



INNOVATION
2035



“

**Innovation is the
ability to see change as
an opportunity,
not a threat.**

STEVE JOBS



CONTENTS

Introduction	04
Methodology	05
01. Historical Milestones	06
02. Megatrends & Local Impacts	08
03. Signals, Emerging Issues, and Delphi results	15
04. Trends, Weak Signals, Uncertainties, and Polarities	26
05. Scenarios	30

INTRODUCTION

To study the future is to study potential change, i.e., what is likely to make a systemic or fundamental difference over the next 10 to 25 years, or more. In this context, foresight is a systematic, participatory, prospective and policy-oriented process which aims to actively engage key actors in a wide range of activities: anticipating, recommending and transforming technological, economic, environmental, political, social and ethical futures.

The UNESCO Chair on Futures Research, hosted in the FORTH/PRAXI Network, in collaboration with the Special Secretariat of Foresight of the Presidency of the Government of the Hellenic Republic and the Hellenic Development Bank of Investments (HDBI), conducted an extensive foresight study on the “Future of the Innovation Landscape in Greece by 2035” to explore potential future opportunities and challenges.

The main output of this work is the detection of the main trends, the identification of the key uncertainties, and finally the synthesis of four alternative futures scenarios concerning Greece in 2035. It should be stated that the scenarios presented in this edition are not predictions. These scenarios help us deal with uncertainty and not to forecast what might happen. Our actions

and interactions, along with other natural phenomena independent of human intervention, shape the future in complex ways.

This study attempts to detect emerging issues of interest that may be indicating how present events might unfold in the long run. Our approach was therefore elaborated through the study of innovation structures; that is, through the identification of phenomena related to the formation of new start-ups, business models, R&D projects, policy priorities, acquisitions, socio-cultural attitudes, and other observable events. To understand plausible future developments, and compose alternative scenarios, we began by studying such signals in direct relation to the past and present of the Greek innovation ecosystem.

The produced scenarios in this edition focus on the exploration of alternative future developments and attempt to actively engage us in contemplating decision-making processes, enabling thus the creation of a preferable and sustainable future. As for HDBI, this work aims to highlight promising sectors in alternative, conflicting futures, and to offer diverse viewpoints on the changes ahead, unburdened by the usual linear future projections.



METHODOLOGY

The research team followed a multifaceted methodology that entailed the steps of a standard strategic foresight process, as depicted in Figure 1.

The first step included various input methods (i.e., desk research, interviews with experts, a two-round Delphi, and a participatory workshop) for gathering information. The collected information was then analyzed via a

number of methods (e.g., Trend Impact Analysis, Cross Impact Analysis) that provided new perspectives on the received input from the experts during the interviews. Finally, using the morphological analysis technique, four plausible scenarios for 2035 were composed based on a 2x2 combination of the diametrically opposed extreme states of the two most critical future uncertainties of the study's theme of interest.

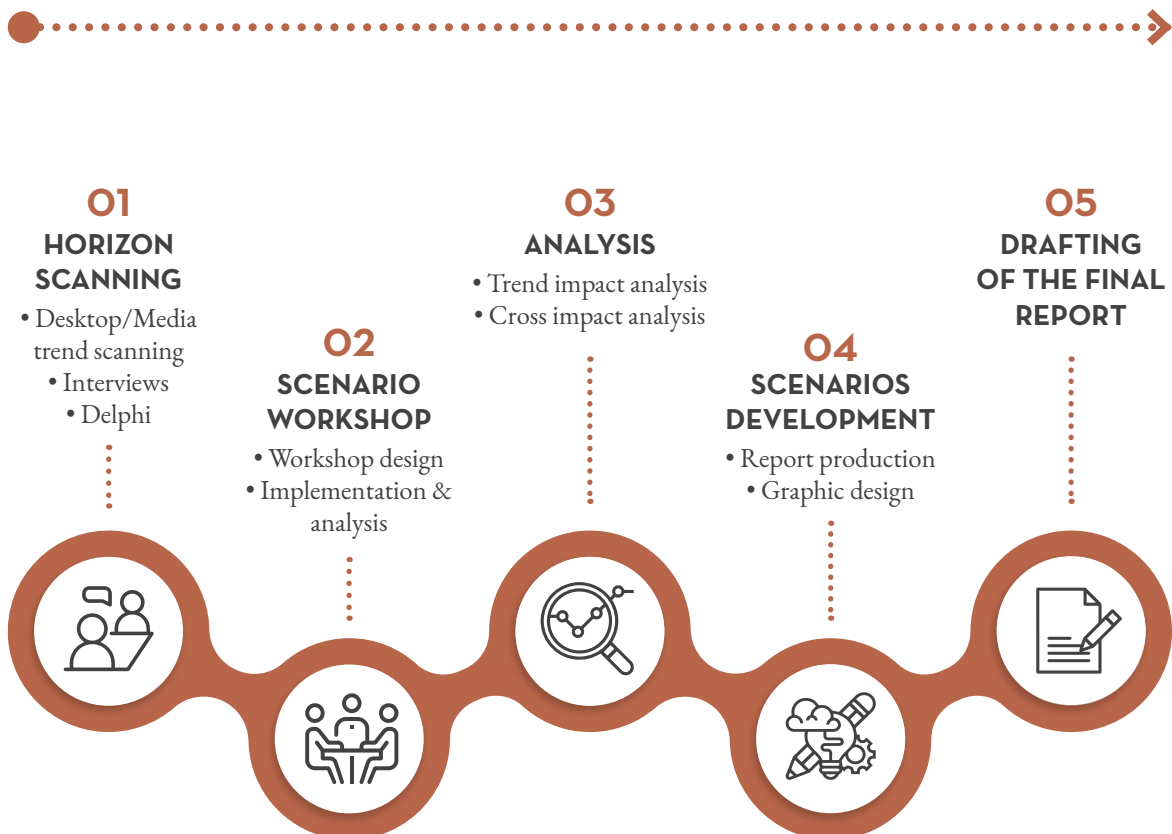
Figure 1

SEPTEMBER 2021

KICK-OFF

Objective setting, Time plan, Distribution of work

MAY 2022

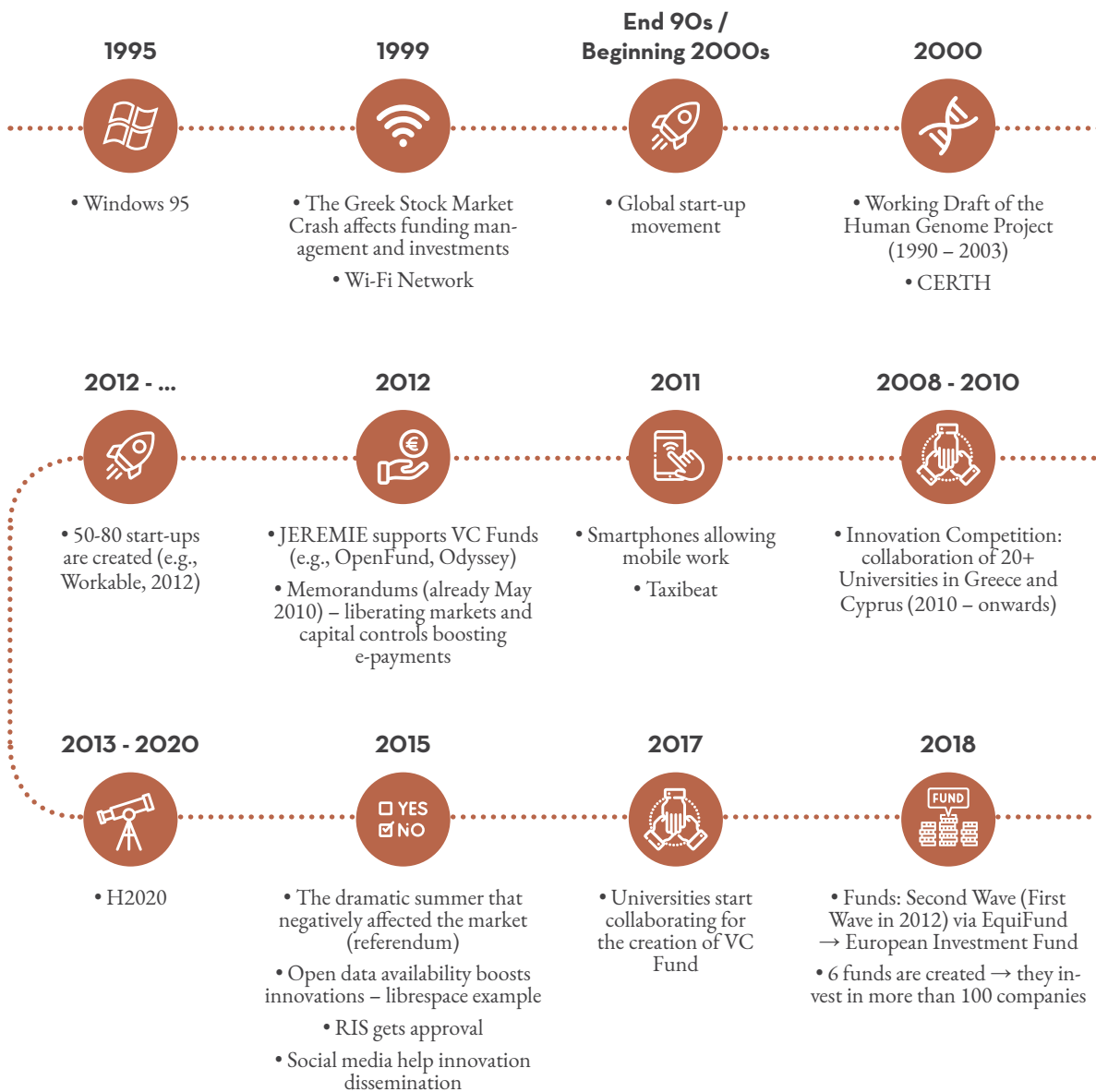


01. HISTORICAL MILESTONES

While the point of foresight is to develop insights into what could happen, looking to the past helps one discover common threads between events that have happened and are happening, revealing thus potential continuities of those in the future.

