



**Innovation
League**

A special Event hosted by the
Italian G20 Presidency



Sorrento, 9/10 October 2021

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G20 INNOVATION LEAGUE – WHITE BOOK

Foreword

We are entering a deeply transformative decade, where humankind will be increasingly called to cope with global issues. As recalled by the Italian Prime Minister Mario Draghi during his introductory speech at the COP26 in Glasgow, innovation will be key to generate effective and sustainable responses to critical issues. From health, to climate change and digital empowerment, a complex and interconnected world needs effective partnerships between public and private sectors, in addition to breakthrough technologies and brave entrepreneurs, to ensure an ordered transition to a fairer and more sustainable world.

This has been the spirit of the Italian G20 Presidency, focused on three broad, interconnected pillars of action: People, Planet, Prosperity. Within this framework, the Italian Minister of Foreign Affairs and International Cooperation – in collaboration with the Italian Trade Agency, the Italian Innovation Fund (CDP Venture Capital) and SIMEST – organized the very first edition of the G20 Innovation League. Together, we established a unique platform where start-ups, investors, corporates and policy-makers had the opportunity to devise and discuss solutions to some of the most urgent needs of our societies.

It represented both a chance to increase the international flow of market-based investments on innovation and an opportunity for Italy to reinforce its role as a global driver of innovation. Along the centuries, Italy has been

able to combine successfully tradition and innovation, through manufacturing processes focused on quality, human relations, and respect for the environment. We are promoting these as pillars of a more sustainable economy, based on a people-centered approach, in the belief that the contamination between traditional productive value chains and innovative solutions is the key to deliver a better, safer, more sustainable and equitable growth.

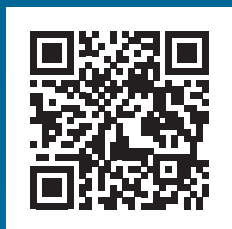
This White Book presents the contents of the first edition of the G20 Innovation League, with a focus on the five main global challenges we identified: Cleantech, Artificial Intelligence, Internet of Things and Wearables, Smart Cities and Mobility, Healthcare.

In its second part, the White Book offers an overview of the 10 startups selected as providing the most innovative solutions to tackle these global challenges and foster global investments and trade.

Looking forward, a special thank goes to Indonesia for its willingness to host the second edition of this event during its G20 Presidency, next year. I am sure that by providing such strong foundations to this exercise, we are at creating an effective tool to help us dealing with the global challenges that lay ahead.

Luigi Di Maio

**A SPECIAL EVENT
HOSTED BY THE G20
ITALIAN PRESIDENCY**



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1. EVENT OVERVIEW





1.1 INTRODUCTION

The world is facing the rise of increasingly complex global challenges that ask for the adoption of multilateral responses. Thus, collaboration among countries and international innovation ecosystems becomes more and more imperative.

This is one of the main rationales behind the **G20 Innovation League event** - held in **Sorrento** on **October 9th and 10th 2021** - that serves as a bridge of cooperation between **public** and **private innovation players, startups** and corporates on a **global scale**.

We strongly believe that innovation can be the key answer to many challenges that the world is facing nowadays, and startups are one of the main ingredients: they bring new and **disruptive ideas** on the table, they push an agenda of necessary change, and they create **new opportunities** for the society and territory they operate in.

1.2 KEY NUMBERS

- **88 startups** from **24 Countries** (Argentina, Brazil, Canada, China, Democratic republic of Congo, Estonia, Finland, France, Germany, Indonesia, Italy, Japan, Mexico, Norway, Russia, Saudi Arabia, South Africa, South Korea, Spain, Switzerland, The Netherlands, Turkey, UK, USA)
- **66 Venture Capital Funds** from **21 Countries** (Argentina, Austria, Belgium, Brazil, Canada, China, Democratic Republic of Congo, France, Germany, Indonesia, Italy, Japan, Mexico, The Netherlands, Russia, Saudi Arabia, Singapore, South Korea, Spain, Turkey, USA)
- **23 Corporates** from **10 Countries** (Belgium, Finland, France, Germany, Italy, Portugal, Singapore, Spain, Sweden, The Netherlands)
- **10 Institutions** from **8 Countries** (Democratic Republic of Congo, France, Italy, Japan, The Netherlands, Russia, Saudi Arabia, UK)
- **216 participants in total** (101 in presence and 115 digitally): 122 VC managers, Corporate and Institutions, apart from 94 people of start-up.



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1.3 ITALIAN G20 PRESIDENCY

The pandemic made clear that we live in an era in which local problems swiftly become global challenges. This, however, also means that we can work together to recover from this crisis and seize the opportunity to build back better, learning from our shared experience and ensuring that **efficient, innovative tools** and **technologies** become the basis for a more **resilient, sustainable** and **green growth**.

In an increasingly interconnected world, multilateralism is far more than an abstract concept. It is the key to responding to these challenges and the G20, bringing together much of the world's population and of the global economy, must live up to its role. Therefore the 2021 **G20**, under **Italian Presidency**, will focus on three broad, interconnected pillars of action: **People, Planet, Prosperity**.

Within these pillars, we are taking the lead in ensuring a swift international response to the pandemic – able to provide equitable, worldwide access to diagnostics, therapeutics and vaccines – while building up resilience to future health-related shocks.

