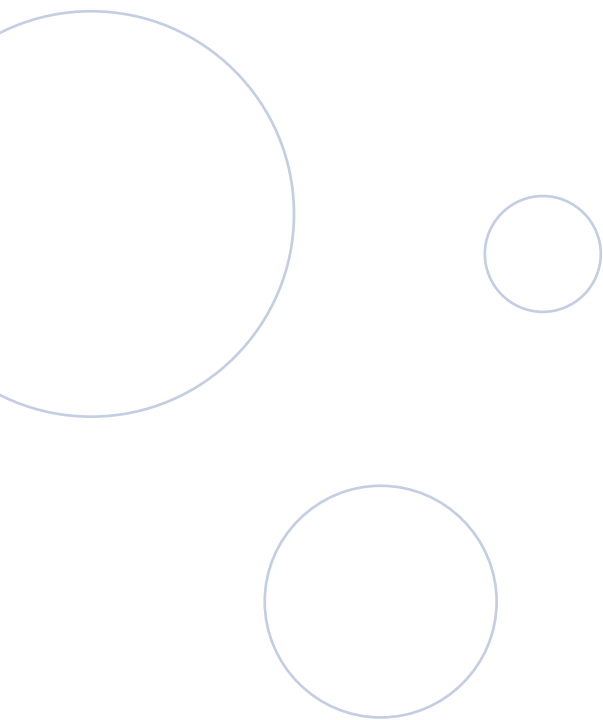


The GII Partners

Foreword



Soumitra Dutta and Bruno Lanvin
Co-editors of the *Global Innovation Index*
Co-founders of the Portulans Institute



In more than one respect, the year that has elapsed between the 2020 edition of the *Global Innovation Index* (GII) and the present one has been eventful and disruptive. The sudden outbreak of the COVID-19 pandemic has fundamentally altered the ways in which the world lives, works and learns. Innovation is changing in the post-pandemic era and the GI will continue to seek data-based validation of these changes.

As recovery packages continue to be deployed across major world economies, the fields of health, green and digital technology are attracting increased attention and funding. Advances and innovations can be expected in critical areas, such as health (for example, genetic engineering), pharmaceuticals (especially vaccines), energy production (with a focus on renewables), logistics and urban design, all powered by breakthroughs in artificial intelligence and quantum computing. The last edition of the GI laid out specific needs for entrepreneurship financing and measures to integrate innovation into post-crisis strategies. However, the jury is still out on the adequacy and effectiveness of the recovery packages and economic stimulus measures recently announced.

It is likely that innovation divides will be accentuated in the coming years, across economies, sectors and companies. Innovation ecosystems in many emerging economies have become fragile and will need to be supported by targeted policies. While sectors such as ICT, software and pharmaceuticals have increased spending on R&D in 2020, others

such as hospitality and automobiles, have reduced their R&D investments over the same period. This imbalance will need to be corrected as the future winners in all sectors will have to be innovative in terms of both new technologies and business models.

The GI report is now published by WIPO in partnership with the Portulans Institute, with the support of our corporate network partners, the Confederation of Indian Industry (CII), Brazilian National Confederation of Industry (CNI), Ecopetrol Group (Colombia) and the Turkish Exporters Assembly (TIM). The GI will continue to provide factual evidence and reliable data to inform the many essential debates around innovation. Indeed, the 2021 edition of the GI proposes the use of a novel GI Global Innovation Tracker to monitor some of the issues mentioned above. This new effort is fully in line with the GI's goal of advancing a data-based understanding of innovation.

An important new element of the GI ecosystem this year is the creation of an Academic Network comprising nine important global academic institutions: American University in Cairo (Egypt), Cornell University (United States of America), EGADE Business School (Mexico), Higher School of Economics (Russian Federation), INSEAD (France/Singapore), Lagos Business School (Nigeria), Peking University (China), Universidad de Los Andes (Colombia) and University of São Paulo (Brazil). The GI Academic Network will play a key role in creating new innovation programs for faculties and students globally.

