance gradually absorbed charity, letting charity serve the overall situation of the entire national governance system. At the same time, with the rise of commercial philanthropy, a new trend has emerged for companies to participate directly in philanthropy, and the trend has increasingly demonstrated the advantages of resources, manpower, and technology. Corporate foundations have become an important platform for China's philanthropy. Looking to the future, we can see that in the national governance system, China's philanthropy will inevitably generate diverse discourses and practices in response to the requirements of government, business, and society.

12

Social Innovation is Key to Safe E-Waste Disposal

Frank-Jürgen Richter

Chairman, Horasis

Dr. Frank-Jürgen Richter is the Chairman of Horasis - a global visions community dedicated to inspiring our future. Horasis is using its unrivalled history of partnership with corporations from emerging markets to create a powerful platform for cooperation between emerging and developed markets. The flagship events are the Horasis Global Meeting as well as regional summits focusing on China, India, and South East Asia. He has developed an extensive experience and knowledge on the world's economic, business and political scene and of its key players. As one of the leading analysts of international business, he influences major business and governmental decisions with his public commentary. Prior to founding Horasis, Dr. Richter was a Director of the World Economic Forum. He also lived, studied and worked in Asia for almost a decade, principally in Tokyo and in Beijing where he developed and managed European Multinationals' China operations.





Social innovation, in simple terms, is to develop and implement practices that yield more positive outcomes for individuals and societies alike. More importantly, it is a conscious effort to try and undo a share of the enormous negative consequences that have been complementary to socio-economic progress.

A pressing need is to adopt more sustainable practices, and to focus efforts towards steadily limiting waste, in all forms, by governments, businesses and individuals. But to ensure successful outcomes, there is no alternative but to collaborate across sectors.

In terms of limiting waste, a key area that demands more attention is electronic waste or e-waste generation. Electronic devices have become commonplace. They are proven enablers. And amid the pandemic, these devices helped in continuing education or work for millions worldwide. However, when the lifecycle of that product comes to an end, very few safely dispose them. Most have no knowledge of how to dispose them and awareness around e-waste's adverse effects is not commonplace.

Just to gauge the enormity of the problem, here is a statistic from 2019. Each human being on this planet generated 7.3kg of e-waste¹ in 2019.

"Each human being on this planet generated 7.3kg of e-waste¹ in 2019."



Electronic device ownership will only increase further.

The smartphone user base currently stands at 6.37 billion – up from 3.67 billion only five years² ago. Estimates peg that, by 2026, there will be as many as 7.5 billion smartphone users³ worldwide. Personal computers, meanwhile, saw a huge spike in ownership in 2020 amid the shift to remote working and online learning. Over 172 million units⁴ have already been sold globally in 2021.

Ever since the invention of Apple's iPhone, smartphones particularly have become indispensable for work, entertainment, study and communication. However, smartphones are only one of several electronic devices that an average household uses. In the US, for example, there was an average of 11 devices per household in 2019⁵ itself.

Many electronic devices, meanwhile, have a fairly short lifecycle. They could either stop functioning or become obsolete, and eventually become waste.

Most developed economies already have well-established guidelines for treating organic, plastic or paper waste. But in the case of e-waste, clear disposal frameworks

are lacking. Several manufacturers do offer a buy-back policy but the 'bought-back' items are often shipped to less affluent economies.

According to the US Environmental Protection Agency⁶, "An undetermined amount of used electronics is shipped from the United States and other developed countries to developing countries that lack the capacity to reject imports or to handle these materials appropriately". The Basel Convention⁷ framework did outline the prohibition of this practice but a loophole exists⁸. Discarded electronics can be shipped to a third country by deeming the e-waste as material that can be repaired. It is a clear shifting of responsibility in terms of managing the soon-to-be waste product.

In this regard, the Electronics TakeBack Coalition⁹ (ETBC)—a non-profit organization—encourages the adoption of responsible practices in the e-waste recycling sector. The ETBC implores consumer electronics manufacturers to take full responsibility to not only offer products that keep sustainability at their core, but also ensure their safe disposal.



Recycling must be regulated to ensure safety and prosperity.

The bulk of e-waste recycling facilities in emerging economies, are unfortunately, very loosely monitored. As a result, while a large number of facilities are recycling electronic devices in the literal sense, they are, by no means, benefitting the environment. If anything, such crude practices are a hazard.

According to a 2019 UN report¹⁰, of the total 50 million tons of e-waste generated annually, only 20 percent was recycled using safe practices. To put this into perspective, 50 million tons of e-waste is worth a staggering \$62.5 billion.

However, there is a fine line that must be tread. On one end of the spectrum, these unregulated facilities are severe environmental threats. But on the other, they generate employment for thousands who have, otherwise, no other alternative to ensure their sustenance. In Nigeria, for example, as many as 100,000 workers are employed in the informal e-waste sector¹¹. This is an apt example of a scenario where cross-sector collaboration is needed, more so between the public and private sector waste management efforts. Collaborative efforts will ensure safer working conditions and the adoption of less harmful recycling processes.

The Nigerian administration has taken cognizance of this problem. There is now a formal waste recycling framework in effect to encourage the adoption of safe practices.

E-waste recycling also holds enormous economic potential. Take the case of China. It is estimated that the value of metals discarded as e-waste in China will be worth \$23.8 billion by 2030¹². These metals can be retrieved at significantly lower costs than having to mine them. China has the opportunity to generate enormous wealth by participating in the circular economy, since it is both a large manufacturer and consumer of electronics. It also has environmental gains. If China manages to reach e-waste recycling rates of the EU (85 percent recycling of both mobile phones and computers), it would save 30 billion kilowatts of energy which would otherwise go into mining these metals. This also means that China could offset 22 million tons of carbon emissions.



Conscious efforts are being allocated.

In terms of successful government efforts, Switzerland has emerged a global leader in e-waste recycling. In 2019, it recycled as much as 75 percent¹³ of all its discarded consumer electronics. The recycling rate topped 95 percent¹⁴ for smartphones.

Switzerland is also assisting Ghana in adopting a more conscious approach to e-waste recycling. In a dubious distinction, the African economy's Agbogbloshie landfill¹⁵ acquired the moniker of being the world's most polluted area – ahead of even Chernobyl in Ukraine.

On a basic level, concepts like social innovation must be introduced to individuals during their formative years. Just as sports and academics are prioritized as being key to holistic development, so too are ideals that focus on being conscious global citizens.

Regardless of organic, plastic or electronic waste, the fact that they must all be discarded with caution is a critical learning that everybody must imbibe. It will, without doubt, ensure a better planet for generations to come. This primary responsibility cannot be shirked—and at the very basic level—begins with us.

13

Reducing Our Global Footprint

Nathalie Bastianelli

Founder of WeBelongtoChange

Nathalie Bastianelli, former CEO of two Havas Media subsidiaries in Beijing and Shanghai, is a committed entrepreneur and lecturer who helps ecosystems to become more sustainable through her consulting company Authentika. Founder of the NGO WeBelongtoChange, Nathalie is dedicated to promoting sustainable innovations and conscious consumption (the eponymous forum in China has been followed live by millions of Chinese internet users). She is now the author of the book "When China Goes Green... - an untold testimony on the Chinese that commit to the planet" (Oct. 2021, English version to come).





"Regardless of the rate of reduction of greenhouse gas emissions, the devastating impacts of global warming will accelerate and become painfully palpable well before 2050. We need a radical transformation and must redefine the way we live and consume."

-Excerpt from the Intergovernmental Panel on Climate Change (June 2021)

For decades, mass consumption has been deeply rooted in people's minds. It has long been considered a personal achievement. It is now time to change that cultural model, to promote other values and to better inform consumers about their own impact, so that they are empowered to change their consumption habits by consuming less. Consumers can easily feel powerless and overwhelmed. They don't always have the tools and credible information, or the means, needed to make informed consumption choices that are environmentally responsible. The limited number of virtuous products, their higher price, and the lack of information – such as the absence of ecological labelling, for example – are real obstacles to more responsible consumption. However, we will not be able to make the situation evolve positively and save mankind or this planet without changing our behavior and consumption habits.



There are four items that consumers can reduce in order to reduce greenhouse gases. They are: food, transportation, housing and savings. The average citizen can drastically reduce his/her meat consumption and adopt a vegetable-based diet. Food producers can label food according to environmental footprint, so that consumers are more aware of where it is coming from. People can abandon driving cars and opt for low-carbon vehicles or public transportation. We can all fly a little less and take vacations closer to home or opt for the train, which is 45 times less impactful than an airplane, or even put a fee on “frequent flyers”. Homeowners should install renewable energy heating systems, modernize insulation, or upgrade heating and air conditioning systems. The financial sector can invest in more green investments or companies with an emphasis on impact and ESG. We can all get behind new collaborative economic practices, such as renting products, from clothes and tools to cars, or buying second-hand items, so that less waste ends up in landfills.

As for companies, they have the responsibility to design and produce more environmentally friendly products, so

that the impact can be amplified millions or even billions of times. This involves changes to production processes, manufacturing, raw and secondary materials, the reorganization of logistics (transportation, distribution, and storage), the relocation of activities, waste recycling and the abandonment of an economic model focused purely on increasing profits.

Between the improvement of air quality and the return of animals to cities and the countryside, the COVID-19 pandemic – despite its devastating human and economic consequences – has changed people’s consciousness. A part of the world’s population has indeed been led to rethink its lifestyles and its relationship with nature. Some new behaviors have evolved in food choices (like shopping closer to home and cooking with the family), in work (like travelling less, slowing down), in leisure (like more outdoor exercise and emphasis on well-being), but also in communication with one’s loved ones or in personal development practices, like online training. This is good news, because for the world to change, everyone must become aware of their actions and implement new habits.



Our external environment is inseparable from our internal environment. In order to change the world, we must change ourselves first. In many parts of the world, people have developed lifestyles that seek happiness by living more simply, buying better and less, with reduced stress and more authenticity. Often times, respecting one's own inner nature, one's instinctive, emotional, and intuitive world, are forgotten or devalued in modern society. These are lifestyle choices that challenge the belief - pushed by corporations and advertisers - that the acquisition of consumer goods is a necessary and sufficient condition for happiness. Many people own lots of stuff and yet are unhappy. This is what we call conscious consumption, a way of living that respects one's own balance and that of the ecosystems.

With this new environmental consciousness that is emerging many are veering farther away from the "all-consumption" mode to create societal movements, like the "Flygskam" or flight shame, an anti-flying movement or the "kopskam" or shame of buying movement, both born in Sweden. Will there be others? We may never know. What we do know is that we are at a turning point in humanity, and it is time to enter the era of the consum'actor. Albert Einstein once said, "You will not solve your problems with the same mindset that created them."

"Our external environment is inseparable from our internal environment.
In order to change the world, we must change ourselves first."