To this end, experts were invited during the interviews and the participatory scenario development workshop phases of the overall process to explore the past and to identify major historical milestones: important national or international events that had a substantial impact on the Greek innovation ecosystem.

An overview of the main milestones that affected our theme of interest over the period of the last three decades is presented in the following infographic.





2001



- 9/11 attacks – emphasis on security (risks)
- Expansion of the Internet

2002



- Citizens' Service Centre [KEII] created in Greece
- Introduction of digital marketing in Greece, with four big companies (i.e., Upstream, Velti, Globo)

2003



- Incubators creation
 - TANEO, what now is the Hellenic Development Bank of Investments (HDBI)

2004



- Facebook

2008 - ...



- Global financial crisis impacts
 - a) changes on investment choices and on fintech
 - b) innovation booster: companies change focus from commerce to R&D
 - c) Change of mindset towards real business and entrepreneurship
 - d) unemployment boosts start-ups

2007 - 2013



- FP7

2006



- Social media overexposure
- Innovation Units in Greek Universities & Courses around Entrepreneurship

2005



- Easier global traveling allows movement of ideas and connections
- Entrepreneurship Activities for High School students (Junior Achievement)

2020



- Softomotive sold to Microsoft for 150mE (bootstrapped case)
- New legal framework → ability to create a company in a few minutes
 - Crypto & blockchain
- February 2020: Covid-19, the first case is confirmed in Greece

2020 - ...



- COVID-19 → work from home option
- mRNA research boom

2021



- Pfizer Center for Digital Innovation (CDI) in Thessaloniki
- Open banking – API (2021-2022 onwards)

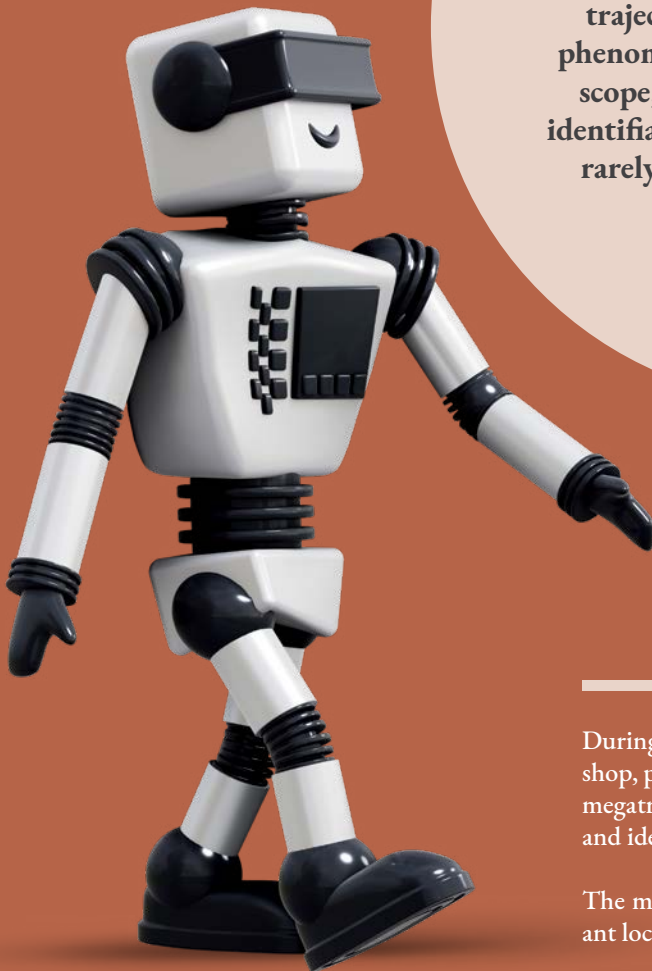
2022



- Implementation of the gov.gr platform.
 - Collaboration of RTOs for technology transfer (Ministry of Development)
 - Russian Invasion
- NATO – Defense Accelerator in Athens

02.

MEGATRENDS & LOCAL IMPACTS



Megatrend: a perceived long-term trajectory of a host of converging phenomena of global reach and broad scope, which is moving in a clearly identifiable general direction, although rarely linearly; a megatrend's local impact can vary.

During the participatory scenario development workshop, participants reflected on the pertinence of the major megatrends to the Greek innovation landscape by 2035 and identified their most important local impacts.

The major megatrends and their respective most important local impacts are presented below.



Acceleration of technological change pervading society



Low Impact

Middle Impact

Strong Impact



The acceleration of technology is changing the way we live and interact with one another. As novel technologies become more pervasive and integrated in the societal fabric, new kinds of networks are continuously emerging, both in a qualitative and quantitative sense: networks that involve purely humans, purely technological systems, or a mix of both. In other words, technological developments are both shaping and becoming shaped by the societies in which they are embedded, all the while enabling interconnections that may have not been possible before.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- Corporations collaborating in networks
- Digital platforms facilitating open access to knowledge
- Legal changes influencing the operations of universities
- Connectivity and availability of Big Data enabling the development of new products and services
- Innovative value offerings capitalizing on Deep Tech
- Manufacturing technologies transitioning to Industry 4.0
- Multinational corporations building up their presence in Greece
- Greek startups aiming at their acquisitions by other companies
- Fear of technological obsolescence fuelling efforts to keep up with technological change



Accentuation of environmental degradation calling for solutions



Low Impact

Middle Impact

Strong Impact

The increased intensity of human activities has overstressed the natural environment. The ensuing anthropogenic climate crisis is already impacting multiple regions worldwide, while the paradigm of extraction that has long guided the industrial economy has led to the severe depletion of multiple key resources. Albeit rather delayed, actions are now being taken to mitigate against the detrimental impacts of environmental degradation to safeguard the long-term sustainability of human presence within the natural environment.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- Increased availability of funding for environmental programs and projects
- Deployment of novel energy technologies
- Availability of climate change mitigation technologies
- Raising awareness through education and communication activities regarding the value of sustainability
- Need for resilient infrastructures in the face of environmental hazards
- Rising new business models adopting the Circular Economy paradigm
- Development of access to alternative mineral and fossil fuel resources
- Fostering investments in Renewable Energy Sources
- Improved means of agricultural and livestock production
- Widespread adoption of Environmental, Social, and Governance standards
- Growing sustainability sector creating job opportunities
- Advanced waste management solutions following the zero waste principles



Differential population growth amplifying economic imbalances



Low Impact

Middle Impact

Strong Impact

Various population segments around the world are changing at different rates: rapid growth is witnessed in developing nations, while the majority of developed countries seem to be facing demographic stagnation. This uneven geographical pattern of population growth in some parts of the world has already led to a heavy increase in the demand for food and shelter, natural resources, and energy, while at the same time forcing people to immigrate to countries that can offer them a better quality of life. This advancement seems to be stirring the waters of economic classes globally.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- New markets become available on a national and international level
- Emergence of lucrative investment opportunities
- Creation of new job opportunities, e.g., in remote working
- Provision of enticing retirement incentives
- Development of Universal Basic Income schemes
- Need for reliant food systems
- Rising demand for products and services that improve quality of life
- Social innovation solutions towards infrastructural advancements



Ageing populations necessitating improvements in wellbeing



Low Impact

Middle Impact

Strong Impact

Although the world's population is still growing, this change is qualitatively and quantitatively different in various parts of the world. Seemingly, elderly people make up an expanding share of the world's population, although in many countries the largest share of the population is still composed of young people. As the rate of expansion of the population share of elderly people increases, the technical and socioeconomic infrastructures of various countries are expected to get stressed. Nevertheless, this development creates both threats and opportunities.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- The silver economy growing into a booming market
- Increased demand for health technologies, biotechnology, and medical infrastructure
- Rising demand for products and services that improve quality of life
- Pension funds and insurance technology companies as alternatives to the collapsing retirement system
- Human resources shortage hindering economic growth