We are also looking beyond the crisis, towards ensuring a rapid recovery that addresses people's needs. This implies a focus on reducing inequalities, on women's empowerment, on the younger generations and on protecting the most vulnerable. It means promoting the creation of new jobs, social protection and food security.

The G20 is also intent on paving the way to rebuild differently in the aftermath of the crisis. More efficiently, through a better use of **renewable energies** and with a firm commitment to **protect our climate** and our common **environment**.

This is a prerequisite for our sustained prosperity. A prosperous future, however, also requires that we properly harness the main drivers of growth and innovation. We are working to bridge the digital divide and make digitalization an opportunity for all, improve productivity and – in short – to leave no one behind.



1.4 GOALS OF THE INITIATIVE

As **Minister Di Maio** mentioned during the event: *“The outbreak of COVID-19 has affected our daily life and has worsened longstanding systemic trends, from climate change to inequality. The pandemic has also highlighted how fast, in a complex and interconnected world, local gaps can evolve into global challenges. To tackle them effectively, we need new, holistic and multi-stakeholder approaches.”*

Hence, the G20 Innovation League Special Event represented a unique opportunity to:

- Support G20 Governments in enhancing their ability to **share views** and to increase **multilateral collaboration** on specific, relevant and globally recognized challenges that can be approached by promoting a fair and co-operative framework among the largest investors and the most brilliant start-ups in the world;
- Enhance the ability of the G20 most prominent investors to **adopt a cooperative approach to open innovation**, by identifying, leveraging, boosting and bringing to the market start-ups that would contribute, with their product and solutions, to solve some of the most demanding challenges worldwide;
- Boost the **international flows of market-based investments** on cutting-edge innovation realized by outstanding companies to the benefits of the mankind, by doing so reinvigorating also international trade and identifying potential.



*Minister of Foreign Affairs and International Cooperation
of the Italian Republic, Luigi Di Maio*

2. INSTITUTIONAL REMARKS





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Guest of Honor:

*former OECD Secretary-General,
José Ángel Gurría Treviño*

For the very **first time** in the **history** of **G20**, Institutions, Venture Capitalists, Startups and Corporates from all over the world convened to share their perspectives on purposeful innovation. This opened the opportunity for several valuable institutional remarks from

international **Keynote Speakers**, including Minister of Foreign Affairs and International Cooperation of the Italian Republic, **Luigi Di Maio**; Minister for Technological Innovation and Digital Transition of the Italian Republic, **Vittorio Colao**; the President of the Italian Trade Agency, **Carlo Ferro**; the Chief Executive Officer of CDP Venture Capital – National Fund for Innovation, **Enrico Resmini**; former OECD Secretary-General, **José Ángel Gurría Treviño** and last but not least the CEO of the Dubai Future Foundation, **Khalfan Belhoul**.

The guest of Honor, former OECD Secretary-General, José Ángel Gurría Treviño delivered an interesting speech about the **“Role of Innovative Technologies and Start-ups in Tackling Global Challenges”**, some highlights:

“Technological Progress is there for the taking; there for the making; there for exploiting; there for improving society and our standards of living. It’s happening whether we like it or not it’s inevitable; it’s irresistible and it’s irreversible. [...] Technology can improve us, but it can also challenge us in many ways:

- *In our work, where nearly 14% of jobs in OECD countries are likely to be automated, while another 32% are at high risk of being partially automated.*
- *In our society, where the presence – or absence - of digital tools will determine our access to services and opportunities.*
- *And in our ethics, where the use – and misuse – of information and personal data can undermine trust and destroy lives and livelihoods.”*

3. MARKET INSIGHTS ON THE 5 CHALLENGES





Through economic diplomacy, Italy aims at achieving a fairer, greener, more digitalized and inclusive society and to foster a competitive, dynamic and cutting-edge economy.

We picked **5 challenges** that represent not only the problems that humanity is dealing with in this historical moment, but also fields where innovation is thriving, bringing together industries with transversal technologies, new business models and inventions.

During the event, **5 international experts** on these cutting-edge topics shared insightful trends and data through Keynote Speeches.

3.1 THE CHALLENGE AND OPPORTUNITIES OF CLEANTECH

“In December 2019, the European Commission introduced an ambitious proposal to make the bloc climate-neutral by 2050. Decarbonizing Europe can have broad economic benefits, including GDP growth, cost-of-living reductions, and job creation.

Five sectors emit the bulk of the European Union’s greenhouse gases: 28% comes from transportation, 26% from industry, 23% from power, 13% from buildings, and 13% from agriculture. Across sectors, fossil fuel combustion is the biggest source of GHGs, accounting for 80% of emissions.