We look forward to a fruitful collaboration in growing the global impact of the GI under the new leadership of WIPO's Director General, Daren Tang, and creating new programs that focus on corporate innovation and young entrepreneurs.

Corporate Network



Chandrajit Banerjee
Director General
Confederation of Indian Industry (CII)

Innovation in a new world: Lives, livelihoods and an economic reboot

The unprecedented global crisis that resulted from the outbreak of COVID-19 has propelled us into reinvigorating the important dimension of innovation in order to mitigate the pandemic's profound adverse effects on the economy and restore growth, calling for nations to embrace innovation as never before. While the crisis has naturally stimulated interest in innovative health-care solutions, it has also catalyzed other areas, such as remote working, distance learning, e-commerce and mobility solutions.

India is well known for its close relationship with innovation, from developing low-cost vaccines to frugal space programmes, and safeguarding millions of lives through the development of effective warning systems for cyclones. In these challenging times, the Confederation of Indian Industry (CII) has been working around the clock alongside the Indian Government and industry to combat the impact of the pandemic through policy advocacy, production and dissemination of appropriate technology by industry, creation and augmentation of medical infrastructure, and numerous other interventions.

Over the years, the *Global Innovation Index* (GII) has been instrumental in allowing India to shape its policies and design an actionable agenda for innovation excellence. It is indeed both a privilege and an honour for the CII to host the Indian launch of the GI every year and the historic global launch in 2019. The GI launch is a clear indicator of the phenomenal recognition of India's standing in innovation.

As nations formulate appropriate strategies for saving lives and design economic growth trajectories, the GI 2021 report will provide a significant reference point, allowing countries to assess their innovation capabilities, potential, readiness and resilience, not only to fight the current and future crises, but also to seek economic recovery and to create business models that will survive and thrive in the new post-pandemic world.

I appreciate the tireless efforts of the GI team in producing this latest edition of the Index during the crisis. The CII is privileged to have been associated with the GI since its inception and we believe it will continue to aid the global innovation journey.

I congratulate the GI team and wish them all the very best.



Robson Braga de Andrade
President
Brazilian National Confederation of
industry (CNI)

Innovation: A vaccine to boost Brazil's competitiveness

The COVID-19 pandemic has triggered severe health and economic crises that will have lasting impacts. Vaccine research and scientific investigation to prevent the spread of coronavirus have increased awareness of the pivotal role of science, technology and innovation (STI) in economic and social development.

Brazil has yet to put STI at the heart of its long-term development strategy. The necessity of prioritizing the provision of public services is often used to justify a lack of focus on STI spending. Difficulties in public budget management, combined with deep-seated structural economic problems and a lack of long-term vision further exacerbate this situation.

The Entrepreneurial Mobilization for Innovation (MEI), a group coordinated by the Brazilian National Confederation of Industry (CNI), comprising 300 of the top business leaders in the country, advocates that innovation is fundamental in promoting sustainable growth and addressing chronic problems, including the provision of basic services. MEI operates as a space for public-private dialogue, allowing public policy proposals to improve the national innovation ecosystem to be presented and debated.

MEI has many achievements to show for its 13 years of existence, yet much still remains to be done. For Brazil to become a truly innovative economy, we need to be among the top 30 economies in the *Global Innovation Index (GII)* and the government's policy, launched in 2020, pledges to make concerted efforts toward achieving this goal.

MEI contributes to this national endeavor by means of specific agendas on STI policy and governance; regulatory framework; financing; strategic human resources; open innovation; sustainability; and digital transformation. The *GII* and other international benchmark studies are fundamental inputs on these fronts, providing an understanding of our strengths and identifying gaps.

CNI believes that the *GII* provides an important annual reference on innovation progress in different nations and, as such, offers excellent guidance to policymakers and companies in Brazil, contributing to the national debate, informing public-private dialogue and strengthening joint efforts toward a globally competitive Brazilian innovation ecosystem.

Have a great read!