Increased urbanization fuelling a yearning for the countryside



Low Impact

Middle Impact

Strong Impact



In an effort to access more and better opportunities, people around the world seem to be moving away from the countryside and into the cities. Increased job prospects and improved healthcare and education services are some of the key reasons that motivate this transition. The growing population living in urban areas, however, multiplies the demands and the pressures exerted upon the cities' infrastructures, increasing the cost of life manifold. Therefore, some urban denizens yearn for a return to an imagined better life in the countryside.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- Need for better infrastructure particularly for transportation
- Critical importance of food systems and supply chains
- Development and deployment of technologies for smart cities and smart villages
- Segments of the population moving to peri-urban and/or rural areas
- Strengthening and multiplying innovation networks and synergies
- Increased risk of gentrification of certain areas, attracting wealthier people and displacing current inhabitants



Economic instabilities and shift to Asia: mutually affected



Low Impact

Middle Impact

Strong Impact



Economic instability has been on the rise in the West, and the ripple effects are being felt all over the world. The economies of Asian countries are growing and expanding, which is also affecting exports and jobs, leading, on the one side, to a heightened desire for economic migrants to relocate and, on the other, to the concentration of capital investments. In turn, these changing conditions on the production side are also deregulating the prices of goods and services, which is further intensifying economic instabilities in the global economy.

The major impacts of this megatrend on the Greek innovation ecosystem by 2035 include:

- Access to new markets accelerating the release of businesses from local economies
- Advances in blockchain and information and communication technologies facilitating the utilization of cryptocurrencies and the scaling up of new business models, such as Infrastructure as a Service and Software as a Service
- Risk landscape becoming more irregular, providing more opportunities and threats
- Increased competition for funding
- Changing conditions of international trade fuelled by strategic partnerships and alliances and increased international competition
- Need for safety standards for imported technologies and products
- Inevitable brain drain towards Asia

03. SIGNALS, EMERGING ISSUES, AND DELPHI RESULTS

Drawing on the findings of the previous phases of the overall process—i.e., horizon scanning and interviews with experts—10 thematic clusters of signals were created on the basis of their conceptual relevance. Afterwards, each cluster was interpreted taking into consideration the study’s theme of interest: the Greek innovation ecosystem. In that way, 10 emerging issues were elicited, one for each cluster, and identified as particularly pertinent to the Greek innovation ecosystem.

SIGNAL:

a perceived indicator of a small or local phenomenon that has the potential to grow in scale and reach

EMERGING ISSUES:

a perceived group of small or local converging phenomena of varying scale and reach

HORIZON SCANNING:

(also called environmental scanning) a systematic process of divergent exploration and convergent identification of signals that appear in various settings and areas of interest grow in scale and reach



The ten clusters of signals and their respective emerging issues are presented below.

**EMERGING
ISSUE 1:
Greece: a potential
global innovation
hotspot**

- Powershift to Asia
- Europe nurtures innovation
- Prestigious innovation centers in Greece
- Mission-oriented projects
- Greek bureaucracy and corruption
- Urbanization
- Rise of populism/totalitarianism
- Market hyper-regulation
- E-democracy
- New international alliances and the balance of power

**EMERGING
ISSUE 2:
Human resources
shortage**

- Freelance executives
- Aging and Greek diaspora
- Immigration
- Technology for the better integration of immigrants
- Middle class growth
- Multinational technology companies strengthen operations in Greece
- Upskilling initiatives

**EMERGING
ISSUE 3:
Widespread adop-
tion of sustainable
practices**

- Climate change
- Resource scarcity
- Energy cost for consumers ready to decrease
- Sustainability
- Circular Economy legislation and movements
- Biomimetics
- Impact investments
- Self-sufficient rural communities
- Novel diets
- Energy insecurity
- Locally sourced materials

**EMERGING
ISSUE 4:
Aging population
as a growing market**

- Anti-natalist movement
- Aging populations
- Silver economy
- Anti-aging / Rejuvenation
- Health-related innovation

**EMERGING
ISSUE 5:
Work flexibility
for wellbeing**

- Polarization in labor market influences political stability
- Great resignation
- Emotional exhaustion in workplaces endangers innovation
- Remote work
- Job sharing
- Polyworking
- Extended reality in the workplace
- Flexible working

**EMERGING
ISSUE 6:
Diversifying
education enables
innovation**

- Restructuring of the education sector
- Emphasis to soft skills
- Parallel academia enhances quality and diversity of ideas
- The first industrial PhDs program in Greece
- University spin-off legislation passed
- Youth entrepreneurship and innovation initiatives
- STEAM education centers

**EMERGING
ISSUE 7:
Pervasiveness of
new technologies
affects society**

- Rapid technological change
- Deep Tech
- AI in research, creativity, innovation
- Malicious applications supported by AI
- Neo-Luddites
- Growing lack of social trust to science
- Everything connected
- Hyperconnected devices and people
- Surveillance policies and technologies
- Increased importance of defense technology
- Safe and inclusive online presence

**EMERGING
ISSUE 8:
Digital platforms,
including the
Metaverse, to foster
economic activity**

- Metaverse rising
- The rise of digital scarcity
- Creator economy
- User monetization
- Livestreaming is here to stay

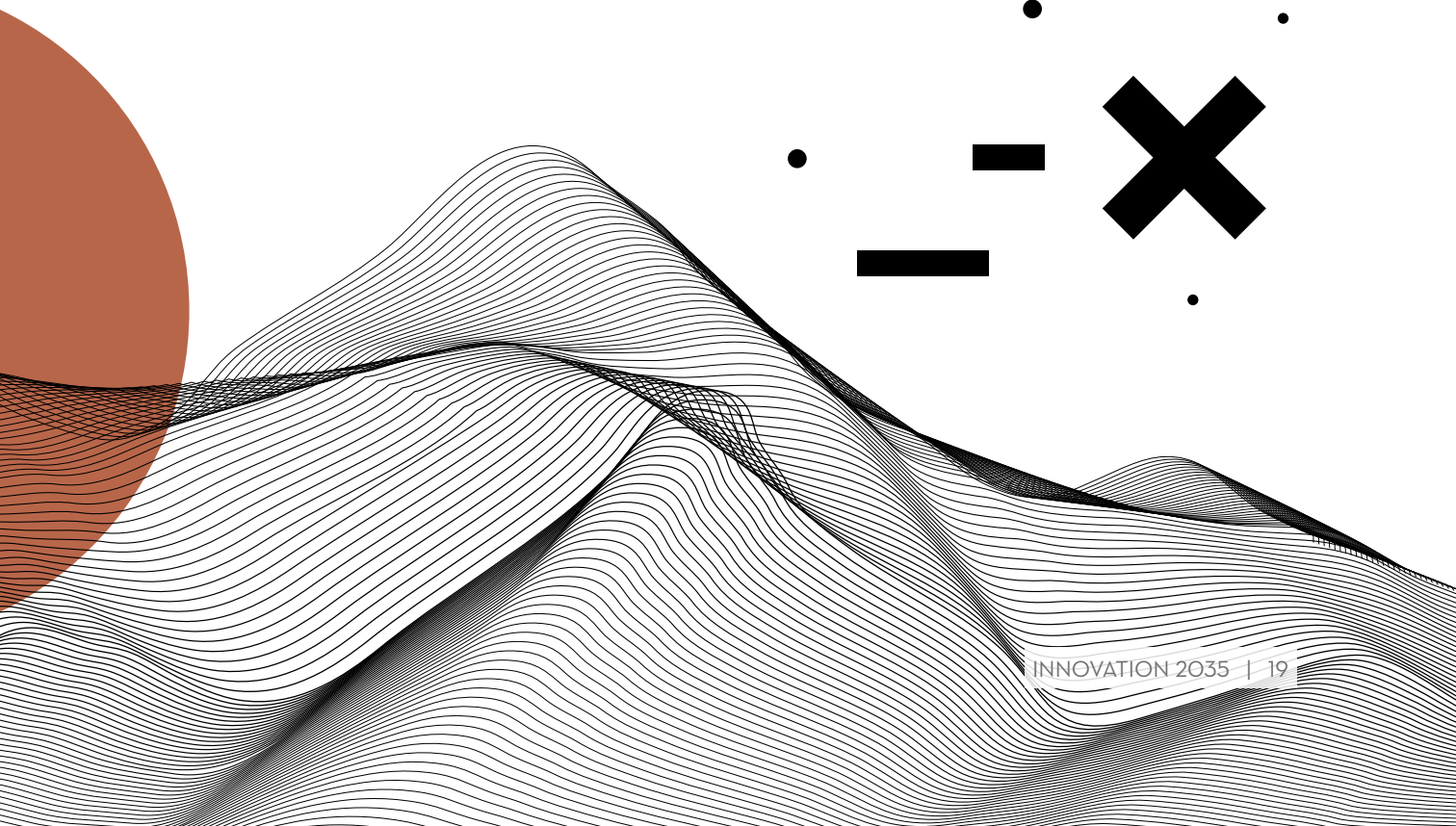


**EMERGING
ISSUE 9:
Increased utilization
of Open knowledge**

- Open innovation
- Open data
- Open knowledge
- Frugal innovation
- Do it Yourself movement
- Maker-Spaces
- Open societies
- Sharing economies