Although achieving net-zero emissions will require sustained effort across sectors, some could meet the target more quickly than others, in the following order:

- **Power:** Because wind and solar power generation technologies are already available at scale, power would be the quickest sector to decarbonize, reaching net-zero emissions by the mid-2040s. The demand for power would double as other sectors switch to electricity and green hydrogen, requiring renewables production and storage capacity to be rapidly scaled.
- **Transportation:** This sector would approach climate neutrality by 2045. EVs are already in early adoption, but it will take some ten years to set up supply chains to support a switch to 100 percent EV sales, from mining the raw materials for batteries to assembling EVs. Once this happens, emissions can be reduced quickly, except for those from aircraft and ships that are too big and travel too far to rely on battery power. They must opt for the more expensive solution of switching to biofuels, ammonia, or synfuels.
- **Buildings:** Most of the technology required to decarbonize the buildings sector is already available. However,



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renovating large portions of the European Union's building stock is a massive undertaking. The share of dwellings using renewable heating sources would need to increase to 100% from just 35% today. Gas usage in buildings would also need to fall by more than half. The buildings sector would reach net-zero in the late 2040s.

- **Industry:** The most expensive sector to decarbonize, industry would need some technology that is still under development. As a result, it would reach net-zero by 2050. Even then, the sector would continue to generate some residual emissions from activities such as waste management and heavy manufacturing, which would have to be offset.
- **Agriculture:** Using more efficient farming practices could reduce agricultural emissions. But it's by far the hardest sector to abate because more than half of agriculture emissions come from raising animals for food and can't be reduced without significant changes in meat consumption or technological breakthroughs. Like industry, our cost-optimal pathway requires offsetting agriculture emissions with negative emissions in other sectors and increasing natural carbon sinks.

Most of the required technologies are available, but accelerated innovation will be critical”.

Kate Smaje, Global head Digital & Analytics, member of global board, McKinsey & Company

For further insights on the topic:

<https://www.mckinsey.com/business-functions/sustainability/our-insights/how-the-european-union-could-achieve-net-zero-emissions-at-net-zero-cost>

3.2 HOW TO MAXIMIZE THE POTENTIAL OF AI WHILE MANAGING ITS RISKS

“Artificial Intelligence is defined as the ability of a machine to autonomously perceive, understand, decide and react to its environment and its ability to independently enhance its functions and intelligence over time.

According to a survey conducted by Bain&Company among their clients, 60% of respondents have adopted at least one model, however we are still in early innings, with 40% of adopters using AI for less than 10% of their applications.

The use cases adopted so far go from **customers** use cases (insights, targeting, service, etc.) to **operational** use cases (i.e., workflow automation, pricing models, demand forecasting) and from **cross-industry standard** use cases (e.g., IT management, financial planning) to **industry** specific (e.g., automated diagnosis in Healthcare; asset utilization and long-range planning in Industrials).



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When embracing AI/ML, the top 3 criteria are cost, ease of integration, and time to market. Uncertain ROI and integration difficulties are biggest barriers to scale further. Moreover, enterprises increasingly care about data and control – company data policies are table stakes for data access.

When looking at key trends to 2026, the expected market size for AI would be around \$800B, with ~20% CAGR compared to 2021. The global AI software revenues would be led by Deep Learning (62% of revenue share), Machine learning (19%) and Natural Language Processing (9%).

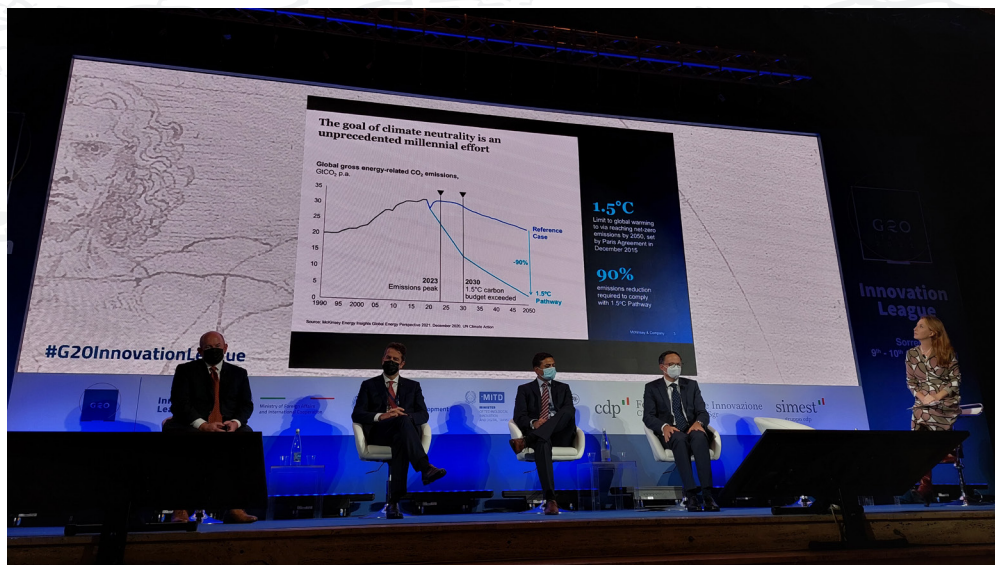
Even if these projections look good, we are still far from AI potential, as of today: only 25% of AI projects reach or exceed their objectives, and only 1/3 of AI-driven initiatives reach planned scale.

We found that most of ML/AI projects fail for one of the following barriers: lack of clear objectives, “quick wins” come too late, too cumbersome for daily use, over-reliance on tools, under-estimate human factors.”