14

A Step Towards Mutual Prosperity Putting Purpose into Practice: The Economics of Mutuality

Bruno Roche

**Founder, Economics
of Mutuality**

Bruno Roche is the founder and leader of the Economics of Mutuality platform. He served as the Chief Economist at Mars, Incorporated between 2006 and 2020. In that position, he led Catalyst, a global thought leadership capability and internal corporate think tank to Mars, which was the laboratory for the Economics of Mutuality from 2006.





The economy has changed but the economic model has not.

Today's world is one where business operates within an outdated profit construct corresponding to the economic reality of the 1970's, when financial capital was scarce but other forms of capital (natural, social & human) were not.

Over the last 50 years, the nature of scarcity has reversed, with financial capital overly abundant and other forms of capital increasingly scarce. Economics is fundamentally about managing scarcity yet has failed to evolve the global model to the new reality, and is instead continuing to focus dysfunctionally on financial capital creation. Over the same half century, the size and reach of MNCs grew exponentially, transforming business into big global organizations with unprecedented power, rivalling even that of the nation state. Yet, the continuing profit maximization approach of business leaders have left them ill equipped to manage the new complexities of today. Meanwhile, the financial sector, whose original purpose was to provide liquidity for the real economy, has become a disconnected parallel system. Today, over \$10 trillion of bonds trade with negative yields – meaning fiduciaries are willing to accept a guaranteed loss. The financial sector is not only no longer in the service of the real economy, it is no longer in the service of itself.

The consequence of these major shifts is a sub-optimal system that is distorting the positive role of business in society by making it a driver of inequality and environmental degradation, depriving the firm of growth and value creation opportunities. Today, there is a duty and an opportunity for business leaders, investors, management schools and policy makers to reposition the corporation positively, in ways that reflect the changing needs of society and the environment.



Requests for sustainability are largely going unfulfilled.

Stakeholders around the world are increasingly demanding sustainability in businesses. Among consumers today, some 94% say purpose is important in business, and 82% of consumers say they act for purposeful brands. Some 90% of top corporations published sustainability reports in 2019

(compared to only 20% in 2011) and 72% of the companies in the G25 are now connecting their reporting to the UN Sustainable Development Goals (SDGs). Yet, only 37% believe companies actually have a clear and strong purpose.

Beyond sustainability and social responsibility – An Economics of Mutuality.

"Like the dieter who would rather do anything to lose weight than actually eat less, this business elite would save the world through social impact investing, entrepreneurship, sustainable capitalism, philanthro-capitalism, artificial intelligence, market-driven solutions. They would fund a million of these buzzwordy programs rather than **fundamentally question the rules of the game** — or even alter their own behavior to reduce the harm of the existing distorted, inefficient and unfair rules."

Joseph Stiglitz, 2021

Fifteen years earlier, in 2007, spurred by Mars Incorporated management's far-sighted and fundamental question -

'**what should be the right level of profit**', a small group of business leaders and academic researchers started to

explore the relationship between the modes of profit-making and business performance. This initiative quickly evolved into a multi-year program of in-depth academic research with the Said Business School of Oxford University, business field experimentation, in-depth reviews of best practices, and a large number of business pilots with Mars and other large companies.

This initiative is called the **Economics of Mutuality**. It is an emerging new school of thought and a management innovation empowering business and investors to adopt a less incomplete form of capitalism that is fairer and more efficient than the purely financial one still dominating business practice today.

It is built on the premise that an organization based on

an ecosystem-centric approach (the ecosystem being defined by the purpose¹) and on a holistic approach to value creation with the stakeholders within that ecosystem that are material to the purpose leveraging human, social, natural, and shared financial forms of capital² by developing reciprocal relationships (as opposed to power relationships) will outperform an organization whose purpose is to maximize profits for shareholders.

To rediscover its vocation, business does therefore not need to focus exclusively on short-term financial capital remuneration. It is not even in its own interest. At the heart of this breakthrough emerge new modes of profit construction and a new relationship between business, society, the environment and work paving the way to a mutual prosperity.



Putting Purpose into Practice: The Economics of Mutuality was published in 2021 by Oxford University Press.

This book was edited by Oxford University's Professor Colin Mayer CBE and Economics of Mutuality Founder and Executive Director and Former Mars Chief Economist Bruno Roche. It is based on fifteen years of in-depth academic research and business practice led by the Economics of Mutuality team, Mars, Incorporated and Oxford University's Said Business School. It explores how the Economics of Mutuality management innovation empowers business to thrive by meeting the needs of the world. It includes chapters written by responsible business experts, as well as in-depth case studies covering a wide range of contexts.

An online copy available to read free of charge at www.purposeintopractice.org. The website also features recordings of an accompanying webinar series that ran between March and May 2021 featuring guest speakers including purposeful business champion Paul Polman.

Businesses

One of the major building blocks to combating societal issues, companies are nowadays expected to demonstrate corporate social responsibility, as many issues facing humanity cannot be solved without companies doing their part. However, is it possible for companies to solve these issues alone?

15 The Future of Green Finance and Impact Investment	71
Gao Erji, Vice President, Caixin Media	
16 Bridging the Environmental Sustainability Gap	75
Alfredo Montufar-Helu, Beijing Director, Economist Intelligence Corporate Network, The Economist Group	
17 Radical innovation – Only Half the Story	79
Mauricio Bermudez Neubauer, Managing Director, Accenture	
18 Infrastructure and Climate Change: The Role of Sustainable Infrastructure in the Transition to Low Carbon Economies	83
Gregory Hodgkinson, Senior Advisor and Former Chairman, Arup Group	
19 Leading a Lower Carbon Future	87
Fernando Vallina, Chairman, ExxonMobil (China) Investment Co., Ltd.	
20 Creating a Sustainable World One Product at a Time	92
Jun Shen, Unilever Homecare North Asia R&D and Global Innovation Hub Director and Senior Engineer	
21 How Furniture Manufacturing Can Contribute to Net-Zero	96
Zhao Xiaobin, Co-Founder and CEO, Cambond	
22 What I Learnt from the Pandemic about Education	99
Lina Getachew Ayenew, Founder and CEO, Education for Ethiopia	
23 Making Social Responsibility a Competitive Advantage for Multinationals in China	102
Callum Douglas, Corporate Responsibility Director, PwC	

15

The Future of Green Finance and Impact Investment

Gao Erji

Vice President, Caixin Media

Gao Erji is a vice president of Caixin Media in charge of the group's capital operations and strategic development. He is also executive president of Caixin Insight, Caixin's data and research arm. As an investment industry veteran, Gao has advised some of China's largest corporations on capitalization and cross-border M&A. Before joining Caixin Media, Gao was an investment banker at Citic Securities and HSBC. Gao is a valued adviser to many influential global think tanks, including as an industry expert of the Digital Economy Committee of the Asia-Pacific Economic Cooperation (APEC), a member of the Smart City Expo World Congress Greater China Advisory Board, an invited researcher of the China Carbon Neutrality Forum, an independent board member of Zhangjiakou News Media Group Co. Ltd., etc.





Green finance and impact investment are not emerging concepts, and the study of social responsibility and governance is well established in the investment industry. Following the official announcement of the Chinese government's peak carbon and carbon neutrality goals (double carbon goals) in 2020, carbon finance concepts are once again receiving widespread attention. This attention has also gradually penetrated into various concepts in the broader ESG investment space.

The Chinese government's expectations for carbon neutrality are not limited to only the green transformation of China's traditional industries, but they also include the further industrial upgrading and social modernization that can be achieved by advancing the green transformation of the economy. At the same time, the concept of impact investment is gaining more and more attention as it has had a very positive impact on advancing China's new economy and high-quality growth goals.



In my view: high quality equals new economy plus ESG.

Firstly, the double carbon goals will bring huge investment opportunities, especially in the transformation of the “brown industry” that accounts for a huge proportion of China’s industrial market.

According to forecasts by the National Development and Reform Commission, Tsinghua University, CICC and Caixin Insight, achieving “carbon neutrality” by 2060 will require more than 140 trillion yuan (\$21.9 trillion) in new green investment. By industry, electricity, transportation and construction will have the greatest need for green investment.

Secondly, the carbon emission trading market will continue to grow, becoming one of the main forces in promoting carbon emission reduction and financial innovation.

In 2005, the European Union first announced its Emissions Trading Scheme (ETS), which is a carbon trading mechanism established in accordance with EU decrees and national legislation. Currently, it is the carbon emissions trading market with the largest number of participating countries and the largest transaction volume in the world. In terms of market scale, the carbon trading volume of the EU’s ETS was around 169 billion euros (\$193.4 billion) in 2020, accounting for 88% of the global carbon market. In terms of emission reduction effects, the EU’s carbon emissions in 2019 were down 23% from their level in 1990.

China has established eight local pilot carbon trading venues for Chinese Certified Emission Reductions (CCER). In 2021, the country also set up a unified national Chinese Emission Allowance (CEA) market with a dual trading center structure in Wuhan and Shanghai.

The carbon finance market system is similar to that of traditional financial markets, in that it includes trading, financing and support systems, and the trading system also consists of both primary and secondary markets. It is worth looking forward to the programs and initiatives that will be introduced in terms of compliance management and product innovation.

Thirdly, green investment should be combined with research into carbon-negative technologies to help cultivate low-carbon industries.

One of the core objectives of carbon neutrality is to promote the development and application of carbon-negative technologies. The route to “carbon neutral” technologies is made up of two technical paths: “subtractive” and “additive.” The first refers to the reduction of carbon dioxide emissions (supply-side emission reduction and demand-side emission reduction), while “addition” refers to increasing the amount of carbon absorbed by CO₂.

These different technological routes are widely seen by the scientific and investment communities as evolving as the corresponding technologies mature. In the next decade, clean energy and electric vehicle applications will dominate development of green technology, followed by energy storage and hydrogen. In the decade after that, cutting-edge technologies such as carbon capture, utilization and storage (CCUS) and bio-energy and carbon capture and storage (BECCS) will be rolled out commercially.

Research into the application of low carbon technologies for specific industries, and the development of industrial low carbon knowledge graphs will be critical in the future. They will become an encyclopedia to guide the direction of investment in the future. This will require the intervention of many cross-disciplines, including sciences of science, industrial economics, social-economics, anthropology and artificial intelligence.

We have recently noticed that a number of local governments have already started working with data providers to establish local green investment project databases, structuring the data about these green projects into categories such as region, technology, capital amount and cooperation needs, so as to facilitate project screening by investment institutions, which is a very useful effort.

In line with the general pattern of new technology development and adoption, venture capital and private equity institutions will need to have a longer-term investment horizon and a more objective and pragmatic approach when investing in green technology startups. Fourthly, in addition to active investment, ESG investors should make more use of passive investment tools to give long-term support to listed companies in green industries.

Passive investment strategies based on ESG factors should become the mainstream capital management strategy in the era of carbon neutrality.

Currently, the global ESG investment portfolio size has risen from \$18.3 trillion in 2014 to \$40.5 trillion in 2020,

an increase of 122%. This compares with a rise of just 36% for other categories of investment over the same period.