Felipe Bayón Pardo
Chief Executive Officer
Ecopetrol Group

Committed to “making the impossible possible”

Ecopetrol began three years ago an unprecedented reinvention process. Digital transformation has played a fundamental role in making the Company what it is today: more efficient, more solid and more resilient to crises. In response to the energy transition, we have based our strategy on sustainability. In fact, at Ecopetrol we talk about TESH, whereby technology and innovation act as catalysts for the environmental, social and governance dimensions (ESG). We define TESH as making a long-term contribution and being a value generation model that aims for responsible, safe and efficient operations, harmonizing relations with the environment and our stakeholders under a transparent and ethical governance framework and using technology to develop innovative solutions to current and future challenges. In this way, we put technology and innovation at the heart of sustainability.

As an integrated business group, Ecopetrol is addressing the energy transition in four ways: i) by increasing the *competitiveness* of existing assets, ii) by *diversifying* into low-emissions businesses, iii) by accelerating *decarbonization* to achieve the goal of net zero carbon emissions by 2050, and iv) by deepening our TESH agenda. This is underpinned by the development of talent, knowledge and innovation. A key principle of our corporate culture is “Making the impossible possible, implementing innovative solutions with anticipation and technology,” thereby enhancing Ecopetrol’s goal of becoming the energy that transforms Colombia.

Our 2021–2023 Business Plan includes investments in technology and innovation of between US\$100 and US\$150 million. For this financial year, around US\$20 million has been allocated to the research and development of technologies for energy transition and carbon neutrality.

We at Ecopetrol are aware that we cannot do it all on our own, which is why we have been strengthening our working in partnership with both public and private entities, including Microsoft, IHS Markit, Plug and Play, Israel’s Innovation Authority, Colombia’s Ministry of Science, Technology and Innovation, and iNNpulsa Colombia. We have also created strategic alliances with young entrepreneurs to better face the multiple challenges that confront our industry.

We also require disruptive solutions. This is why we joined the *Global Innovation Index’s* (GII) Corporate Network. We are convinced that by working jointly with the best, we can continue to make the impossible possible for the benefit of the company, its stakeholders and an innovative Colombia.



İsmail Gülle
Chair
Turkish Exporters Assembly (TİM)

Innovation: A crucial indicator for Turkey's value-added export

Innovation is an instrument of development that plays an increasingly important role in global trade. Particularly over the past two decades, the arena of global trade has been changing, with economies of scale gradually being replaced by an innovation economy focused on high value-added products and services.

This shift in focus is why Turkey attributes great importance to innovation programs and monitoring tools, such as the *Global Innovation Index* (GII). Turkish exporters are making rapid progress toward their goal of becoming pioneers of innovation in every field. Over 100,000 exporting companies want to add innovation to their products and services.

The Turkish Exporters Assembly (TİM) is maintaining its support for innovation programs like InoSUIT, to strengthen university–industry cooperation, InovaLEAGUE, designed to identify innovation champions, InovaTİM, which educates students from 176 universities on the subject of innovation, and TİM-TEB Global House, which empowers 20 percent of all tech startups in Turkey and has raised more than 1,200 entrepreneurs. Additionally, we organize annual innovation events, such as Turkey Innovation Week – the largest gathering of the innovation ecosystem, coordinated by the Ministry of Commerce. Thanks to these programs, the number of Turkish exporters, specifically those with high value-added products, is gradually increasing.

With these long-established initiatives, TİM aims to improve Turkey's GII ranking and to realize the goals set out in the Turkish Global Innovation Index 2023 Roadmap, generated by TİM and the Ministry of Industry and Technology under the auspices of the Presidency of the Republic of Turkey. Inspired by the GII, a digital platform reports the monthly developments of 24 institutions for 69 GII indicators, and eight separate GII working committees have been set up to create medium- and long-term actions for the national roadmap. In this context, I would also like to thank the TİM Innovation Committee for their GII-focused efforts.

We wholeheartedly believe that, with the vital contribution of the GII, Turkey will continue in its endeavors to increase exports of innovative, high value-added products and services in a sustainable fashion.