Vittorio Bonori, Expert partner, Advanced Analytics EMEA, Bain & Company

For further insights on the topic:

https://www.ice.it/en/sites/default/files/inline-files/Artificial-Intelligence_Bonori.pdf



Keynote speakers,
Kate Smaje,
Vittorio Bonori,
Brian Collie,
Tim Good,
Akshay Agarwal

Moderator,
Barbara Carfagna



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3.3 BUILDING SMART CITIES AND THE FUTURE OF MOBILITY

“There are several key forces converging to unlock opportunity never-before possible towards a new mobility, that are AI / Machine Learning, Tech Maturity with consequent reduction of costs, Attitudinal Shifts, Connectivity, Regulatory Pressures.

The **key trends** in the industry are:

- From gas guzzlers to electrified vehicles: more than 70% of new vehicles full hybrid or cleaner by 2035, 95%+ if including mild hybrid
- From hardware to software: 100% connected by 2030; OTA updates the norm; new biz models emerge
- From product to service: lifetime revenues from subscriptions, upselling, and ecosystem services up to \$10k per car
- From single use to circular with net-zero production, recycled content quotas, modular & upgradeable components
- Active safety from luxury to common good: ~50% of new vehicles in 2030 to be L2 /L2+
- From privately owned to sharing, that will account for ~30% VMT in major MSAs (due in large part to L4); seamless intermodal mobility providing greater mobility access and reliability

However, radical industry disruption is never easy — we see **five key industry-wide imperatives**:

- Reinvent for Advantage: business model, cost structure, talent, partnership ecosystem; i.e., challenge everything
- Strengthen Resiliency: E.g., Lost sales of 10-12M vehicles in 2021 due to semiconductor shortage
- Build the Infrastructure: E.g., Over \$1,000 in utility transmission and distribution upgrades required per EV sold in U.S.
- Align Regulatory Frameworks: E.g., EU’s AV policies not harmonized, restricting cross border travel
- Fund the Journey: E.g., Automakers will require more than \$400B in capital by 2025 to enable EV ambition

Lastly, the threat of unintended consequences is massive. Successfully navigating the change before us will require a level of public/ private collaboration rarely before seen.”

Brian Collie, Global leader for Automotive & Mobility, Boston Consulting Group

For further insights on the topic:

https://www.ice.it/en/sites/default/files/inline-files/Smart-Cities-and-Mobility_Collie.pdf



3.4 AUGMENTING HUMANS THROUGH TECHNOLOGY WITH IOT AND WEARABLES

"It is important to look at IoT & Wearables through a human lens. Indeed, being digital used to be an aspiration, now it's an imperative for survival. Our research found that by meeting fundamental human needs through work, organizations can unlock people's full potential, paying attention to:

- Expediting assembly and reducing worker stress with AR connected worker and Skylight
- Digital Watchman: a new era of workforce safety, control and performance in oil and gas
- Thrive Wellness: prioritising mental wellness and advocating practising self-care
- Thus, it is imperative to put people at the centre of change."

Tim Good, Managing director - Lead, Talent & Organisation / Human Potential, Europe, Accenture

For further insights on the topic:

https://www.ice.it/en/sites/default/files/inline-files/IoT_Good.pdf

3.5 REINVENTING THE FUTURE OF HEALTHCARE

"As John F. Kennedy noticed, when written in Chinese, the word "crisis" is composed of two characters. One represents danger and the other represents opportunity.

During the pandemic, we faced unprecedented challenges in a complex world, forcing us to achieve things that nobody thought would have even been possible, for instance:

- NHS Nightingale Hospital London completed and operational in 10 days
- Leishenshan Hospital completed in 12 days

We witnessed the power of collaboration for supported research, manufacture and distribution of vaccine candidates. New technologies becoming realities: the use of telehealth consultations is now 20x higher than pre pandemic, and US venture capital deployment in health tech has doubled between 2019 and 2020.



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There are **several structural challenges** in the healthcare landscape that need to be addressed:

- The world's population continues to grow at 2% rate (2016-2025)
- The population is getting older: 4x people over 65yr olds in the next 30 years
- There is an increased prevalence of disease: \$47 TN spend on chronic disease in next 20 years
- Treatment is getting more expensive: 3x Drug prices increases vs inflation in the US

Three trends will reshape the future of healthcare:

- personalised, consumer-driven and patient-centric: clinical pathways modelled around individual patient needs
- big data: analytics completed on interconnected and compatible data
- digital technologies becoming mainstream: holistic care augmenting traditional care models"

Akshay Agarwal, EU Head of Healthcare, Oliver Wyman

For further insights on the topic:

https://www.ice.it/en/sites/default/files/inline-files/Healthcare_Akshay.pdf

Following the Institutional Remarks and Keynote Speeches, **5 simultaneous pitching competitions** on the different challenges took place and led to the identification of 10 winning startups.

4. LEGACY





For the first time ever, through the G20 Innovation League, the G20 had the possibility to dispose of a tool aimed at strengthening global cooperation among public and private innovation players (startups, corporates, investors, institutions) with the goal to find solutions to the most urgent challenges faced by people. In the **framework** of the **G20 Heads of State and Government Summit (Rome, October 30th-31st 2021)** G20 Leaders welcomed the results of the G20 Innovation League outcomes, “as a platform through which multilateral endeavours can **boost partnerships, collaboration, co-creation, and private investments** in technologies and applications benefitting humankind, highlighting how trade and digital policies can help strengthen the competitiveness of MSMEs in global markets and address the particular challenges they face”.