Because achieving the dual carbon goal involves a systematic, comprehensive and long-term transformation, a passive investment strategy oriented toward a basket of assets and based on ESG performance can better simulate the general trend.

ESG performance-based passive portfolios are public-service oriented in nature and better reflect the simple logic of short-term investment for long-term returns on topics such as carbon neutrality, especially for pension funds and government public investment institutions, a product category worthy of attention and distribution.

Finally, it is important to emphasize that carbon reduction is in the common interest of all humankind, and therefore carbon issues should not be used as a diplomatic tool.

We note that recently, mature carbon markets such as Europe and the U.S. have been discussing and launching initiatives such as "carbon tariffs" and ESG reviews of supply chains in developing countries. While these are efforts to advance the global goal of carbon neutrality, they should be pursued together with equal respect for the rights of people in all countries to live and develop. It is also in the fundamental interest of developed countries to give greater recognition as well as technical and financial support to developing countries in their efforts to reduce carbon emissions.

If the subject of carbon is used to set financial and commercial cooperation thresholds, forming a new diplomatic tool, it would be a complete departure from the original intent of the emissions reduction.

It is worth looking forward to the development of carbon finance as a broad, international financial cooperation mechanism and an important part of building a community of human destiny, because of the borderless nature of the carbon neutral cause.

16

Bridging the Environmental Sustainability Gap

Alfredo Montufar-Helu

**Beijing Director, Economist Intelligence Corporate Network,
The Economist Group**

Alfredo is the director of the Economist Intelligence Corporate Network, the C-suite briefing and networking arm of The Economist Group, and oversees its operations in Beijing. Based in China since 2013, Alfredo has focused on analyzing the business implications of policy, economic and political developments for companies investing and operating in China, and in the broader Asian region.





In exposing the many vulnerabilities of our interconnected world, the COVID-19 pandemic has also brought to light the criticality of increasing the sustainability of development at a faster pace, as countries look to shore up resilience against future disruption and global risks events.

However, one of the main challenges towards building a more sustainable future is a growing investment gap. This challenge is especially acute for developing countries, which were estimated to require an additional USD \$2.5 trillion in investment per year to achieve the SDGs¹. The impact of the pandemic has widened this gap, with the OECD estimating that in 2020 these economies faced an additional investment shortfall of USD \$1.7 trillion². Considering the ongoing pressures on governments' fiscal capacity, it has become imperative to attract more private capital into bridging this investment gap.

"One of the main challenges towards building a more sustainable future is a growing investment gap."



There are several reasons to be optimistic about the positive role that private capital can play. First is that there is a growing pool of capital available for investment: at the end of 2019, non-banking financial institutions and commercial banks respectively managed a total of USD \$200.2 trillion and USD \$155.4 trillion, up by 77.5% and 46.6% from 2010 levels³. Some of this is in 'dry powder,' i.e. capital that while already committed by investors has still not been invested or allocated. It is estimated, for instance, that private equity (PE) firms have a total of USD \$1.9 trillion in dry powder globally⁴.

Second is that sustainability considerations have become front of mind for investors in the search for alpha and risk-adjusted returns given: rising social pressures on companies to behave as 'good citizens,' and the risks of reputational damage and boycotting if they don't; increasing risks to the long-term value of assets owing to climate change and natural disasters; tighter environmental regulations and emission standards; and the expected phasing out of carbon-intensive assets.

In fact, in a recent survey to 450 global institutional investors, over 70% said that their investments which integrated environmental, social and corporate governance (ESG) factors performed better financially than equivalent traditional investments in both 2020 and the three years prior. Also, 65% said that over the next 12 months they will use ESG factors in the investment process for at least 25%

of assets under management (AUM), while 32% will do the same for at least 50% of AUM⁵.

Data also show a rapid increase in the amount of private capital being deployed in sustainable assets. This includes USD \$778 billion raised in sustainable bonds during the first nine months of 2021, which is more than ten times the amount raised in 2015 (USD \$60.4 billion); and USD \$448 billion in sustainable loans, up from USD \$194 billion in 2019⁶. Moreover, net inflows to sustainable funds globally are estimated to have surpassed USD \$300 billion in 2020, up from USD \$159 billion in 2019⁷.

Having said this, the reality is that private capital will only be attracted to assets that are financially viable, with an acceptable risk profile, and which are structured appropriately so that risks are allocated to the parties best placed to manage them.

It is therefore not surprising that most of the capital is captured by developed countries. Besides their strong institutional and regulatory systems, they offer favorable business environments adapted to international best practices and standards, and mature financing systems. In comparison, developing countries carry higher risks and are thought of as lacking investable opportunities – a situation that has worsened due to the pandemic. No wonder then that they just accounted for 3% of sustainable fund investments in 2020⁸.

Bridging the sustainable investment gap in developing countries requires promoting international cooperation among governments, multilateral organizations, companies and civil society across several dimensions. While it is not the purpose of this article to examine them at length, four stand out:

1 Building institutional capacity

Governments can work with multilaterals and specialized consultancies to identify and address institutional weaknesses with the aim of providing regulatory certainty to international capital providers. Multilaterals can also help governments offer mechanisms to lower political risks (e.g. credit enhancement and sovereign guarantee products) to mobilize private capital.

2 Developing common standards

Governments can work together to promote the harmonization of ESG standards and environmental regulations, thereby helping investors from different markets better identify opportunities and risks. One of the best examples is the 'Common Ground Taxonomy' for sustainable investments which is being developed by China and the EU⁹.

3 Adopting ESG best practices

Companies looking to attract sustainable investment can work together with NGOs, professional service firms and multilaterals to adopt best practices on ESG, including around data collection and disclosure so that potential investors can more easily evaluate performance and progress.

4 Enhancing financing channels for nascent solutions

Governments can establish co-investment schemes to attract VC funds and philanthropists to invest in startups that are developing innovative solutions and technologies – and which are as of yet not commercially viable – to address climate change and environmental degradation.

One last thing to mention is that sustainability cannot be understood as only covering aspects related to climate change and the environment. It also covers societal issues such as income inequality and poverty; and social injustice and discrimination. Left unaddressed, these issues have been proven to fuel social discontent and feed into 'us vs them' narratives, driving protectionism, populism, xenophobia, and ideological extremism. They erode the potential for international cooperation and, in so doing, threaten global long-term prosperity. It is therefore necessary to think about solutions that can address the root causes of these issues, and about the potential role that private capital can play in this.

17

Radical Innovation – Only Half the Story

Mauricio Bermudez Neubauer

Managing Director, Accenture

Dr. Mauricio Bermudez Neubauer is a Managing Director in Accenture's Sustainability Services, where he is the global lead for Carbon Strategy and Intelligence. Neubauer is a strategist, business and thought leader with nearly 20 years' experience supporting organisations in the transition to the Future Economy - the intersection between the Low Carbon, Circular, Ethical and Digital economies. He has deep expertise in markets and assets in the utilities, energy and energy intensive industries and he helps utilities, renewable energy producers, oil and gas companies, energy intensive industrials and large energy users protect and create value across multiple functional and thematic areas.





To reach ambitious climate targets by mid-century, radical innovation will be critical and it won't happen unless we deploy unprecedented levels of collaboration.

The enormity of the challenge to reach net-zero emissions by the middle of this century, required to limit global warming to 1.5°C, cannot be overstated. It requires much more than traditional, gradual innovation – we need to rethink and reinvent business models, consumption behaviors, production systems and entire value chains. This will only be possible if individuals, governments and businesses collaborate – because the challenges are so large and so interconnected that our only hope of solving them is by doing so together.

Much like climate itself, achieving net zero represents an incredibly complex system where every action and event is connected to a wide range of others. This means that no company, or even industry, can decarbonize by itself. Innovation is required across and between economic actors and sectors.



For example, a major oil company transitioning to renewable energy is of course a positive step, but it would only be a small part of making the transportation system fully net zero. That requires cooperation across a range of industries from minerals and steel, power and utilities, automotive, oil and petrochemicals, aggregates and construction and more. It needs the right policies to stimulate all those industries to make the change. And it needs employees with the tools and skills to execute it and consumers with the willingness to change their mobility habits.

Or if we think about carbon capture use and storage, whether engineered or from nature-based solutions, the implications across industries are huge. To adopt nature-based solutions at the necessary scale to achieve negative emissions by the end of the century we will need to reduce the amount of arable land

worldwide to give it over to reforestation. That means we will need much more innovation in terms of urban, 'vertical' farming and a major reorganization of both cities and food supply chains – a massive change for the agricultural, transportation and government sectors.

An important starting point for the solution is thinking of it in terms of virtuous circles. Citizens need to change their consumption preferences as well as elect politicians who will drive net-zero agendas.

Governments must provide businesses, investors and consumers the policies and incentives they need to make the necessary changes to their lifestyles and business models. At the same time, businesses must advocate for net-zero regulations, help to educate citizens about cleaner products and services and transform their businesses to provide them.

"Innovation will be key, but only by finding new ways of collaborating and cooperating across actors and sectors will we be able to respond to this challenge at the pace and scale required."

How can businesses start putting this into practice today? There are four key elements.

- 1** The first is sharing, meaning the non-competitive, or at least pre-competitive, transparent sharing of knowledge, information, and learning that can unlock industry-wide solutions toward emissions reductions. Such exchanges with industry-relevant local or regional partners can accelerate the development and uptake of the kind of changes needed at scale. Germany's Fraunhofer-Gesellschaft and the UK Government's "Catapults" are good examples of public-private partnerships for shared industrial IP development and commercializing applied research. Larger, global examples of this, focused on key net-zero technologies, could make a big difference to accelerating global industrial innovation.
- 2** The second is creating bilateral, multilateral or cross-value-chain partnerships to deliver practical solutions. Initiatives in this area focus on establishing partnerships within and across industries and working with public-private stakeholders to bring to market solutions that benefit everyone. Walmart launched Project Gigaton in 2017 with the aim of avoiding one billion tons of greenhouse gasses across its supply chain – scope 3 emissions – by 2030. It involves more than 2,300 of retailer's largest suppliers globally, each of which has created targets and measures progress that it then reports to Walmart. As well as its suppliers, Walmart involved several NGOs in the plan, including the Environmental Defense Fund. In the project's first two years it saved 230 million tons of emissions cumulatively. Industrial clusters, which comprise co-located industrial companies from one or more sectors, are also great examples of opportunities to scale low-carbon solutions by sharing risk and resources.
- 3** The third element is investment – securing the financing to drive innovation at speed and scale. Initiatives in this area aim to fuel innovation (and, ultimately, disruptive solutions) in the market. The investments can be in innovative start-ups, product- and business-model development, thought leadership, R&D, and non-commercial third parties such as NGOs or academia. FlyZero is an initiative backed by the UK government that aims to realize zero-carbon emission commercial aviation by 2030. It brings together more than 100 experts from a wide range of fields including design, manufacturing, operations, economics, supply chains and the environment, to tackle the entire scope of the challenge. In 2022 the initiative plans to unveil three concept aircraft that will address the challenges of zero-emission aviation.
- 4** The fourth is around comprehensive, well-coordinated policy packages and enabling regulatory environments. Initiatives in this area provide a broad series of positive and negative incentives spanning regulations, grants, standards, taxes and subsidies that work in concert to steer a shift towards a lower-emissions economy. The EU Green Deal, a major set of policies developed to deliver the EU's sustainability goals, is a good example. It encompasses a wide range of issues and initiatives from clean air to healthy food and from public transport to clean energy. We will need many such Green Deals, coordinated with each other to avoid tilted playing fields or trade disruptions.