**EMERGING
ISSUE 10:
A start-up
funding bubble**

- Climate change
- Resource scarcity
- Energy cost for consumers ready to decrease
- Sustainability
- Circular Economy legislation and movements
- Biomimetics
- Impact investments
- Self-sufficient rural communities
- Novel diets
- Energy insecurity
- Locally sourced materials



THE DELPHI PROCESS

To further enrich this study, the scenario development process was complemented with a parallel Delphi process. The Delphi method is a structured communication technique that relies on a panel of experts to provide collective judgments on a set of items concerning a topic of interest. The experts are invited to respond anonymously to a survey consisting of those items in a series of rounds, while a facilitator combines and aggregates the individual responses and provides the experts with a statistical summary of the panel's responses after each round. In each new round, experts are able to submit a new response, either revised or the same as before, after considering the panel's responses in the previous round. The process continues in repeating rounds until the panel reaches agreement or disagreement.

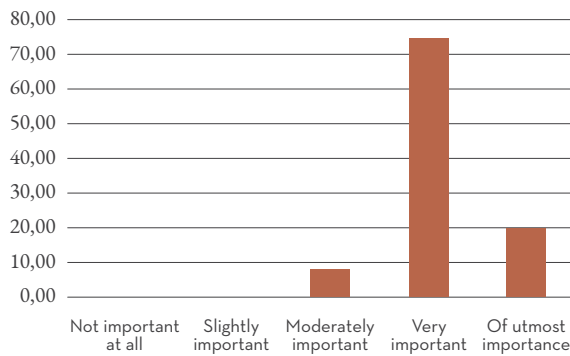
In this study, each emerging issue was used as a foundation for the formulation of provocative statements regarding the potential futures of the Greek innovation ecosystem. The 10 statements were then judged by a large panel of experts ($n = 149$) that were invited to participate in a two-round online Delphi survey that was designed following the principles of anonymity, iteration, controlled feedback, and statistical aggregation of responses. The results of the final round of the Delphi survey are presented below.



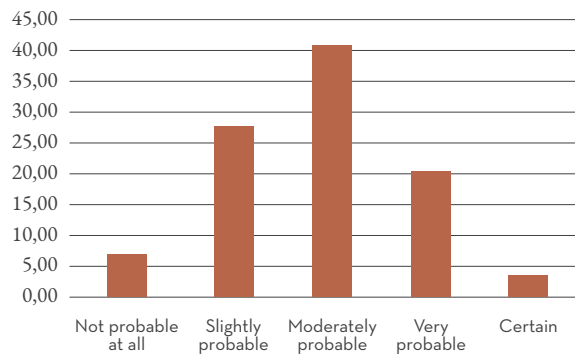
STATEMENT
01

Greece becomes a prestigious hotspot with a global outlook in the European regional innovation ecosystem.

S1: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



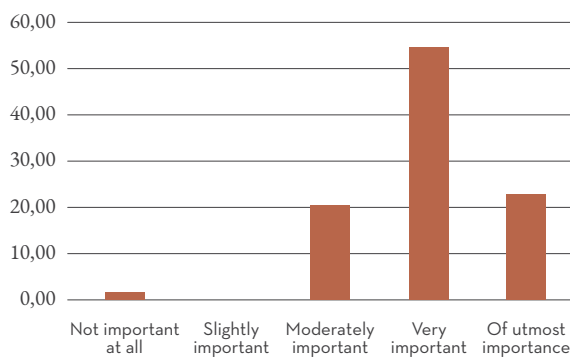
S1: Perceived probability for this phenomenon to actually occur by 2035



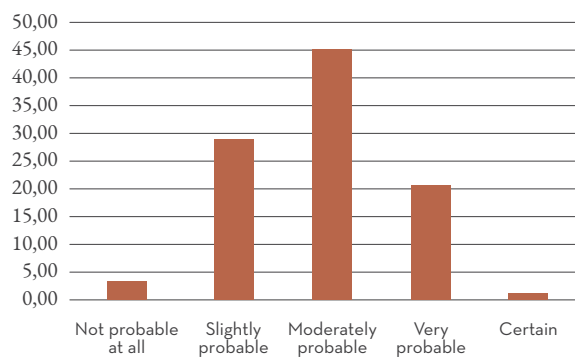
STATEMENT
02

Brain Drain becomes balanced out by the integration of immigrants and foreign professionals, and the return of Greeks from abroad.

S2: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



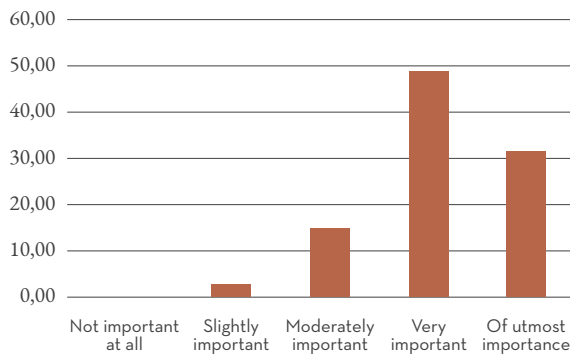
S2: Perceived probability for this phenomenon to actually occur by 2035



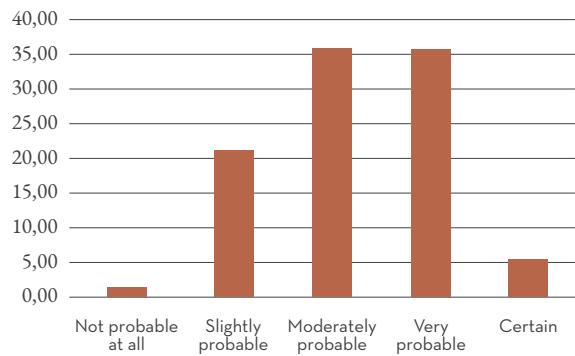
STATEMENT
03

A new ethos towards Nature accelerates the adoption of sustainable practices across society and the business sector.

S3: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



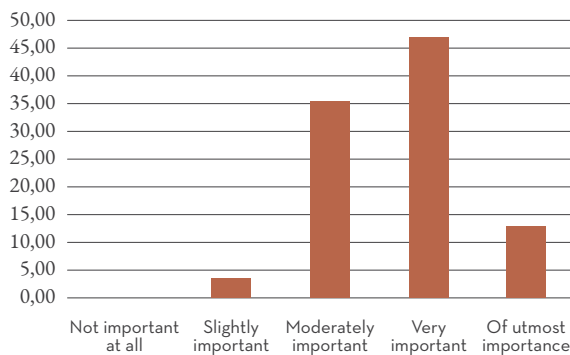
S3: Perceived probability for this phenomenon to actually occur by 2035



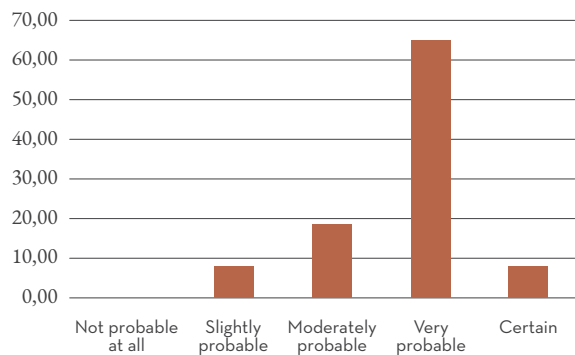
STATEMENT
04

An aging population becomes the new normal and sets the demand for an economy targeted to older adults.