Thus, the first **G20 Innovation League event** that was held in Sorrento on October 9 and 10 could **serve as a model** to be replicated by the following Presidencies, creating a legacy to be further developed starting with the **Indonesian Presidency in 2022**.

To ensure the development of the G20 Innovation League legacy and to consolidate a network of innovative VCs, startups and corporate at G20 level, the Italian G20 Presidency will create a **Coordination Desk**, to be set within Italian Trade Agency. Such a Coordination Desk will operate for a 3/5 years period in support of the incoming G20 Presidencies with a view to favour the consolidation of the G20 Innovation League’s results and its evolution into the G20 Innovation Network.

In 2022, **Italy** and **Indonesia** will **work closely** to ensure continuity to the initiative and to monitor its progress. To this aim, the following key activities will be carried out by the Indonesian G20 Presidency with the full support of the Coordination Desk in between the first and second edition of the G20 Innovation League:

- Incorporate key learnings and optimize the organization/selection process for the second edition of the event by leveraging the network and contacts built in 2021
- Monitor progress made by the top 10 winning startups with respect to their respective challenge and their engagement with corporates and investors, and prepare a report to be presented on the 2022 edition of the event
- Further develop the digital platform to foster matchmaking among public institutions, VCs, startups and corporates. The platform could be active and accessible throughout the year by participants



Indonesian Delegation

5. WINNERS





5.1. THE CHALLENGE AND OPPORTUNITIES OF CLEANTECH

1st winner: ACT BLADE



ACT Blade Ltd

- **Product and value proposition:** The ACT Blade technology is the lightest, most controllable, and only modular wind turbine blade ever developed. ACT Blade is up to 32% lighter than conventional blades, enabling blades 10% longer and directly contributing to the production of 9% more energy with a 7% reduction in the LCOE. The component-based ACT Blade will reduce the cost of tooling by 60%. Its factory will be 47% smaller than those of conventional blades. By 2030, our installed ACT blades will contribute to displacing 274ktons CO2 emission from conventional power generation and increasing wind energy by 937GWh. ACT blade is designed for a sustainable end-of-life approach and provides an opportunity to expand in remote areas and create local jobs and skills. ACT Blade has partnered with Enel Green Power via their Open Innovability® model.
- **Market:** Wind energy needs turbines with longer blades to remain a competitive renewable energy source. However, current blades' composite construction means longer designs increase weight and raise total costs. Wind turbine manufacturers operate worldwide, and blades are a key area of strategic decision-making in terms of supply chain management, especially decisions regarding internal production vs. outsourcing. Currently, the industry's value chain comprises only of few Asian independent blade manufacturers. Till 2030, the yearly wind turbine blade market value is about €18bn. ACT Blade has already secured an early adopter based in Italy for a "first of a kind" test.
- **Team:** Directors and founders, Dr Sabrina Malpede (CEO), Dr Donald MacVicar (CTO) and Dr Alessandro Rosiello (CFO) have seventeen years of experience in developing and commercialising innovative technology. To prepare and execute their market entry, Mr John Rimmer recently joined the company. Mr. Rimmer brings more than 20 years of experience in blade design and manufacturing. Before joining ACT Blade, John was Senior Director of Rotor Engineering and Managing Director of the Vestas blade manufacturing operation the UK.
- **Key metrics:** ACT Blade Ltd, founded in Edinburgh in 2015, has developed the ACT blade technology, protected by two families of worldwide patents. In Q1 2021, an ACT27 survived all structural test at the accredited labs at the Offshore Renewable Energy Catapult, while in Q3-2021 we installed a set of three ACT27 blades on a 225kw V27 turbine near Glasgow, which are currently producing energy. The company has received a seed investment in 2016 and is currently supported by the EIT InnoEnergy funds. ACT Blade will start earning revenues in 2023, become profitable in 2024 and reach €300m+ in sales by 2030.
- **Contact:** Sabrina Maria Malpede, Managing Director - Tel: +44 7919 888 654 Email: s.malpede@actblade.com