To halve emissions by 2030 and move to net zero over the following 20 years will be the most complex undertaking the world has ever seen. The task is daunting, but there are good reasons to believe we can achieve this goal. Innovation will be key, but only by finding new ways of collaborating and cooperating across actors and sectors will we be able to respond to this challenge at the pace and scale required.

18

Infrastructure and Climate Change: The Role of Sustainable Infrastructure in the Transition to Low Carbon Economies

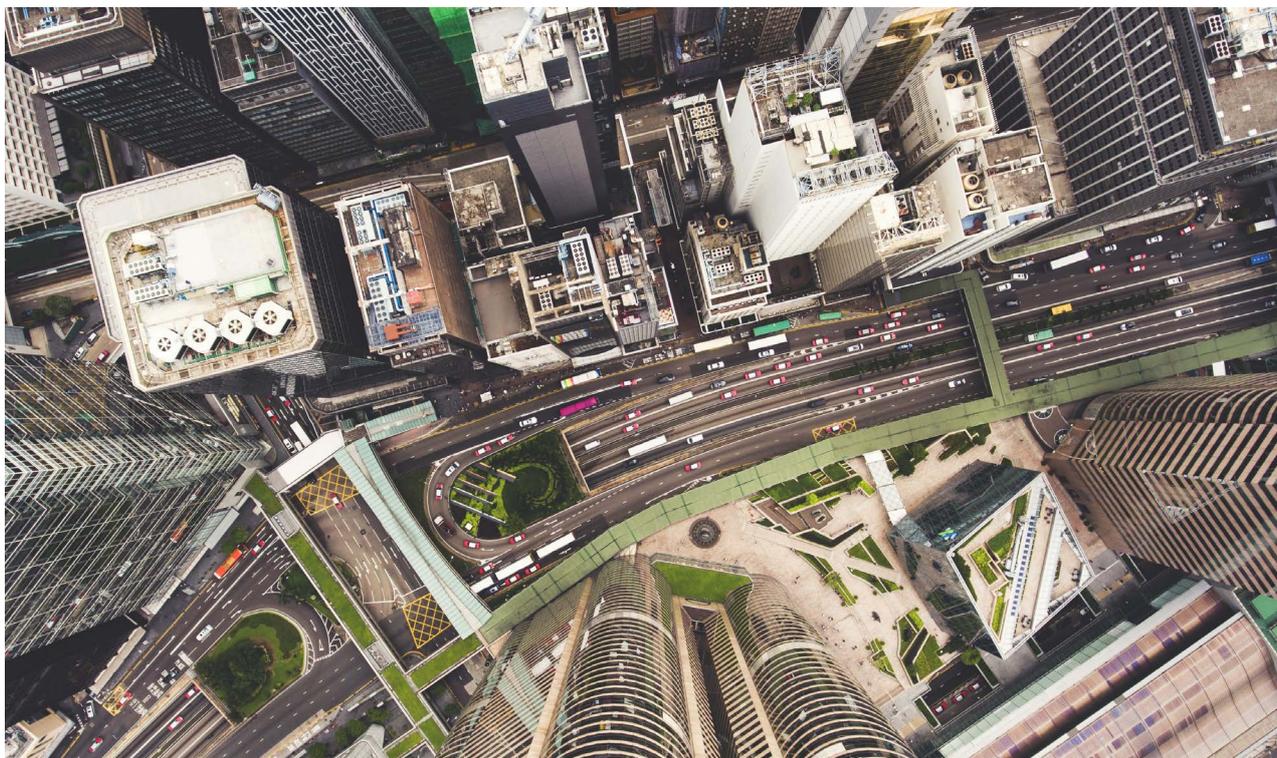
Gregory Hodkinson

Senior Advisor and Former Chairman, Arup Group

Gregory Hodkinson was the Chairman of Arup Group from 2014 to 2019, having previously served as Director of Europe Division and Chairman of the Americas Region Board. He has 40 years of experience in civil infrastructure, particularly in transportation projects worldwide. This includes large-scale projects such as JetBlue, British Airways and Delta Airlines terminals at JFK International in New York, New Terminal Development for Toronto's Pearson International Airport, Fulton Street Transit Center, and Second Avenue Subway in New York.

Having joined Arup in 1972, Hodkinson worked on major urban development and transport projects in Australia and the UK, before going on to lead the firm's expansion in the US in 1988. In 2011, he moved to Milan to lead the firm's European business.





The role of infrastructure is to stimulate and facilitate social and economic development by connecting, supporting and protecting society. Unfortunately for society at this time, the vast majority of the infrastructure we have is not fit for purpose against the backdrop of humanity's greatest challenge, which is the existential threat represented by climate change.

Infrastructure consists of hard and soft components, the latter including digital and regulatory components. We have seen the speed with which digital components have evolved and are readily superseded. The policy components too can move quickly when the need is urgent (witness the actions of governments to address the COVID-19 pandemic), but the hard components of our civil and social infrastructure – transport, energy, water and sanitation, education, health, etc. – are normally years in the planning and one, two, or even more human generations in their operating life. If our infrastructure, as the great majority currently does, generates high carbon emissions in its development and, more importantly, in its operation, we will continue to generate high carbon emissions because of our infrastructure for a very long time to come, such that containing average global warming to 1.5 or even 2.0 degrees C above the pre-industrial average is impossible.

"The vast majority of the infrastructure we have is not fit for purpose against the backdrop of humanity's greatest challenge, which is the existential threat represented by climate change. Will we be able to respond to this challenge at the pace and scale required."



Addressing the worst threats of climate change – catastrophic weather events, flooding, drought, oceanic warming, etc. – will therefore require a radical restructuring and replacement of our currently high-carbon infrastructure to a low to zero-carbon emitting infrastructure in an unprecedentedly short time for such an undertaking. It is no exaggeration to say that this restructuring and replacement is the largest and most urgent task ever undertaken by humanity.

The size, scale and imperative nature of the task requires close and coordinated collaboration among governments, business, non-profit organizations, civil society and multi-lateral institutions and the sooner we acknowledge this and move forward at scale, the better will be our chance of success, recalling that with an existential threat, failure is not an option.

"The size, scale and imperative nature of the task requires close and coordinated collaboration among governments, business, non-profit organizations, civil society and multi-lateral institutions and the sooner we acknowledge this and move forward at scale, the better will be our chance of success, recalling that with an existential threat, failure is not an option."

The good news is that society is capable of innovation and concerted action when needs must. Although we are yet to move at the required pace and scale, the need to address climate change both in mitigation and adaptation has been widely acknowledged for some years now. Multi-lateral institutions have in many ways taken a lead in researching and communicating the need, as is natural where climate change does not

acknowledge or respect national boundaries. MLI's also have a convening power which is essential to help bring national governments together to agree on targets, commitments and strategies.

Government action is essential because business and civil society operate within policy and regulatory environments that are established by governments



on their behalves. But government action alone is not sufficient to meet the challenge. What is required is for government, business and civil society to collaborate in a coordinated way to achieve the objective of replacing and renewing the world's infrastructure systems so that they are fit for purpose and will connect, support and protect us in a safe, sustainable, resilient and affordable manner for generations to come. If we achieve that, replacing and renewing our infrastructure will be society's greatest-ever investment.

In addition to setting the policy and regulatory frameworks, and because of the scale of the investment required – several trillion dollars per annum over many years – governments also have an essential role in strategic planning and back-stopping infrastructure investments being undertaken on behalf of us all.

Business is called upon to collaborate with governments and with its customers to raise and invest capital for infrastructure replacement and renewal. Many studies by multi-lateral institutions, academia and non-profit organizations point to the need for private capital investment in infrastructure at large scale because of the inability of the public purse to carry the entire weight. The so-called infrastructure funding gap is very significantly driven by population growth, urbanization and economic development, especially in the rapidly developing countries in Africa and Asia, even without fully factoring in the need

to replace all our existing high-carbon infrastructure systems elsewhere. Business can also help bring innovation to the challenge across the whole infrastructure cycle of planning, design, financing, fabricating or constructing, operating, managing and renewing.

Civil society, as the ultimate consumers of civil and industrial goods and services, and as the parents of future generations, have an essential role in stimulating the grass roots of public policy and also in making the choices available to them as citizens and as consumers.

In this regard, perhaps the single most decisive policy tool available is to better relate the market price of carbon emissions to their real cost, acknowledging the cost of environmental damage but more importantly the cost of re-tooling our infrastructure systems to avoid it. Various carbon trading schemes are in place and carbon taxes in some others, but much more could be done to establish a price on carbon emissions that would provide the certainty and level playing field that business needs to thrive and appropriate price signals for consumers of goods and services as they make their choices. If there was a globally equitable carbon price – which need not be a net tax and could be revenue-neutral or even progressive – business and civil society would be in a much better position to get on with the collaboration with governments that will be essential to provide the sustainable infrastructure we so urgently need.

"In this regard, perhaps the single most decisive policy tool available is to better relate the market price of carbon emissions to their real cost, acknowledging the cost of environmental damage but more importantly the cost of re-tooling our infrastructure systems to avoid it."

19

Leading a Lower Carbon Future

Fernando Vallina

Chairman, ExxonMobil (China) Investment Co., Ltd.

Mr. Vallina joined ExxonMobil Chemical in 1987. He has held a wide range of management positions in sales, marketing, technology, planning and supply chain and lived in North America, Europe, the Middle East and Asia. Mr. Vallina was Asia Pacific sales and marketing manager at ExxonMobil Chemical Company, based in Hong Kong from 1997 to 2001. He was global logistics and distribution manager at ExxonMobil Chemical Company before assuming the position of Chairman at ExxonMobil (China) Investment Co., Ltd. on March 1 at 2017.





Over the next 20 years, the global population is expected to increase by 2 billion for a total population of over 9 billion people. There are few challenges more important than meeting the world's growing demand for energy while reducing environmental impacts and the risks of climate change.



Under most third-party scenarios developed by the United Nation' Intergovernmental Panel for Climate Change that meet the objectives of the Paris Agreement, oil and natural gas will continue to play an essential role for decades in meeting the increasing energy demand of a growing and more prosperous global population. The oil and gas industry will play an important role in meeting society's need for energy. ExxonMobil is at the same time committed to supporting efforts to mitigate the risk of climate change, as reflected in the four pillars of the Company's climate strategy: mitigating emissions in our own operations, providing products to help customers reduce their emissions, developing and deploying scalable technology solutions, and proactively engaging on climate-related policy.