S4: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



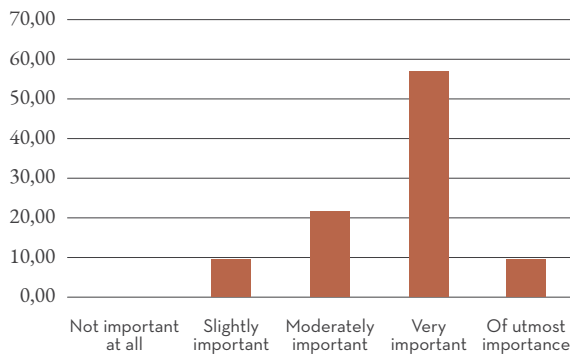
S4: Perceived probability for this phenomenon to actually occur by 2035



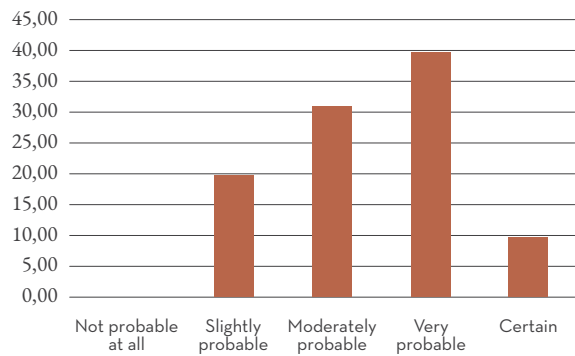
STATEMENT
05

Increased work flexibility mitigates polarization in labor market and employee burnout.

S5: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



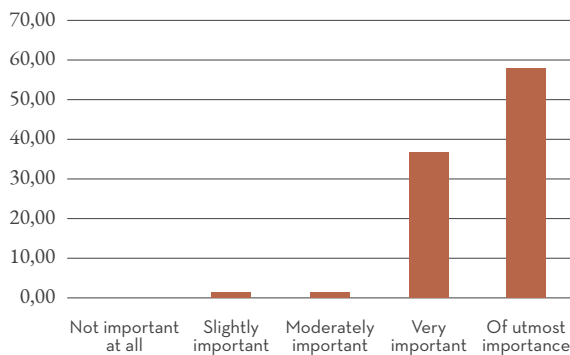
S5: Perceived probability for this phenomenon to actually occur by 2035



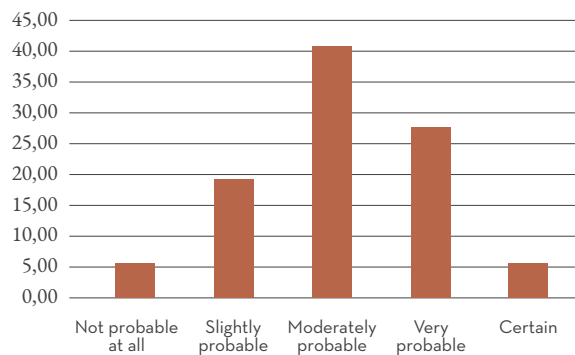
STATEMENT
06

Education becomes more diversified and more conducive to creativity, innovation, and entrepreneurship.

S6: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



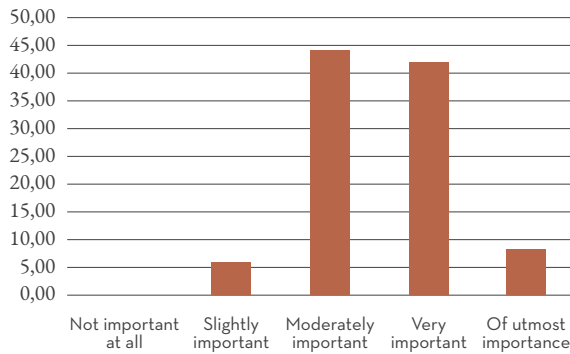
S6: Perceived probability for this phenomenon to actually occur by 2035



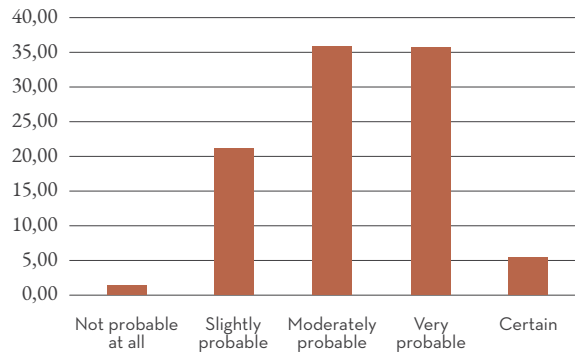
STATEMENT
07

The transversal integration of new technologies polarizes society and ignites opposition.

S7: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



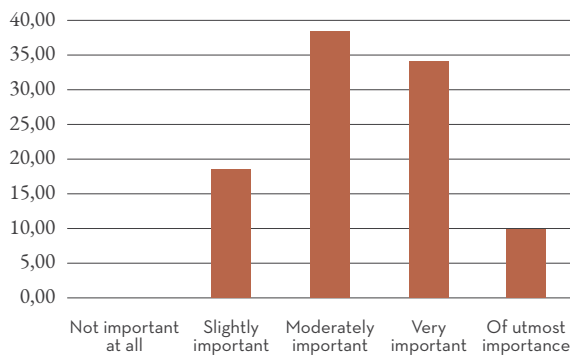
S7: Perceived probability for this phenomenon to actually occur by 2035



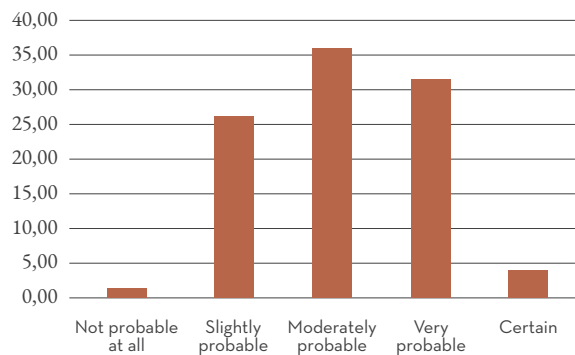
STATEMENT
08

The uptake of Metaverse platforms facilitates new economic paradigms, including the establishment of the Creator Economy.

S8: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



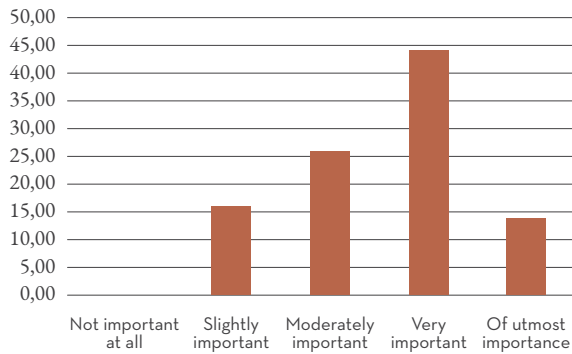
S8: Perceived probability for this phenomenon to actually occur by 2035



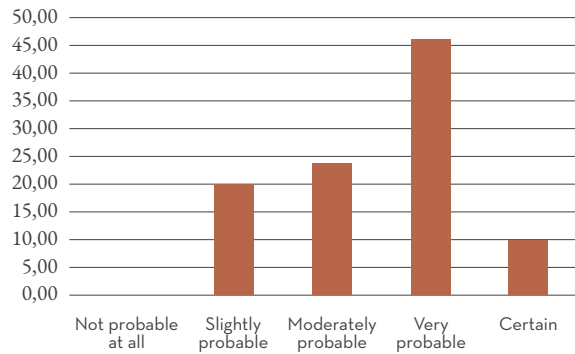
STATEMENT
09

Open knowledge fosters the growth of the Do-It-Yourself movement.

S9: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



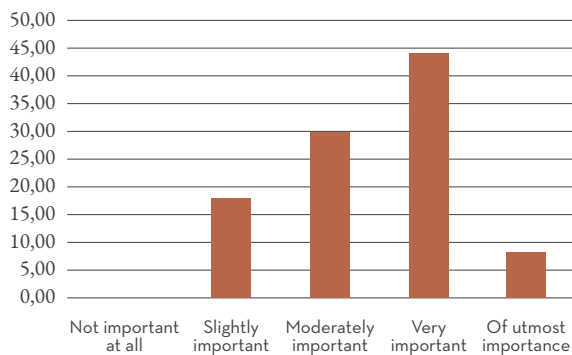
S9: Perceived probability for this phenomenon to actually occur by 2035



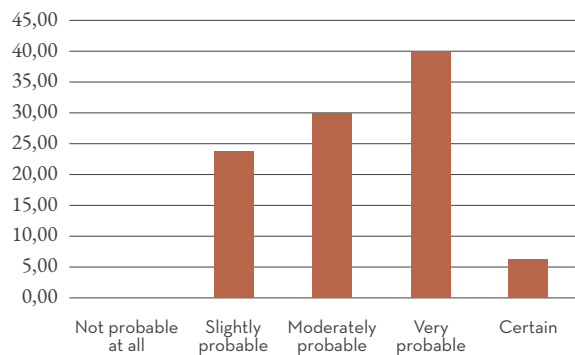
STATEMENT
10

The increased number of start-up funding opportunities fuels a bubble.

S10: Perceived impact of this phenomenon on the Greek Innovation landscape by 2035



S10: Perceived probability for this phenomenon to actually occur by 2035



04. TRENDS, WEAK SIGNALS, UNCERTAINTIES, AND POLARITIES

Following the participatory scenario development workshop that validated the pertinence of the 10 emerging issues that had been identified during the previous phases of the overall process, a sense-making exercise was conducted to evaluate the perceived certainty and impact of their occurrence. According to these two factors, the 10 emerging issues were categorized as trends, weak signals, and uncertainties, as depicted on the following figure.