Corporate Network Partners

Since its inception in 2007, the GII has been supported by Knowledge Partners drawn from the private sector; more specifically, firms, consultancies, or industry associations keen to promote innovation and spur competitiveness. Their contribution is an important source of influence for the GII – firms and private sector entities are, after all, at the heart of innovation. As of 2021, these partners constitute the GII's Corporate Network, supported by the Portulans Institute. In 2021, the GII Corporate Network comprises the Confederation of Indian Industry (the longest-standing corporate partner since 2008), the Brazilian National Confederation of Industry (a partner since 2017), as well as the Turkish Exporters Assembly and Ecopetrol Group, which both joined this year. We extend our gratitude to all corporate partners for their invaluable support.

Brazilian National Confederation of Industry (CNI)

Robson Braga de Andrade, President; Gianna Sagazio, Innovation Director; Cândida Oliveira, Innovation Executive Manager; Julieta Costa Cunha, Industrial Development Specialist.

Confederation of Indian Industry (CII)

Chandrajit Banerjee, Director General; S. Raghupathy, Deputy Director General; Ashish Mohan, Principal Counsellor and Head, Technology, Design, Research, Innovation & Intellectual Property Creation; Namita Bahl, Deputy Director, Technology & Innovation; Divya Arya, Executive Officer, Technology & Innovation.

Ecopetrol Group

Felipe Bayón Pardo, Chief Executive Officer of the Ecopetrol Group; Ernesto José Gutierrez de Piñeres Luna, Digital Vice President of Ecopetrol; William Jose Mora Villamizar, Head of department of digital factories.

Turkish Exporters Assembly (TİM)

İsmail Gülle, Chair; Kutlu Karavelioğlu, Deputy Chair; and the following Innovation Committee Members: Orhan Sabuncu, Birol Celep, Melisa Tokgöz Mutlu, Hüseyin Memişoğlu, Feyyaz Ünal, Jak Eskinazi, Ahmet Şişman, Mustafa Ertekin. Belma Ünal, Corporate Communication Director; Senem Sanal Sezerer, Deputy Secretary General; Kübra Ulutaş, Deputy Secretary General; Meltem Demirtaş, Chief; Gökhan Ezgin, Chief; and the following experts: Gülçin Yekin, Çağrı Köse, Burak Günaydin, Nebile Mercan.

Past corporate partners include Alcatel-Lucent, A.T. Kearney, Booz & Company, the Brazilian Micro and Small Business Support Service (SEBRAE), Canon, Dassault Systèmes, du (a telecommunications company), Huawei, IMP³rove – European Innovation Management Academy, PricewaterhouseCoopers (PwC), and strategy&.

Academic Network partners

In 2021, an Academic Network was established to engage world-leading universities – faculty members and graduate students included – in GII research and support the dissemination of GII results within the academic community. The Academic Network welcomes the contribution of researchers and institutions active in diverse fields, including business management, law, public policy and science. We extend our gratitude to all Academic Network partners for their support.

Brazil: University of São Paulo (USP), School of Economics, Management, Accounting and Actuarial Sciences, Moacir de Miranda Oliveira Júnior, Head, Business Administration Department

China: Peking University, Office of Science and Technology Development, Weihao Yao, Director

Colombia: Universidad de los Andes, School of Management, Veneta Stefanova Andonova Zuleta, Dean; and Carolina Davila Aranda, International Office Director

Egypt: The American University in Cairo (AUC), School of Business, Sherif Kamel, Dean

France: Institut Européen d'Administration des Affaires (INSEAD), Bruno Lanvin, Distinguished Fellow

Mexico: Tecnológico de Monterrey EGADE Business School, Osmar Zavaleta, Dean

Nigeria: Lagos Business School Pan-Atlantic University (LBS), Chris Ogbechie, Dean

Russian Federation: Higher School of Economics (HSE), Institute for Statistical Studies and Economics of Knowledge, Leonid Gokhberg, Director and First Vice-Rector

United States of America: Cornell SC Johnson College of Business, Soumitra Dutta, Professor and Former Founding Dean