2nd winner: Biomicrogel

BIOMICROGELS GROUP

- **Product and value proposition:** Biomicrogels® are new and internationally patented biopolymers and advanced modifications based on deep processing of agricultural raw materials that replace standard synthetic petroleum-based polymers used today in a wide range of human activities. Biomicrogels® separate any types of oils, fats and greases as well as petroleum products from the surface or in water and gather them in microcapsules. In this form, oils can be easily separated from water or from solid surface, and after separation, these oils can be returned to the technological cycle. <https://biomicrogel.com/en/products/> The industrial products based on Biomicrogel® technology help purify water up to 10 times more efficiently and more economically than similar solutions, while optimizing the involved processes in terms of energy costs and greenhouse gas emissions. <https://wonder-lab.eu/> WONDER LAB® brand consumer products based on Biomicrogel® technology include eco-friendly household products, laundry gels, pet care shampoos and cosmetic products.
- **Market:** The market opportunity covers 4 key areas with an estimated market size of about 300 billion dollars in total: Home care and cosmetic: signed contracts with retailers exist with a potential for \$100 M annual revenue; Vegetable oil extraction: industrial trials have passed successfully and contracts have been signed with distributors with a potential of \$50 M annual revenue; Industrial and technological wastewaters and spent metalworking fluids treatment: industrial trials have been passed successfully and contracts have been signed with a potential for \$15 M annual revenue. A Memorandum of Understanding has been signed with one of the biggest Japanese high-tech corporations; Oil spill response: successful participation in the elimination of the biggest oil spill in the Arctic region in 2020.
- **Team:** Biomicrogels Group account for more than 100 experienced staff in the company. Offices in the UK, Poland, Russia and Southeast Asia serve global activities, with a Board of Directors with background in research, entrepreneurship and the industry (GEA engineering).
- **Key metrics:** Biomicrogels Group has the full cycle in-house that includes R&D, laboratories, engineering, production lines, full supply chain, marketing and sales. expected EBITDA margin over 45% in the next 5 years. The current production capacity is 18 000 tons of Biomicrogel® polymers annually and can be substantially increased within a few months. More than 130 patents in 62 countries of the world, including Europe, USA, Canada, India, China, Japan and the Persian Gulf countries. WONDER LAB® with European type I Ecolabel certificate.
- **Contact:** Tel: +442081577011 Email: info@biomicrogel.com

List of other participating startups

Advanced Solar Power, Algramo, Energyworx, Exergy Power Systems, Manifest Climate,
Biosolvit, Efficient Energy, Eggtronic, Greemko, Green Nov, Keclon, Lixea, Pureechem co, R-PUR,



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Sadeem International Company,

Sensgreen IT, TerViva,

Waste4change.

5.2. HOW TO MAXIMIZE THE POTENTIAL OF AI WHILE MANAGING ITS RISKS

1st winner: NtechLab



- **Product and value proposition:** NtechLab develops advanced AI based video analytics software. It has broken records in terms of the accuracy and speed in which it recognizes faces, silhouettes, vehicles and human actions within video streams. This also includes vehicle detection. In 2021, NtechLab topped the U.S. National Institute of Standards and Technology (NIST) Face Recognition Vendor Test (FRVT). This competition identifies and assesses benchmarking for face recognition accuracy, for both object verification and identification. NtechLab software is designed to help organisations and businesses make better and more informed decisions with richer audience analytics. It also enables governments and security services to act with greater speed and confidence.
- **Market size and issues:** Estimated value of the market - \$50 billion. Market disruption - over 1 billion cameras are manually operated. This can be done by video analytics software, but the technology needs to be exceptionally accurate, reliable and versatile.
- **Team:** The Director of Research Artem Kukhareenko founded NtechLab in 2015. The driving force behind the company's face recognition technology Artem is also director of the company's neural networks and deep learning lab. The CEO Andrei Telenkov brings over 20 years of experience in management and strategic consulting. Prior to joining NtechLab he spent many years in senior consulting roles at McKinsey and Accenture. Moreover, the company counts 165+ professionals, 100+ R&D employees, 60% employees with startup experience.
- **Key metrics:** US patent – Object identification using artificial neural network. 97% CAGR year-on-year revenue growth; Last round of funding - USD 14 million.
- **Contact:** Tel: +7 (499) 110-22-54 Email: info@ntechlab.com



2nd winner: Ruangguru



- **Product and value proposition:** Ruangguru is an AI powered and adaptive learning Super App that combines interactive and high-quality content materials with personalized learning experiences delivered through technology. Our goal is to offer a better quality, effective, and affordable online learning solutions. Moreover, Ruangguru offers subscription-based professional and skill-based courses through Skill Academy. Ruangguru also helps the companies to deliver more effective, efficient, and scalable corporate training.
- **Market:** with 56 Million students, 300,000 Schools and \$40 Billion spent in Private Education, Indonesia is the 4th largest education system globally, yet also one of the lowest performing.
- **Team:** >5,000 employees.
- **Key metrics:** Through our various products and services, we have established ourselves as the largest education technology company in Southeast Asia, with >25 Million international users; 96% students say Ruangguru is more effective & appealing than other alternatives.
- **Contact:** Tel: 0062 818 811 117 Email: anggini@ruangguru.com

List of other participating startups

AI Medical Service,
Deep Legal,
Dexter Energy Services, Enlabeler
Pty,
Entelai,

Expert.ai,
Konux,
Kueski,
Neuro Event Labs Oy,
Openedges Technology,

Quantum Platform,
Segmentify Software,
Shift Technology,
Sofiathinks - Smart lot Labs.