With respect to emissions, ExxonMobil has already reduced its own greenhouse gas (GHG) emissions by 11 percent between 2016 and 2020 (by 6% between 2016 and 2019, before the impact of Covid-19). At year-end 2020, the Company exceeded the emission reduction goals it had established in 2018. We aim for industry-leading GHG performance across our businesses by 2030. The Company is also on track to achieve its 2025 emissions intensity reduction plans by the end of 2021, and expects to announce accelerated Scope 1 and Scope 2 reduction plans later this year.

ExxonMobil also plans to grow investments that lower emissions, leveraging the Company's technology, scale, integration, and global footprint. Cumulative low-carbon investments are anticipated to be approximately \$15 billion from 2022 through 2027.

The industry, and ExxonMobil as a part of it, is also responding to product demand growth by delivering solutions that enable customers to meet product performance requirements while reducing their own GHG emissions. In our case, these products and solutions include, among others, natural gas technology, lightweight materials and packaging, and advanced fuels and lubricants. From 2000 through 2020, ExxonMobil has invested more than \$10 billion to research, develop and deploy lower-emission energy solutions, resulting in new products that have eliminated or avoided approximately 520 million tonnes of GHG emissions – the equivalent of taking 110 million passenger vehicles off the road for a year.

However, global challenges like climate change cannot be addressed by any individual country or company, instead, they require cross-sector collaboration and social innovation as a key to achieving successful solutions. As stated by Dean Xiang Bing, "Social Innovation refers

to the collaboration among businesses, governments, multilateral institutions, non-profit organizations and civil society in developing innovative solutions to address humanity's most challenging issues—like income and wealth inequality, social immobility and sustainability.” ExxonMobil's work in reducing emissions and addressing climate change risks ties well with solving these social and environmental challenges.

ExxonMobil believes that charting a pathway to a lower-carbon future as envisioned in the Paris Agreement

requires bold thinking and large-scale solutions where governments, academia and businesses work together. It's going to take collaboration with industry and governments; private sector and government investment; new policies and regulations; and community support.

Recognizing that commercially viable technology breakthroughs will be required to achieve the objectives of the Paris Agreement, ExxonMobil is also investing in large-scale technological solutions. The Company's sustained investment in research and development is



focused on society's highest-emitting sectors, among them heavy industry, power generation and commercial transportation. These three sectors account for 80 percent of global energy-related CO₂ emissions, and the current technology solutions set is insufficient to decarbonize them in line with the Paris Accords targets. ExxonMobil is one of the global leaders in Carbon Capture & Storage (“CCS”), a technology that the IEA and the U.N. Intergovernmental Panel on Climate Change consider critical to achieving society's ambition for net-zero emissions as outlined in the Paris Agreement. The IEA has called CCS “a key cost-effective option for reducing CO₂ emissions in large energy-intensive industries.” To date, ExxonMobil has cumulatively captured more CO₂ than any other company, accounting for approximately 40 percent of all the anthropogenic CO₂ ever captured.

The Company launched a new business unit, ExxonMobil Low Carbon Solutions (LCS) early this year, the sole focus of which is commercializing and growing its extensive low-carbon technology portfolio. Just this past April, ExxonMobil unveiled a \$100 billion carbon capture and storage concept to capture emissions from heavy industry located along the Houston Ship Channel. 11 companies, including ExxonMobil, expressed interest in supporting the large-scale deployment of the CCS technology in Houston. Once fully developed, this concept has the potential to capture about 100 million metric tons of CO₂ emission annually by 2040, effectively offsetting one of the country's largest sources of industrial CO₂ emissions.



China is committed to build a brighter future for the country and its people. As the world's largest energy consumer, powering this growth is a mammoth task, and it takes a mix of the right energy and technology to not only fuel this future but to do so while lowering carbon emissions and fulfilling the nation's ambition and commitment to tackle climate change. This energy transition also requires a collaborative approach to develop the means and technological solutions to drive this transformation.

We recognize that the journey is ambitious, transformative and requires collaboration with multiple stakeholders, including academia, industry and all levels of government. ExxonMobil supports these ambitions and has unique expertise and technical solutions, developed over decades. From its depth and breadth of operational experience — coupled with a history of progress and innovation, project execution and ability to scale up technology — ExxonMobil is well positioned to lead in a lower carbon future.

20

Creating a Sustainable World One Product at a Time

Jun Shen

**Unilever Homecare North Asia
R&D and Global Innovation Hub
Director and Senior Engineer**

Mr. Shen Jun is Unilever Homecare North Asia R&D and Global Innovation Hub Director and senior engineer. He has been working in Unilever for around 30 years, and devoting himself to develop superior homecare products and future fit technologies. He is leading the Carbon Rainbow initiative for homecare in China and part of a global initiative to move out of fossil carbon by 2030 in Unilever Homecare products, and is very knowledgeable about the technologies and solutions for a more sustainable society.





The climate crisis is already affecting people all over the world. Devastating wildfires, floods, droughts and other extreme weather events are increasingly common. Ecological destruction is wreaking havoc on nature and people's livelihoods. Unilever's purpose is to make sustainable living commonplace. Our compass has ensured that sustainability is at the heart of everything we do. That includes our brands and products and our partnerships and advocacy efforts – which are driving transformational change across our value chain, and beyond. Our products are available in over 190 countries. 2.5 billion people use our products every day. We are using our scale for good and leading in sustainable business and we are proud to have been recognized by many respected organizations for our work.

"Unilever's purpose is to make sustainable living commonplace. Our compass has ensured that sustainability is at the heart of everything we do."



We know that people care more and more about the impact of the products that they use and our own data show that environmental concerns are shared by people around the world. The latest "Who Cares, Who Does" report by Kantar/GFK indicates that 67% of consumers

surveyed across the world are actively trying to buy products produced in an environmentally friendly way. 66% try to buy products packaged in an environmentally friendly way. 60% try to buy products from companies who seem to have genuine concerns about the environment.

"67% of consumers surveyed across the world are actively trying to buy products produced in an environmentally friendly way. 66% try to buy products packaged in an environmentally friendly way. 60% try to buy products from companies who seem to have genuine concerns about the environment."

China sits in the middle with 79% of Chinese consumers trying to buy products that are packaged in an environmentally friendly way, higher than other countries including the EU where 64% of consumers try to buy products that are produced in an environmentally friendly way.

Consumer preference for products that are better for them, their home, and the planet is a global trend that continues to grow. Through Unilever's 'Clean Future' strategy, we aim to replace 100% of the carbon derived from fossil fuels in our Home Care formulations with

renewable or recycled carbon by 2030. Unilever announced a ringfenced budget of EURO €1 billion of current spend to focus solely on Clean Future initiatives. We are determined to keep our products affordable and we are already developing sustainable innovations which are even more accessible to consumers such as dilutable laundry detergents in Latin America.

Unilever will only transition to new technologies that positively impact the environment, are affordable to consumers and do not compromise on efficacy. Two-

thirds of people across the world want to buy sustainable cleaning products, but few people believe they work well or are good value. By injecting new technologies unknown to our categories in our propositions, we are changing the game. We can have it all: outperforming cleaning performance, a new cost equation and radically more sustainable products.

Clean Future is how Unilever is reinventing age-old chemistry to give people high-performing, affordable cleaning and hygiene products that are kind to them and the planet.

In the next 10 years, Unilever's Homecare business will aim to transition from:

- 1** Using fossil fuel derived chemicals in our formulations to using renewable and recycled sources of carbon
- 2** High carbon chemistry to low carbon products effective in cold and quick wash
- 3** Wastage of water to water efficient and biodegradable formulations
- 4** Single-use plastic to less plastic (refill/reuse), better plastic and no plastic models
- 5** Consumer distrust in chemicals to products designed for consumer trust

The above will require the chemicals value chain to come together to develop these renewable and circular sources of carbon at scale. It won't be easy and will take time to achieve. This is a big transformation of our business and will involve changes to the wider supply chain. There is still much to do to develop and scale up the relevant technologies. The period 2020-2025 will mostly be dedicated to creating the right partnerships and optimizing the technologies. Then, we will scale up the impact before achieving our end goal in 2030.

Our vision is to help the industry enter a new era - one where advances in cutting-edge technologies allow better products for people and the planet. We are keen to work together with our existing suppliers and explore opportunities with new partners to deliver on our Clean Future ambitions.

21

How Furniture Manufacturing Can Contribute to Net-Zero

Zhao Xiaobin

Co-Founder and CEO, Cambond

Dr Xiaobin Zhao is Founder, Director and CEO of Cambond. He obtained his BSc in Polymer Chemistry and MSc in Biomaterial Science in Nanjing University, China and a PhD in Bioengineering Unit at the University of Strathclyde. Zhao is also an alumnus of CKGSB's Igniting Innovation for Impact Program. He has been working in the UK biomaterial industry since 1998. Dr Zhao is an inventor and has successfully commercialised more than 10 products worldwide. He is a UK Chartered Chemist, a Fellow of Royal Society of Chemistry (FRSC) and a Fellow of Institute of Materials, Minerals and Mining (FIMMM) in the UK and Society for Biomaterial in the USA.





This is a broken world.

Our constructed environment, life on land and under water, as well as humanity's health and wellbeing are damaged, polluted and threatened by man-made, oil-based materials. Billion tonnes of plastic waste, which has not been well managed to recycle and reuse, is dumped into our ocean. One third of our food is wasted and about USD \$1 trillion of valuable natural resources cannot be reversed. All of these end up contributing to greenhouse gas emissions leading to global warming.

The construction sector contributes about 20% of CO₂ in total carbon emissions across sectors. The building materials used are not always green. Although the USD\$500 billion wood panel industry is working on improving eco-standards through the utilisation of renewable biomass that has less dependence on trees, 20% of the material is made up of resin to bind all the chips, fibres, and wood particles together, which is mainly oil-based containing toxic, cancer-causing formaldehyde. The wood panel industry is seeking alternatives to replace formaldehyde-based resin and have been attempting to reduce its emissions, but it is hard to find a good solution since this industry has been dominated by this resin for as long as 50 years. It seems one of the few actions we can take now is to set standards in across countries to limit the emission of formaldehyde to our living environment.

Yet, most customers still purchase furniture made from formaldehyde-based resin in which the formaldehyde can be released over a period of 10 years.

If we can build our house using furniture, decor and flooring made with a bio-based glue together with renewable biomass without any toxic chemicals and manufactured at an affordable price, we would not need to worry about the emission of volatile organic chemical (VOC) or have concerns about the end of product life as it is all natural and biodegradable. That would create a green building environment for us all to live in. We, at CAMBOND, have spent almost 7 years in developing a technology platform to manufacture low-carbon, bio-degradable, bio-adhesive materials, with the aim of solving this critical problem in the wood panel industry. We have also explored many other applications in polymer in liquid formulations (PLFs) that all in all have resulted in USD\$125 billion of sales every year.