TREND:

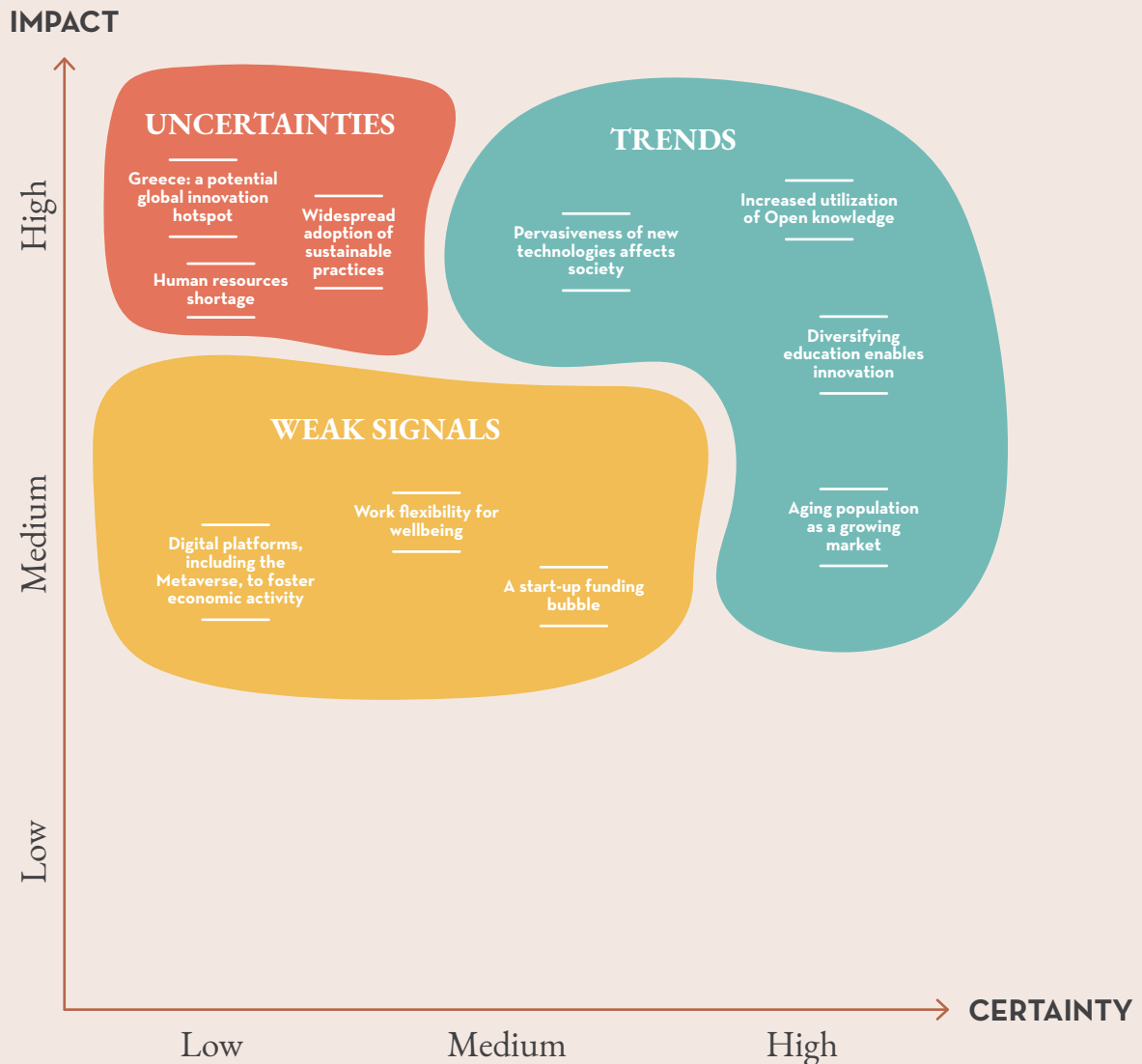
a perceived trajectory of an important phenomenon moving in a clearly identifiable general direction, either stable or increasing/decreasing in strength or frequency.

UNCERTAINTY:

a perceived established force of change regarding an important phenomenon whose general direction, i.e. strength or frequency, is not clearly identifiable.

WEAK SIGNAL:

a perceived rudimentary force of change regarding a phenomenon whose importance and general direction, i.e. strength or frequency, are not clearly identifiable.



The two most critical uncertainties were selected amongst the ones that were identified above, taking into consideration the following merits: their strategic impact, their independence from each other, their potential to plausibly evolve into diametrically opposed extreme states (polarities), and their capacity to generate—in combination—interesting scenarios that are structurally different.

The 2x2 combination of the polarities of the two most critical uncertainties defined the axes that formed the outline of the four scenarios. These critical uncertainties, the axes they defined, and their polarities are described below.

“Widespread adoption of sustainable practices”



Weak Sustainability

From a weak sustainability perspective, there are no differences between the kinds of well-being generated by natural capital and by manufactured capital. In particular, environmental degradation is perceived as a problem that can be addressed by means of technological innovation or monetary compensation. Consequently, sustainability in this sense refers to the management of the totality of natural and manufactured capital in a way that it is conserved or increased for its utilization by future generations. Thus, despite the level of environmental degradation, human-made systems are assumed to be capable of maintaining the well-being of future generations, as long as manufactured capital is increased accordingly.

Strong Sustainability

From a strong sustainability perspective, there are fundamental qualitative differences between the kinds of well-being generated by natural capital and by manufactured capital. In particular, environmental degradation is perceived as irreversible because of its irreproducibility and the degree of uncertainty surrounding our understanding of the functioning of natural systems. Consequently, sustainability in this sense refers to the preservation of irreplaceable natural capital for future generations. Thus, natural systems are assumed to be contributing in a fundamentally unique, multidimensional, and critical manner to the well-being of future generations, including the provision of the necessary resources to produce the desired manufactured capital.



“Greece: a potential global innovation hotspot”



Closed Economy

No economy is perfectly closed. A comparatively closed economy is a type of economy that does not maintain extensive business or trading relations with the international market. In this sense, the movements of goods and services, intellectual property, financial capital, and foreign exchange across its borders are only scarcely conducted, mainly via relations with a few other countries that might coalesce into an integrated economic bloc. Therefore, comparatively closed economies essentially operate in a self-contained and self-reliant manner. Such comparatively closed economies are usually associated with authoritarian governments that use various policy tools, e.g., tariffs, to influence the extent of their countries' non-domestic transactions in their most general sense.