5.3. BUILDING SMART CITIES AND THE FUTURE OF MOBILITY

1st winner: Virtuo Technologies

VIRTUO

- **Product and value proposition:** Virtuo is an unparalleled car on-demand experience. Pick up or get a pristine car delivered to your door, unlock it with the app and hit the road. No queues, no hassle, just freedom. While micro-mobility and ride-hailing are designed for inner city travel, Virtuo is the missing link for longer trips away from our cities.
- **Market:** Cars cost us a lot, take up space, and are one of the biggest contributors to our carbon footprint. The average personal car sits idle for 95% of its lifespan. Virtuo believes in a future without personal cars in cities. Indeed, Virtuo's on-demand car experience provides the freedom you crave and is better for people, cities & the planet.
- **Team:** Virtuo was founded in 2016 by Thibault Chassagne and Karim Kaddoura and now consists of a team of 130 Virtuosos, based across our markets.
- **Key metrics:** Virtuo has raised \$130 M so far (Axa Venture Partners, BPI, Alpha Intelligence Capital, H14, Balderton Capital, Iris Capital, Raise Ventures) and peaked in the summer with a fleet of 4000 cars. The service is present in 4 countries & 20 cities.
- **Contact:** Tel: 0033676988020 Email: marie.muller@govirtuo.com



2nd winner: Dott

dott

- **Product and value proposition:** Dott is a leading European micro-mobility player, offering clean, sustainable and affordable mobility solutions to over 600,000 monthly active users in 40 cities across 9 countries. With a fleet of 50,000 e-scooters and 10,000 e-bikes, we are a market leader in many of Europe's largest cities, including Paris, London, Rome, Milan and Brussels.
- **Market:** tens of millions of people moving inside cities every day. Dott's vision is to service every trip within cities that is not walking or public transit, and specifically replace car & taxi trips.
- **Team:** ~500 employees, founding team with a background at Uber, Facebook, Decathlon, Wayfair, Telsa, Lyft
- **Key metrics:** capital efficient strategy, at least 2x better results for 1/3 of the capital spent by others
- **Contacts:** Tel: 0044 7469 883 800 Email: steve@ridedott.com

List of other participating startups

Advance Innovation Co (Morni),
Ambeent Wireless,
Bitsensing,
Hoja,
Home Agent,

Karos,
Lava Locker - Smart Point,
Miituo,
Miovision,
Moova,

Phononic Vibes,
Plantx corp.,
Recyclo-Congo,
RFSenS,
Terminus Group.



5.4. AUGMENTING HUMANS THROUGH TECHNOLOGY WITH IOT AND WEARABLES

1st winner: Poka

Poka

- **Product and value proposition:** Poka is the most comprehensive connected worker platform built specifically for manufacturers. The company's mission is to provide a hub for operational knowledge in factories by empowering workers to learn, solve problems and collaborate in real-time directly from the production floor. Poka has supported many companies in driving measurable improvements in core performance indicators such as an 8% productivity gain at Bosch and a 40% reduction in training costs at Danone.
- **Market:** The Connected Workers market reached \$3.1B USD in 2020 and is projected to grow to \$13B USD in 2028. The strong growth so far and the projections reflect the importance of the emerging Connected Worker solution category for industrial companies especially at a time when the manufacturing industry is reeling under severe labour shortages and facing unprecedented pressure to hire, upskill and retain workers. It's calling out for a solution to address this problem and move the industry into the digital age to deliver real value by improving manufacturing outcomes.
- **Team:** Poka is 135 employees strong and growing; Our Founders come with experience in leading corporations like Microsoft and Ubisoft capturing the latest best-practices when it comes to the technology underlying our platform, and the Manufacturing business having witnessed the needs of today's operations first-hand that inspired a product that's truly empathetic to our customer industry and frontline worker first approach.
- **Key metrics:** We grew by over 470% from 2017 to 2021, so much so that our high speed of growth is acknowledged in us being named in the fastest growing companies in Canada as well as North America by the Deloitte Fast50 and Fast500 programs last month. These awards and Poka's \$25 million Series B financing round earlier this summer reflect our commitment towards helping manufacturers with Connected Worker solutions.
- **Contact:** Tel: 418 573-9988 Email: aleclerc@poka.io



2nd winner: Zerynth



Enabling IoT

- **Product and value proposition:** Zerynth helps companies easily get their industrial processes digitized and bring innovative connected products to the world. The Zerynth IoT Platform is a full set of hardware-software tools designed by IoT experts to enable digital transformation in a fast, flexible, and secure way.
- **Market:** Every year manufacturing companies are losing \$0,5M for not digitizing and integrating their operating equipment. Assets are 20 years old on average and, due to complexity and scarce robustness of typical IoT solutions, nearly 30% of companies failed to implement IoT, while 97% are concerned about its security.
- **Team:** Founded in 2015, Zerynth has grown steadily. Today Zerynth has 30+ team members with deep IoT expertise and industry knowledge with over 100 customers across many industries.
- **Key metrics:** €1M+ revenue in 2021, 3X Yearly Growth Rate, €2M Venture Capital Funds Raised, 3 Patents.
- **Contact:** Tel: 0039 0508068225 Email: info@zerynth.com

List of other participating startups

Advotics,
Bintify,
Braincube,
Chipus Microeletrônica,
Drixit,

Getech Technology,
Kleverness,
Lullaai Networks,
Miragesoft,
Mode Sensors,

Saudi WakeCap Technologies
Company,
Super Motorica.