Our solution is to use plant-based biomass that contains protein, such as algae, a brewing industry by-product, and bioethanol by-product, distiller's grain and solubles (DDGS) to mimic how the human body is bound by tissues and collagen protein to support our bodily movement. As all of the raw materials are abundant and renewable, we have been able to scale its production.



In the past 7 years, we have found broad applications to this sustainable solution. For instance, the bio-adhesive has been used to replace formaldehyde resin to make MDF and save 40% of CO₂ emissions. This bioadhesive has also proved beneficial in producing a type of bioplastic used to make home-ware products that reduce the use of actual plastic. We have made re-usable coffee cups from spent coffee ground, beer cups made from beer spent grain, etc. We also produce pallets using our resin together with agricultural waste to make 100% bio-degradable pallets for packaging and shipping.

Having secured patents in China, the US and the EU, as well as investment and development from cross-sector institutions like CKGSB's China Start Program—tailored for entrepreneurs seeking investment or business growth in China—and Lim Shrimp Organization, that has supported us to establish a facility in Ely, UK, we are confident we can continue to develop and deploy innovative solutions that contribute towards addressing humanity's environmental crisis.

22

What I Learnt from the Pandemic about Education

Lina Getachew Ayenew

**Founder and CEO,
Education for Ethiopia**

Lina Getachew Ayenew is an author and social entrepreneur from Ethiopia. She is the founder of Education for Ethiopia, an organization that aims to bring digital education to Ethiopian students. Education for Ethiopia's platform, Saquama, serves thousands of Ethiopian students by offering language and STEM lessons in Ethiopian languages. Lina is also the author of "The Complete Beginner's Guide to China-Africa Relations," which was published in 2019 and still serves as a go-to guide for individuals and organizations in the field. Lina serves on the Yale-China Association's board and is a graduate of Yale University (BA and MPH) and the Cheung Kong Graduate School of Business (MBA).





During the first year of the Covid-19 pandemic, I was a student, an instructor, an ed-tech social entrepreneur, and a mother. I was juggling these roles as best as I could without losing my mind. In the process, however, I learnt

a lot about education. Most of all, it became painfully clear to me that the education sector is very much ripe for innovation. This is especially true in developing countries. So, here's what I learnt:

Innovation 1: Record classes to level the playing field for students.

Okay, maybe this one is a no-brainer. But let me explain. The ed-tech social enterprise that I run, Education for Ethiopia, aims to provide digital K-12 STEM lessons in local languages. One of the most useful services we provide is not innovative at all. It is just the ability for students to view pre-recorded courses that they can pause, rewind and play again. This simple ability can make sure that students in my country, who miss classes for whatever reason (and there are many), are able to catch up.

I didn't quite appreciate this until I experienced it as a student myself. I was taking some MBA classes online at CKGSB, which would not have been an option had it not been for the pandemic. When I was too tired to concentrate, when I did not have a three-hour block of time to dedicate to a class or when I needed to pause so I can look back at my notes, those pre-recorded classes were lifesavers! Now imagine if a student in a developing country missed classes for days or even months at a time due to civil unrest, a natural disaster or family issues? Recorded classes would make a huge difference.

Innovation 2: Schools are bigger than education so invest more in them.

The rise of digital education may give the illusion that schools are a thing of the past. For me, that couldn't be further from the truth. Schools are bigger than education. They are a place to eat, socialize and a place of refuge. The World Food Program (WFP) disclosed that one in two schoolchildren, or 388 million kids, were eating at school before the pandemic¹. When schools closed during lockdown, many kids were not just missing their classes, they were also missing nutritious meals. Therefore, if we want to make education better globally, especially in developing countries like Ethiopia, we need to make sure that schools are strengthened in ways that are beyond just education.

Schools also serve parents. I know I am not alone when I say that without schools, it would be impossible for me to properly raise my child. It is a disgrace that around the world, teachers are perpetually underpaid. When the pandemic hit, many parents and students suffered because they couldn't replicate the learning environment that schools and teachers provide. Even in developed countries like the US, students fell 4 to 5 months behind in their schooling in the 2020-2021 academic year². Without schools, parents also experienced intense burn-out.

All this is to say that schools are not just learning centers. They are a hub where all who are invested in future generations congregate—students, parents, teachers and government bodies. Therefore, each stakeholder in the school environment needs to be supported, actively involved, and heavily invested in. That is the most socially innovative thing we can do.

Innovation 3: Teaching is an art, and it must be valued.

One of the hats I wear in Education for Ethiopia is as an instructor of various courses. And this role has taught me that teaching is an art, in the very literal sense.

Art is rooted in culture, language, lived experience and aesthetic values. That is why a certain type of painting, sculpture or music can be a unique expression of a particular group of people. Teaching is no different. How you teach, the examples you use, and the sentiments you evoke, are all very important when you try to impart knowledge. That is why we at Education for Ethiopia aim to create content in local languages, in the cultural context that students find themselves in.

As teaching migrates to the digital sphere, it is important to keep in mind that it is a form of expression that each community, regardless of location, is entitled to. We need to find ways to make students around the world feel like what they learn is indeed designed for them by reflecting their realities in their lessons. And technology can easily facilitate this process by making it easy to produce and disseminate content. This is especially important during uncertain times, when normal schooling is disrupted.

23

Making Social Responsibility a Competitive Advantage for Multinationals in China

Callum Douglas

Corporate Responsibility
Director, PwC

Callum is PwC's Corporate Responsibility Director and Net Zero Leader for China and Asia Pacific, working collaboratively to deliver PwC's local and global community and environment ambitions, including PwC's Net Zero 2030 commitment. He is passionate about sustainability and supporting business, government and non-government organizations to take a lead in creating positive social and environmental impact.





The emergence of the COVID-19 pandemic has accelerated the urgency of the social and environmental challenges we face. In addition to managing the effects of the pandemic, companies are facing unprecedented competition and societal expectations, and they must change faster and more thoroughly if they want to survive and thrive.

COVID-19 has made challenges such as climate change, polarisation and disruptive technological change more pressing and further raised the importance of progress towards the UN Sustainable Development Goals (SDGs). Achieving the SDGs means addressing design problems or market failures in the way our economy is structured. The system of norms, regulations and laws that govern the economy have delivered tremendous improvements in prosperity, health and equality over time. However, they have not evolved quickly enough to meet the most pressing challenges we are facing now. This leads to huge amount of opportunities for business to step in for making contributions. Business can be the driving force of leading transformative and innovative solutions to help solve these societal and environmental challenges.

Driving one of the world's largest and most dynamic economies, Chinese companies, in particular, have a leading role to play in delivering environmentally friendly and socially responsible prosperity, both domestically and around the world.



"Driving one of the world's largest and most dynamic economies, Chinese companies, in particular, have a leading role to play in delivering environmentally friendly and socially responsible prosperity, both domestically and around the world."

Board-level commitment is a primary and indispensable key to a company's effective strategy setting and execution management of corporate responsibility. High-growth companies must progress from a focus on near-term investments to a purpose-driven strategy and consider their wider social impact to meet the long-term needs of society. Successful companies focus their efforts on the issues that are most relevant to their business as identified in a materiality assessment. The integration of unique business strengths into corporate responsibility strategy formulation produces more meaningful outcomes. As Chinese companies drive corporate responsibility efforts, some often find a shortage of corporate responsibility professionals across their business. Therefore, attracting and retaining talent is another important part. More and more companies are starting to look at stakeholder

expectations and long-term benefits beyond the bottom line, but external driving forces are still relatively weak.

Back in 2020, PwC China in partnership with The United Nations Development Programme (UNDP) and the China Chamber of International Commerce (CCOIC) launched a report that serves as a baseline analysis of business awareness of the Sustainable Development Goals (SDGs). Among selected Chinese companies who are invited to participate the survey, it shows that Chinese companies have taken an active part in putting the SDGs into practice. 70% stated that they have pursued practical actions to do so, while 10% have identified specific pathways for SDG-implementation. However, over 30% believed that the actions they are taking at present are not purposeful, or are still in the planning phase, which requires more

targeted actions in the future. Currently, companies often undertake sustainable development projects based on their needs of branding and image-building. It has proven difficult to design the objectives or frameworks for sustainable projects and practices at a strategic level, which hampers concerted efforts within companies to move towards sustainability.

The effects of sustainable development on companies require top-down outlook at the strategic level. Companies should make prompt and effective adjustments on businesses and strategies, recognize and prioritize the SDGs in their plans and practices, as well as identify potential sustainable business opportunities and challenges.

"The effects of sustainable development on companies require top-down outlook at the strategic level. Companies should make prompt and effective adjustments on businesses and strategies, recognize and prioritize the SDGs in their plans and practices, as well as identify potential sustainable business opportunities and challenges."

Active engagement and substantive support from the Board of Directors and C-suite are essential. Companies should also clearly specify the indicators and objectives of evaluation. Learnings from the data collected should be applied to improve the alignment of business practices with the SDGs. Companies are also advised to disclose non-financial information regularly in reports, including annual reports, ESG, SDG and independent reports, to improve the confidence of stakeholders in their long-term development.

One successful case study highlighted in the report was a collaboration between UNDP and Baidu on driving innovation solutions to social problems. As a technology company, Baidu has identified its core Environmental, Social and Corporate Governance (ESG) strategy is to "fully integrate an ESG philosophy and standards into our management, solve social problems with technology, leverage our corporate strength and innovation capability, and contribute long-term, sustainable value to stakeholders and the human community at large." Hence, UNDP China, in partnership with Baidu since 2016, has taken a pioneering role in measuring poverty conditions, monitoring progress achieved, and making timely adjustment based on lessons learned in China using the dynamic information provided by big data.

As a result, the project has successfully created a new dimension for poverty measurement in China, as an essential complement to the traditional methods of mapping the impoverished population by income and financial factor alone.

Currently UNDP and Baidu as well as Tsinghua University, have partnered to harness big data to analyze social welfare to assist policy makers. This project again uses big data and machine learning to map the livelihoods of urban populations in major cities, providing policy makers a visualization of where populations are thriving, where access to public services may be lacking, and which policies have had the most positive impact for sustainable development. This is one inspiring collaborative project showing how SDGs can lead innovation that further drives corporate development.

Being a responsible business is not an option, it is a necessity. Big companies have the power to work together with policy makers, standard setters and others to solve critical social issues. Taking corporate responsibility seriously means taking a more active role in our world and our future. Business does have the responsibility to address these issues given the urgency and severity of the challenges through empowering, upskilling and creating long-term impact. There are a broad range of initiatives that companies can take to help address these challenges. Strategically embedding corporate responsibility into longer term needs of markets, people, clients, environment and community can help companies transform to meet the demands of a radically different environment, especially as we move forward into a post-COVID world. The world has woken up to the scale of global challenges including climate change, loss of nature and extreme inequality. Business can be the driving force of leading transformative and innovative solutions to help solve these societal and environmental challenges. The 2020s will be a pivotal decade.