Open Economy

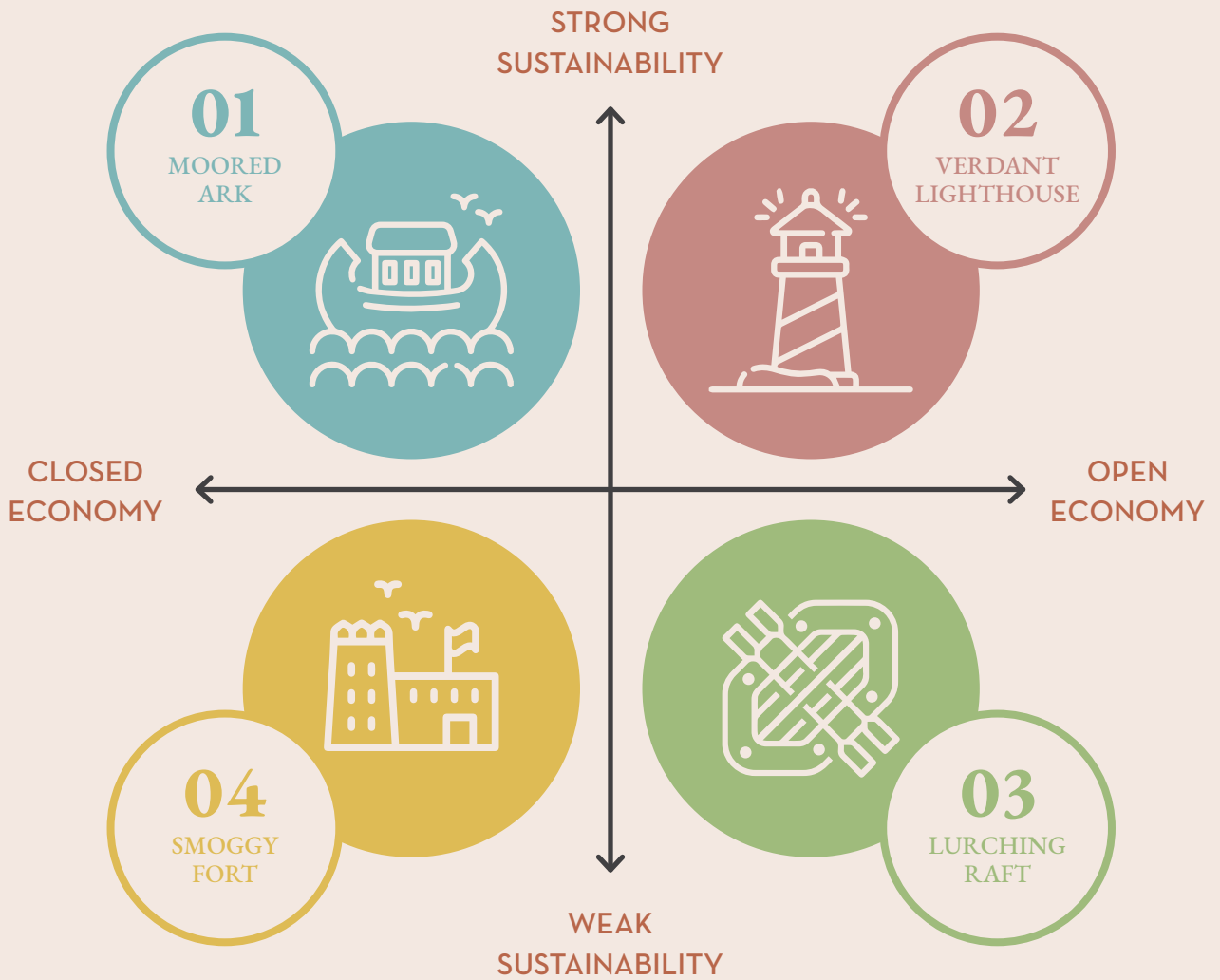
No economy is perfectly open. A mostly open economy is a type of economy that maintains extensive business and trading relations with the international market. In this sense, the movements of goods and services, intellectual property, financial capital, and foreign exchange across its borders are conducted freely and widely, with the exception of services whose nature precludes exchange, e.g., railway services. Therefore, mostly open economies essentially operate in connection and constant interaction with economies of other countries and continents. Such mostly open economies are directly correlated with the more general concept of globalization, a process that interconnects people and organizations around the globe enabling their interchange.

05. SCENARIOS

Scenarios are descriptions offering glimpses to multiple alternative plausible futures, sometimes even uncomfortable ones. Their goal is neither to provide a forecast, nor to provide a vision: rather, they are a tool to challenge constrained mindsets of thinking about the future, helping decision makers widen their perspective towards what might take place in the future, which in turn can enhance their ability to prepare and plan for the future. In other words, scenarios are not predictions; they are learning tools that provoke new ways of thinking.

Based on the polarities of the critical uncertainties described in the previous section, four different scenarios for the future of the Greek innovation landscape of 2035 have been composed. The scenario development process generated four alternative states of 19 parameters depicted in the following table, one for each scenario. These 19 parameters can be grouped into the following overarching domains: Society & Culture, Technology & Infrastructure, Economy, Natural Environment, and Politics & Law.





SCENARIO 01: **Moored Ark** SCENARIO 02: **Verdant Lighthouse** SCENARIO 03: **Lurching Raft** SCENARIO 04: **Smoggy Fort**

SOCIETY & CULTURE	Population shift	Counterurbanization	Periphery	Gentrification	Centre
	Social inclusion	Marginalization	Inclusion	“Tolerance education”	Manipulation
	Human resources	Specific sets of skills promulgated by the state	Enriched by attracting from abroad	Reskilling & upskilling, following the global market	Elite academic sponsorships for studying abroad
	Art	Private collections	Participatory art	Entertainment & digital arts	Traditional arts & crafts

TECHNOLOGY & INFRASTRUCTURE	R&D landscape	State-controlled, end-to-end	Public funding & private investments	Imported & adopted by local companies	State-controlled, limited access to relevant careers
	Major investments in technology	Major investments in technology	Aimed at sustainability, resilience, openness & inclusivity	Aimed at movement of goods and data, and mental diversion	Aimed at political and military autonomy, manipulation of public opinion, and technological supremacy of the elites
	Technology in society	Technology in society	Mitigating socioeconomic inequalities	Aimed at movement of goods and data, and mental diversion	Means of control vs. grassroots reactions

ECONOMY [1/2]	Market form	State owns utility companies, intervenes in the market	Public-private partnerships own utility companies; free market	Private Equity Firms own large mature companies	Oligarchs have acquired large mature companies, including utilities; oligopoly
	Workforce	State nurtures workforce and allocates jobs	Encouraged towards openness; innovation parks	Company towns	Elites lead acquired companies; working class assumes labour-intensive jobs
	Major economic sectors	Eco-tourism, green technologies	Alternative tourism, circular economy, renewable energy sources	Global value chains: logistics, data brokerage, entertainment industry “sweatshops”	“Tourism to formerly-protected natural and cultural heritage sites”

SCENARIO 01:

Moored Ark

SCENARIO 02:

Verdant Lighthouse

SCENARIO 03:

Lurching Raft

SCENARIO 04:

Smoggy Fort

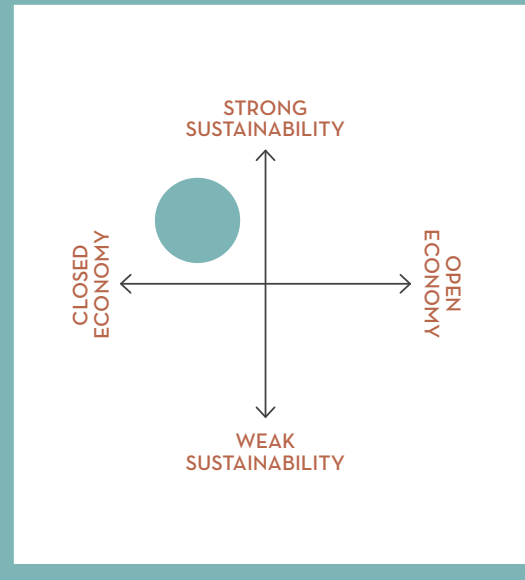
		SCENARIO 01: Moored Ark	SCENARIO 02: Verdant Lighthouse	SCENARIO 03: Lurching Raft	SCENARIO 04: Smoggy Fort
ECONOMY [2/2]	Consumption	Vision of sustainability justifies cap on basic commodities	Self-modulated by an ethical cap	Barter economy maintains the peripheral communities	Public distribution shops sustain workers
	NATURAL ENVIRONMENT				
	Ecosystems	Assets: monetized via eco-tourism	Intrinsically valuable; citizens live close to nature	Degraded and exploited to serve the global market	Selected sites conserved as assets: monetized via tourism
	Agricultural land	Restricted seedbanks for the long-term	Regenerative agriculture	Degraded and disaster-strained land	Most high-yield land acquired by the oligarchs
	Resources & Waste	Circular Economy and local sourcing	Ethically-produced products and commons-based economy	Waste imported from other countries	Opportunistic disposal of waste outside the country's borders
	Energy	Self-sufficiency: renewable energy sources and nuclear power	100% Renewable energy	Energy poverty	Strict pollution reduction, enabling selling excessive carbon emission allowances
POLITICS & LAW	System of Government	Totalitarian	Democratic	Democratic, collapsing	Government of oligarchs
	International Relations	Trojan horse: disseminating the country's green perspective	Free movement of goods, capital, services, and people	Uneven: attracting allies via cheap labour	Bilateral agreements mainly for military and economic goals
	Environmental regulation	Strict	Strict: rights of nature	Lenient	Lenient for the elites, strict for the rest
	Corporate regulation	Strict: entrepreneurship shaped by the state	Agile and enabling innovation, entrepreneurship, and flexible working	Agile and enabling innovation, entrepreneurship, and company towns	Strict: steered entrepreneurship limited to the elites

01

The Moored Ark is an enclosed world.

In 2035, following the Global Food Crisis of the 30s that was caused by a persistent invasive plant pathogen that destroyed a high percentage of crop yields worldwide, some countries declared a state of emergency enacting a recovery scheme and planning for the long-term self-sufficiency of their food system. Greece is ruled by a totalitarian system of government, while international relations are weaponized as a trojan horse to disseminate the country's green perspective to other countries via the limited flow of eco-tourism. Eco-tourism with a cap on visitor numbers, as the country's major economic sector, is promoted as a means to sustainably attract foreign capital to the country, in order to prevent economic marginalization, along with efforts to encourage investments to the country's green technologies' industry. In alignment with the country's main economic orientation, the natural environment is mainly considered an asset to be monetized by means of eco-tourism. Therefore, strict environmental regulation is in place to ensure the conservation of its value for its economic utilization.