5.5. REINVENTING THE FUTURE OF HEALTHCARE

1st winner: Nalagenetics



NalaGenetics

- **Product and value proposition:** Nalagenetics is a medical technology company focusing on personalized screening and intervention. The company has four product pillars: Clinical Decision Support for providers, Genetic Testing services (5-10x more affordable in the market), Knowledge Base and algorithms to generate clinically actionable reports, and continuous patient engagement via mobile app.
- **Market:** Asia Pacific pharmacogenomics market will grow by 10.3% annually with a total addressable market cap of \$21.7 billion over 2020-2030. The need for pharmacogenomics data and service in this part of the world is pressing. 80% of all genetic discoveries are based on Caucasian populations, creating about a 10 Billion dollar opportunity, centered around creating local evidence and better prediction algorithms for drug response and chronic conditions.
- **Team:** Nalagenetics consists of 65 employees from reputable universities including 4 Ph.D. graduates.
- **Key metrics:** Annual revenue 3-5M USD; Funds raised to date or last round: 3.4M USD; # of patents: 2.
- **Contact:** Tel: 0062 817 913 0787 Email: levana@nalagenetics.com



2nd winner: Sansure Biotech



- **Product and value proposition:** Sansure Biotech Inc. is an in vitro diagnostic solution provider integrating diagnostic reagents, instruments and independent clinic laboratory services with its own innovative gene technology as its core. The company has developed more than 400 kinds of products with the characteristics of infectious disease prevention and control, cancer prevention and control, maternal and child health, blood screening, chronic disease management and emergency prevention and control, which surpass the advanced level of domestic and foreign products.
- **Market:** The global molecular diagnostics market was valued at USD 9,371 million in 2020, and it is expected to reach 15,196 million by 2026, registering a CAGR of 9.2% during the forecast period. Molecular diagnostics is considered to be the best method to identify and characterize a microorganism.
- **Team:** Over #2000 employees, 40% involved in R&D and Customer-care Center focusing on research, analysis and optimization. The founder Dr. Lizhong Dai has a Ph.D background at Princeton University, Post-doctor at MIT and the team has a background in the top in vitro diagnostics industrial companies worldwide.
- **Key metrics:** In 2020, Sansure's full year revenue of 4.763 billion RMB, and reached 3.267 billion RMB revenue in the first three quarters of 2021. Sansure has over #200 international patents, 160 clients in over 160 countries/regional in the world, 3000+ top hospitals and labs in China as customers.
- **Contact:** Tel: 13817652883 Email: haid@sansure.com.cn

List of other participating startups

Aksense Medikal, Amboss, Axaitech,	HysensBio,	Onward Medical,
BiomeHub, Botkin.AI,	Integral Geometry Science,	Salauno, Stamm Vegh,
Congo Medika,	MMI, Nala Health, Neurometry,	Tissium, Tucuvi Care,
Faron Pharmaceuticals Oy,	Notch Therapeutics,	VectorY.


6. LIST OF VCS AND CORPORATES PER COUNTRY








 **Argentina** (Alaya Capital Partners, GRIDX)

 **Austria** (btov Partners)


 **Belgium** (Breakthrough Energy Ventures – Europe)


 **Brazil** (Crescera Capital, Bossanova Investimentos, Cventures, VOX Capital)


 **Canada** (Inovia Capital, McRock Capital, OMERS Ventures, Plaza Ventures)


 **China** (China Insurance Investment Co., Legend Capital, Oriza Holdings, Yunfeng Capital)


 **Democratic Republic of Congo** (Equity BCDC)


 **France** (Bpifrance Investissement, Elaia Partners, Iris Capital)


 **Germany** (Festo Didactic SE, HV Capital, Hyundai Motor Group, MIG Capital AG, TeamViewer Germany GmbH, TVM Life Science Management GmbH, Wellington Partners)


 **Indonesia** (Alpha JWC Ventures, East Ventures, MDI Ventures, Skystar Capital)


 **Italy** (Enel S.p.A., Indaco SGR, Innogest, Leonardo s.p.a., Postelitaliane, Snam, A. Menarini Diagnostics S.r.l., Eni SpA, Fincantieri Spa, P101 Ventures, Panakes partners, Vertis SGR SpA)


 **Japan** (Incubate Fund, Japan Airlines, KDDI Corporation, Real Tech Holdings Co., Ltd.)


 **Mexico** (Adobe Capital, Cometa, Dalus Capital, Proeza Ventures, Redwood Ventures)


 **Russia** (Almaz Capital Partners, Orbita Capital Partners, Unicorn Capital Partners, VEB Ventures LLC)


 **Saudi Arabia** (Falak Investment Hub, Impact46, Tech Invest Com, Raed Ventures)

 **Singapore** (Fu Yu Corporation Limited, SP Manufacturing, ST Engineering Ventures, Wavemaker)

 **South Korea** (Korea Investment Partners, Smilegate Investment, LB Investment, LG Electronics, Samsung Electronics, SoftBank Ventures Asia, Stonebridge Ventures)

 **Spain** (Adara Ventures, Enisa, Globant, Indra), Turkey (Arz Asset Management, Arz Portfoy, Collective Spark, sanDiffusion Capital Partners), USA (resilienceVC)

 **The Netherlands** (Brightlands Venture Partners, Forbion, KPMG, KPN, LSP, Newion Partners, Philips, Port of Rotterdam, Prime Ventures, SET Ventures)

 **Turkey** (Arz Asset Management, Arz Portfoy, Collective Spark, Diffusion Capital Partners)

 **USA** (resilienceVC)



**Innovation
League**

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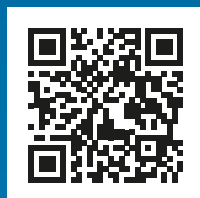
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