Case Studies

Case Study: CKGSB's Ji'an Poverty Alleviation Initiative

107

To enhance public welfare and give back to society, CKGSB initiated a three-project campaign in 2017 to alleviate poverty in Ji'an, an impoverished district in Jiangxi, China. CKGSB used its core business – education and business management – in creative, socially innovative ways to improve access to basic services of the community, reduce the impact of disasters and raise the living standard in Ji'an.

Case Study: CKGSB's Goji Berry Project

110

During a trip to the Gobi Desert Challenge in 2015, a group of CKGSB professors, alumni, students and staff voluntarily helped the local villagers sell their unique local Goji berries using innovative business strategies to design, market, distribute and sell their product, raising the annual income of all in the community by nearly 35% and helping lift them out of poverty in a dignified way.

Case Study: CKGSB's Ji'an Poverty Alleviation Initiative

To enhance public welfare and give back to society, CKGSB initiated a three-project campaign in 2017 to alleviate poverty in Ji'an, an impoverished district in Jiangxi, China. CKGSB used its core business – education and business management – in creative, socially innovative ways to improve access to basic services of the community, reduce the impact of disasters and raise the living standard in Ji'an.





To enhance public welfare and give back to society, CKGSB initiated a three-project campaign in 2017 to alleviate poverty in Ji'an, an impoverished district in Jiangxi, China. CKGSB wanted to use its core business – education and business management – in creative, socially innovative ways to improve access to basic services of the community, reduce the impact of disasters and raise the living standard in Ji'an.

Drawing on CKGSB's strength in education, the school cooperated with the Ji'an Provincial Government to implement the 'Leading Jinggang' entrepreneur program to assist local enterprises through business education. The aim was to educate innovative talents in the local economy, drive local employment and thus, alleviate poverty in the long term. The program kicked off in May 2017, with the first intake of 30 carefully selected local business students from a variety of industries and ages. Since then, the program has trained 150 local entrepreneurs. Due to the positive impact and success,

CKGSB further established the Jinggang Mountain Teaching Base to facilitate the program.

After visiting the county, it was evident to CKGSB that most young and middle-aged people in the county needed to work outside the district to support their families. However, many were hesitant as it meant leaving behind the elderly and youth. In order to improve access to basic services, CKGSB donated RMB 910,000 to construct an entertainment and care center at the junction of three villages, to encourage family members to seek jobs and increase opportunities, by reducing the pressure and burden to stay at home to care for the older and younger family members. In March 2019, the 'Elderly and Youth Activity Center' was officially opened. The center, covering an area of 2,100 square meters and a building area of 755 square meters, houses elderly care apartments, a study room and a multipurpose room providing leisure, entertainment, fitness and learning for the locals.



The project also educated and aided the community by establishing a complete commercial chain of operations and business through the 'Gougu' tea of the Luanchuan county. The innovative model developed by CKGSB enables poor households in the county to receive a stable income through the farming and sale of the 'Gougu' tea. CKGSB educates and aids the local community in farming the tea and selling the tea, particularly through e-commerce platforms. They are able to lift themselves out of poverty through the commercialization of tea.

Through CKGSB's help in commercializing the local sale of the 'Gougu' tea via e-commerce platforms like JD.com and Charen.com, sales revenue totaled RMB 1,194,739.87 with a profit of RMB 28,1975.13. This profit has directly been driving and supporting 152 households in the province.

In 2019 CKGSB extended the project scope of the 'Gougu' tea project, to support the county's local high school graduates to study tea and sustain a career in working in the production of the county's tea sales. CKGSB subsidizes selected students at RMB 20,000 per student to study at the Zhangzhou Vocational College of Science

and Technology to attain skills in the tea industry to further aid the district in the commercialization of tea. Whilst at the county researching for the entertainment and care center, CKGSB also found that the area was prone to severe flooding. After deliberation, CKGSB decided to invest in rebuilding the embankment to prevent and mitigate future disasters. In addition, CKGSB also provided training courses in health and safety knowledge and disaster prevention.

As a result of CKGSB's efforts, in April 2019, the Jiangxi Provincial Government confirmed that all 5 of the counties in Ji'an had been successfully lifted out of poverty. In 2020, CKGSB also received the "Outstanding Poverty Alleviation Case in China" award from China's State Council's Poverty Alleviation Office and People's Daily.

In 2021, this initiative was recognized as one of the "Top 100 Projects" in the China Charity Project Competition. In the long-term, CKGSB aims to continue its efforts in Ji'an and other parts of the country by utilizing its network and expertise to build sustainable projects to address society's issues.

Case Study: CKGSB's Goji Berry Project

During a trip to the Gobi Desert Challenge in 2015, a group of CKGSB professors, alumni, students and staff voluntarily helped the local villagers sell their unique local Goji berries using innovative business strategies to design, market, distribute and sell their product, raising the annual income of all in the community by nearly 35% and helping lift them out of poverty in a dignified way.





In 2015, during a trip to northwestern China where business school professors, students and alumni compete in the annual Gobi Desert Challenge, CKGSB participants came across a local village where inhabitants live well below the poverty line, with an average annual income of just RMB 2,500 (roughly USD 500). Due to the local climate, the villages had an abundant Goji berry crop, but the local residents lacked the expertise to commercialize the product. The group of students and faculty launched the CKGSB 'Goji Berry' charity project to alleviate poverty for Guazhou county in Gansu Province through the commercialization of goji berries, a bountiful crop to the local area.

The visiting CKGSB faculty and students decided this would be an interesting project to put their social enterprise theory to the test and a project where they can fully utilize their skillsets of bringing a product to market. Together with the local villagers, the students designed and branded, trademarked and distributed the product. Gradually, the students were able to expand their marketing channels to sell the berries on e-commerce

platforms nationally, further strengthening the brand and increasing sales.

By 2016, the team had helped the villagers sell nearly 21,147 kilos of berries, with total revenues of RMB 3.48 million (roughly USD 544,107). The average household income of the 558 villagers increased by RMB 4,631 (roughly USD 1,005), or nearly 35%. The financial benefits to the desperately poor community are obvious, but it also helped to employ and strengthened their skillset by teaching them to commercialize their local product. This socially minded project centered on business model innovation, a rare element within a non-profit enterprise. By utilizing models from their own business experiences, the students were able to combine many different areas of expertise to make this project a success. This project also helped villagers learn new skills, provide employment to the local area and lift them out of poverty in a dignified way. Local villagers now run enterprise themselves, providing stability and access to an area that had very little.

References

By Siddharth Chatterjee

¹ Link to: <https://www.kunming.cn/en/c/2020-04-08/12905547.shtml>

² Link to: http://www.china.org.cn/china/2020-01/06/content_76357103.htm

³ Link to: <https://www.unicnairobi.org/news-and-events/wawira-njiru-honoured-as-un-person-of-the-year-2021/>

⁴ Link to: <https://jdcorporateblog.com/trash-sorting-its-a-piece-of-cake-with-jd-ai/>

By Brian Viard

¹ Link to: <https://econpapers.repec.org/paper/nbrnberwo/24970.htm>.

² Link to: <https://www.aeaweb.org/articles?id=10.1257/app.20150213>.

³ Link to: <https://www.journals.uchicago.edu/doi/abs/10.1086/691591>.

⁴ Link to: <https://www.pnas.org/content/115/37/9193>.

⁵ Link to: <https://econpapers.repec.org/paper/nbrnberwo/24970.htm>.

⁶ Link to: <https://www.sciencedirect.com/science/article/pii/S0095069618301220>.

⁷ Link to: <https://econpapers.repec.org/paper/nbrnberwo/24686.htm>.

⁸ Link to: <https://www.aeaweb.org/articles?id=10.1257/app.20160436>.

⁹ Link to: <https://iopscience.iop.org/article/10.1088/1748-9326/ab8b8c/pdf>.

¹⁰ Link to: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2852886.

¹¹ Link to: https://www.nber.org/system/files/working_papers/w22753/w22753.pdf.

¹² Link to: <https://www.journals.uchicago.edu/doi/full/10.1086/698728>.

¹³ Link to: <https://www.aeaweb.org/articles?id=10.1257/aer.102.7.3652>.

¹⁴ Link to: <https://www.aeaweb.org/articles?id=10.1257/pol.20150085>.

¹⁵ Link to: <https://www.aeaweb.org/articles?id=10.1257/app.20170286>.

¹⁶ Link to: <https://academic.oup.com/ej/advance-article-abstract/doi/10.1093/ej/ueab033/6255431?redirectedFrom=fulltext>.

¹⁷ Link to: https://www.nber.org/system/files/working_papers/w24036/w24036.pdf.

¹⁸ Link to: https://gps.ucsd.edu/_files/jgz_fires-gaokao_jde20.pdf.

¹⁹ Link to: <https://www.journals.uchicago.edu/doi/full/10.1086/691465>.

²⁰ Link to <http://www.voxchina.org/show-3-239.html>.

²¹ Link to: <http://yatanglin.weebly.com/uploads/8/7/8/7/87879450/jmpdraft.pdf>.

²² Link to: <https://www.journals.uchicago.edu/doi/full/10.1086/713101>.

By Ji Bo

¹ Andrea Ricci. "Coronavirus may push 150 million people into extreme poverty: World Bank". Reuters. Archived from the original on 7 Oct 2020. Retrieved 19 October 2021.

² Aline Leclerc. "Gilets jaunes: anatomie d'une journée de colère". Le Monde. Archived from the original on 19 November 2018. Retrieved 19 October 2021.

³ "What can Chinese brands learn from Hongxing Erke's flood relief efforts?" CGTN. Archived from the original on 3 August 2021. Retrieved 19 October 2021.

⁴ Matthew Bell. "Why ESG performance is growing in importance for investors". EY.com. Archived from the original on 9 Mar 2021. Retrieved 19 October 2021.

⁵ Oscar Williams. "COP26: Banks and investors race to fund \$150 trillion net zero push amid fears politics could fall short" Evening Standard. Archived from the original on 1 November 2021. Retrieved 3 November 2021.

⁶ Sustainable Finance Review Full Year 2020, Refinitiv, 2020, [https://www.refinitiv.com/perspectives/market-insights/what-is-driving-sustainable-finance-towards-a-record-2021/](http://resourcehub.refinitiv.com/c/Sustainablefinance_reviewQ4?x=uxxWju&elqTrackId=27540b162d27455c9f00c7a41d6af055&elqaid=11153&elqat=2&topic=Banking%20and%20Capital%20Markets; 'What is Driving Sustainable Finance towards a Record in 2021?,' Refinitiv, 25 October 2021, <a href=)

⁷ The Rise of The Sustainable Fund Market and Its Role in Financing Sustainable Development, UNCTAD, 18 August 2021, https://unctad.org/system/files/official-document/diae2021d1_en.pdf

⁸ Ibid.

⁹ 'International Platform on Sustainable Finance on Common Ground Taxonomy - Instruction Report,' European Commission, 4 November 2021, https://ec.europa.eu/info/files/international-platform-sustainable-finance-common-ground-taxonomy-report-2021_en

By Martin Raiser

¹ Scott Rozelle and Nathalie Hell (2021), *Invisible China: How the Urban Rural Divide Threatens China's Rise*. University of Chicago Press.

² See for example Alberto Alesina and co-authors (2020), *Persistence Despite Revolution*. <https://www.nber.org/papers/w27053>; Yi Fan, Junjian Yi, and Junsen Zhang (2021) "Rising Intergenerational Income Persistence in China." *American Economic Journal: Economic Policy* 13 (1): 202–230.

³ Bert Hofman (2021), *China's Common Prosperity Drive*. <https://research.nus.edu.sg/eai/wp-content/uploads/sites/2/2021/09/Eaic-33-20210903.pdf>

⁴ Credit Suisse (2021), *Global Wealth Report*. <https://www.credit-suisse.com/about-us/en/reports-research/global-wealth-report.html>

⁵ In kind redistribution through health and education services accounts for half of this reduction. Nora Lustig and Yang Wang (2020), *The Impact of Taxes and Transfers on Income Inequality, Poverty and Urban Rural and Regional Income Gaps in China*. <http://repec.tulane.edu/RePEc/pdf/tul2003.pdf>

⁶ World Bank (2020), *China Economic Update: From Recovery to Rebalancing. China's Economy in 2021*. <https://documents1.worldbank.org/curated/en/297421610599411896/pdf/From-Recovery-to-Rebalancing-China-s-Economy-in-2021.pdf>

⁷ See for example Ryan Hass, *Assessing China's Common Prosperity Campaign*. Brookings, September 9, 2021. <https://www.brookings.edu/blog/order-from-chaos/2021/09/09/assessing-chinas-common-prosperity-campaign/>

⁸ Cerra Valerie and co-authors (2021), *Links between growth, inequality and poverty: a survey*. <https://openknowledge.worldbank.org/handle/10986/35355>; Shekhar Aiyar and Christian Ebeke (2020) "Inequality of Opportunity, Inequality of Income, and Economic Growth." *World Development* 136 (December), 105115.

By Frank-Jürgen Richter

¹ Link to: <https://unitar.org/about/news-stories/press/global-e-waste-surg-ing-21-cent-5-years>

² Link to: <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

³ Link to: <https://www.statista.com/statistics/330695/number-of-smartphone-users-worldwide/>

⁴ Link to: <https://www.worldometers.info/computers/>

⁵ Link to: <https://variety.com/2019/digital/news/u-s-households-have-an-average-of-11-connected-devices-and-5g-should-push-that-even-higher-1203431225/>

⁶ Link to: <https://www.epa.gov/international-cooperation/cleaning-electronic-waste-e-waste>

⁷ Link to: <http://www.basel.int/Implementation/Ewaste/Overview/tabid/4063/Default.aspx>

⁸ Link to: <https://waste-management-world.com/a/switzerland-and-ghana-work-together-to-eliminate-global-e-waste>

⁹ Link to: <http://www.electronicstakeback.com>

¹⁰ Link to: <https://www.unep.org/news-and-stories/press-release/un-report-time-seize-opportunity-tackle-challenge-e-waste>

¹¹ Link to: https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_730910.pdf

¹² Link to: <https://www.greenpeace.org/eastasia/press/1397/chinas-e-waste-worth-23-8-billion-by-2030-2/>

¹³ Link to: <https://indd.adobe.com/view/0e7a3d17-8b8a-441c-b393-906bacc7376e>

¹⁴ Link to: <https://indd.adobe.com/view/0e7a3d17-8b8a-441c-b393-906bacc7376e>

¹⁵ Link to: <https://waste-management-world.com/a/switzerland-and-ghana-work-together-to-eliminate-global-e-waste>

By Bruno Roche

¹ "Putting Purpose into Practice: The Economics of Mutuality" Oxford University Press, 2021: Purpose of business is not to maximize profit. Purpose of Business is to develop profitable and scalable solutions to the problems of society and the environment, not profiting from creating problems.

² Economics of Mutuality has developed a series of simple and stable indicators, based on a decade of in-depth academic research and business practice, that enable companies to invest according to a financial and non-financial prism in its social and environmental ecosystems, and by doing so enhance their economic performance.

By Alfredo Montufar-Helu

¹ World Investment Report 2014 – Investing in the SDGs: An Action Plan , UNCTAD, 2014, https://unctad.org/system/files/official-document/wir2014_en.pdf

² Global Outlook on Financing for Sustainable Development 2021: A New Way to Invest for People and Planet, OECD, 9 November 2020, <https://www.oecd-ilibrary.org/sites/6ea613f4-en/index.html?itemId=/content/component/6ea613f4-en#endnotea0z2>

³ These figures are based on the 21+EA group. See: Global Monitoring Report on Non-Bank Financial Intermediation 2020, The Financial Stability Board, 16 December 2020, <https://www.fsb.org/2020/12/global-monitoring-report-on-non-bank-financial-intermediation-2020/>

⁴ 2021 Global Private Equity Outlook, S&P Global, 2 March 2021, https://www.spglobal.com/marketintelligence/en/news-insights/research/2021-global-private-equity-outlook#_ftn3

⁵ Resetting the Agenda: How ESG Is Changing Our Future, EIU, 22 June 2021, https://impact.econ-asia.com/perspectives/sites/default/files/resettingtheagenda_1.pdf

⁶ Sustainable Finance Review Full Year 2020, Refinitiv, 2020, [https://www.refinitiv.com/perspectives/market-insights/what-is-driving-sustainable-finance-towards-a-record-2021/](http://resourcehub.refinitiv.com/c/Sustainablefinance_reviewQ4?x=uxxWju&elqTrackId=27540b162d27455c9f00c7a41d6af055&elqaid=11153&elqat=2&topic=Banking%20and%20Capital%20Markets; 'What is Driving Sustainable Finance towards a Record in 2021?,' Refinitiv, 25 October 2021, <a href=)

⁷ The Rise of The Sustainable Fund Market and Its Role in Financing Sustainable Development, UNCTAD, 18 August 2021, https://unctad.org/system/files/official-document/diae2021d1_en.pdf

⁸ Ibid.

⁹ 'International Platform on Sustainable Finance on Common Ground Taxonomy - Instruction Report,' European Commission, 4 November 2021, https://ec.europa.eu/info/files/international-platform-sustainable-finance-common-ground-taxonomy-report-2021_en

By Lina Getachew Ayenew

¹ World Food Program, "Pandemic derails historic advances in children's access to school meals," <https://www.wfp.org/news/pandemic-derails-historic-advances-childrens-access-school-meals>, February 24, 2021

² New York Times, "U.S. students ended the pandemic school year 4 to 5 months behind, a new report finds," <https://www.nytimes.com/2021/07/27/us/covid-students-progress-at-home-learning.html>, July 27, 2021



“ Acknowledgements

It is an honor and privilege to convene and share in this report the diverse voices that have contributed to social innovation. We would like to acknowledge all of the contributors and our partners across the international business sector, global think tanks, multilateral organizations and academia, for without their support, this report would not have been possible. In particular, we would like to express our gratitude to Asia House, the British Chamber of Commerce, The Economist Corporate Network and the Møller Institute at Churchill College in the University of Cambridge, for their support and to all opinion leaders who offered their valuable time and insights to this pertinent topic.

Last but not least, we would also like to thank the Cheung Kong Graduate School of Business professors for their original research and analyses on the possible solutions to some of humanity's most serious challenges, and the CKGSB colleagues for their excellent work in putting this meaningful report together.

Project Director
Ira Zaka

Lead Editor
Jessica Wang

Project Manager
Xuefang Tian (Julie)

Creative Agency
Flow Asia

About Cheung Kong Graduate School of Business (CKGSB)

Established in Beijing in November 2002, Cheung Kong Graduate School of Business (CKGSB) aims to cultivate transformative business leaders with a global vision, social responsibility, innovative mindset, and ability to lead with empathy and compassion. Funded with generous support from the Li Ka Shing Foundation in November 2002, CKGSB is China's first privately-funded and research-driven business school.

CKGSB is the preferred choice for management education among China's established business leaders and a new generation of disruptors. It is also the leading choice for academics returning to China from top business schools worldwide. CKGSB has more than 40 full-time professors, many of whom held tenured positions at leading business schools, such as Wharton and Yale. Their research has provided the basis for over 500 case studies of both China-specific and global business. CKGSB's alumni network is also the most influential in China. More than half of CKGSB's 17,000 alumni are at the CEO or Chairman level and, collectively lead one fourth of China's most valuable brands.

CKGSB goes beyond the traditional boundaries of business schools to foster social innovation through the collaboration of businesses, governments, multilateral institutions, non-profit organizations and civil society, to address humanity's most challenging and often systemic issues—like income and wealth inequality, social immobility and sustainability. In 2005, CKGSB was the first business school in China to incorporate humanities into its core business curricula to give students a more holistic view of business. CKGSB also set up the EMBA philanthropy scholarship in 2002, now awarded across all of our degree programs to outstanding civil society and NGO leaders. Since 2010, all degree students must participate in philanthropic service in order to graduate, resulting in a total of 150,000+ hours served to date. CKGSB began offering social innovation as an elective module for EMBA and MBA students in 2017 and a required module since 2018. Since then, CKGSB has been working with partners across sectors to develop a global ecosystem for next-generation disruptors that are economically, socially and environmentally responsible, while embracing technologic innovation.

We offer innovative degree and non-degree, full-time and part-time programs, including MBA, Executive MBA, Business Scholars Program, Executive Education Programs and a start-up incubator, known as the Chuang Community. Moreover, we partner on programs and research with more than 40 leading institutions across disciplines, including Berkeley Engineering, Columbia Engineering, Churchill College at the University of Cambridge, The Graduate Institute Geneva, Johns Hopkins Carey Business School, Singapore Management University and the United Nations.

Headquartered in Beijing, CKGSB is also located in Shanghai, Shenzhen, New York, Hong Kong and London.

For more information, please visit: <https://english.ckgsb.edu.cn/>





CKGSB
长江商学院
CHEUNG KONG GRADUATE
SCHOOL OF BUSINESS

Follow us @CKGSB



<https://www.facebook.com/CKGSB>



<https://twitter.com/ckgsb>



<https://www.linkedin.com/school/cheung-kong-graduate-school-of-business/>



<https://www.instagram.com/ckgsb/>



<https://www.youtube.com/c/CheungKongGSB>

<https://english.ckgsb.edu.cn/>

Publication date: December 2021

Beijing • Shanghai • Shenzhen • Hong Kong • London • New York