To support its flagship economic sector, the government maintains an extensive counterurbanization plan, whereby a portion of the population is tasked with maintaining the eco-tourism destinations, since allocation of jobs and recruitment is conducted according to a very specific set of skills. In particular, the workforce are nurtured to work in sectors suited to the country's goals of resource and energy self-sufficiency and provi-



dent planning, while inward and outward immigration is prevented. This constricting attitude of the government towards the population has gradually led to social marginalization and exclusion, which is also reflected in the practice of restricting access to art by means of private collections.

Likewise, in line with the country's vision for a sustainable future, restricted seedbanks are used to preserve indigenous grains for the long-term, while per capita consumption of basic commodities is capped by law, and a fully integrated Circular Economy is essentially enforced by the government, with any new resources being locally sourced. The implementation of the aforementioned restrictions makes use of technological systems that play a key role in the most effective allocation of jobs, in the digitalization of governance, and in the surveillance of the population to ensure the law is upheld.

The key objective of the country's energy self-sufficiency is achieved by a mix of renewable energy sources and nuclear power. Because of their critical nature, not only energy supply but essentially all utility companies



are owned by the state, while the state also intervenes in the market to correct market failures. Although a market does exist, it is not totally free: strict regulations are in place to mandate that workers fit for the role of the entrepreneur operate in specific fields related to the country's needs. In the same vein, R&D activities are planned, directed, and controlled by the state. Unsurprisingly, the major investments in technology are shaped by the state and are focused on achieving political and military autonomy and self-efficiency, by augmenting the deployment of defense technologies, green technologies (including nuclear power), and food and agricultural technologies, among others.

Accordingly, the startups that emerge in this world are shaped by the state and operate almost exclusively in the fields of eco-tourism, green energy, food and agri-

culture, and other sustainability-related market segments, as well as in defense. The knowledge-intensive aspect of these fields necessitates a tight relationship between startups and the technology transfer offices of the country's universities and research centers which are growing steadily. The high R&D costs of these endeavors are counterbalanced by the orchestrated efforts of international angel investors, operating mainly in the fields of eco-tourism and food and agriculture, and of a handful of Venture Capital funds supported by the national Sovereign Fund-of-Funds.

In this enclosed world, the most lucrative investment opportunities for VCs are to be found in the sectors of sustainability, particularly energy supply and circular economy, and food and agriculture.



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FOO3D: "FOO3D just raised 500K as part of its successful Pre-Series A round closure. Foo3D is pioneering the field of lab-grown meat, including chicken, beef, fish, shrimp, lobster and other seafood, as well as game meat, by producing affordable products that are sold in all major supermarkets, while the startup seems to have its eyes set on providing Mars settlements with sustainable, nutritious, and tasty food".

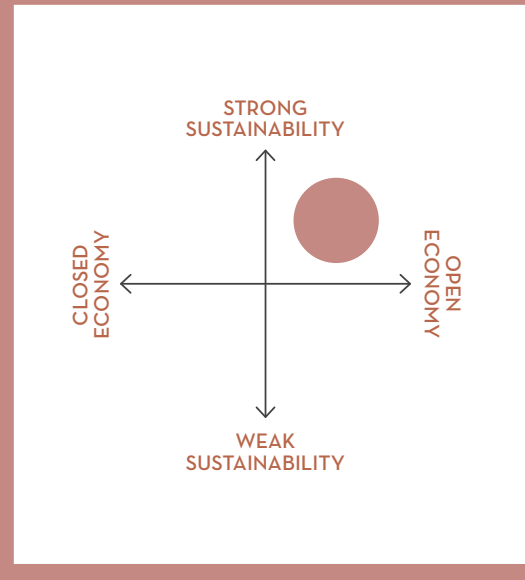
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02

The Verdant Lighthouse is a liberated world.

In 2035, following the devastating wildfires of Central and Southern Europe that were accentuated by the persistent, climate-change-induced, severe heat and drought of the 30s, several countries committed to undertake stewardship of nature by taking strict regulatory actions. Greece is ruled by a democratic system of government legitimizing civil rights and the rights of nature. International relations are fully employed to enable the free movement of goods, capital, services, and people, while the country's prosperous living conditions are utilized as leverage. The government's emphasis on the periphery has contributed greatly to the country's internationally-coveted high quality of life, which is enabled by the legitimized encouragement of the workforce to work remotely and to adopt an open mindset to cultivate their creativity and their capacity to innovate. To this end, innovation parks constitute an integrative solution and function as beacons to attract human resources from abroad.

In alignment with the country's strong ecocentric orientation of regional development that enables citizens to live in communities close to nature where they enjoy its much-desired benefits, the natural environment is considered intrinsically valuable and efforts are made to restore and protect it. Therefore, strict regulation is in place to protect the rights of nature, following the country's solid practice of legitimizing and protecting human rights—both individual and collective—to promulgate social inclusion. To achieve social inclusion, technological systems are utilized in mitigating socioeconomic inequalities, offering equitable access to energy, education, the global community, etc. The coun-



try's attitude of intertwining the welfare of humans and ecosystems is also reflected in the substantive public support towards forms of eco-art and other forms of participatory art that promote well-being.

Striving to balance human prosperity and ecological flourishing, citizens practice regenerative agriculture to restore degraded land and make every effort in general to supply the country's local markets with ethically-produced products; these endeavors are facilitated by a commons-based economy. To further support this intensive undertaking of net positive environmental impact, consumer behavior is self-modulated by means of a personal ethical consumption cap.

Following the country's overall vision, the major economic sectors that dominate the public-funding and investment landscape are alternative tourism, sustainable construction, circular economy, and renewable energy sources that comprise the totality of the country's energy mix. The agile regulations that enable innovation, entrepreneurship, and flexible working allow for the operation of private companies in a free market, while public-private partnerships are formed to ensure the long-term provision of utilities. In this vein of collaboration between the public and private sectors, R&D activities are cultivated by the state and supported via public funding, both national and international, as well



as via private investments. Consistently, investments in technology are relatively diverse in this world, but, in their majority, are focused on sustainability, resilience, openness, and inclusivity, by augmenting the deployment of renewable energy technologies, environmental remediation technologies, disaster risk reduction technologies, open-source technologies (software and hardware), and accessibility and assistive technologies, among others.

Accordingly, the startups that emerge in this world are actively supported by both public and private institutions. They involve international human resources, and operate in a diversity of fields, including industry 5.0, clean technologies, technologies for transparency and open government, and mission-oriented innovation. The knowledge-intensive aspect of these fields necessitates a tight relationship with technology transfer offices that exist as independent legal entities representing

one or more of the country's universities and research centers, allowing for the creation of a robust, open-innovation-oriented technology transfer ecosystem that is also connected to its European- and US-based counterparts. The high R&D costs of these endeavors are counterbalanced by the orchestrated efforts of networks of national and international angel investors—originating from the startup community itself—who provide access to seed capital, as well as by the country's flourishing next generation innovation parks, and by synergies of multiple sector-specific Venture Capital funds—both local and international ones—that join their efforts to advance the common priorities and perspectives of their countries of operation.

In this liberated world, the most lucrative investment opportunities for VCs are to be found in the sectors of sustainability, particularly energy supply and circular economy, and biotechnology.



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BLEach: "BLEach is reinventing the way we clean contaminated soils from industrial pollution. Drawing on the wisdom of Nature, BLEach deploys genetically modified microorganisms to consume toxic and radioactive contaminants. After demonstrating the pilot operation of its patented process with a major industrial client, the startup managed to raise 400K as part of its successful Pre-Series A round closure".



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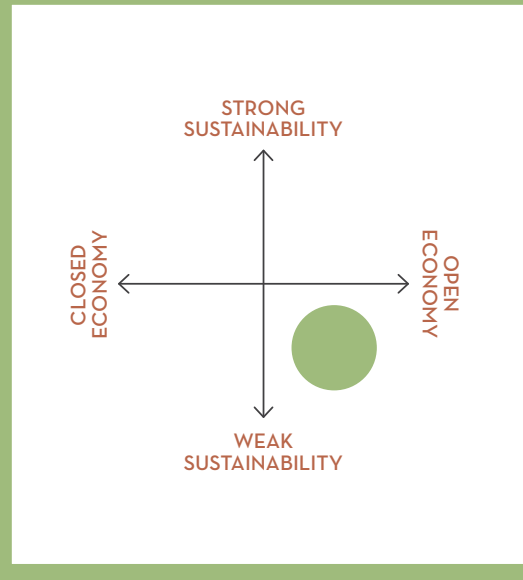
03

The Lurching Raft is a colonized world.

In 2035, following the world's Greatest Recession that was sparked by the recurrent pandemic waves of the 30s, several countries necessitated the operationalization of populism to appease their citizens by normalizing fake news and promulgating narratives of growth. Greece is ruled by a collapsing democratic system of governance with uneven international relations, striving to attract allies by using cheap labor as leverage. The unequal reskilling and upskilling of workers according to the needs of the global market combined with political favoritism feed social turmoil, while "tolerance education" is used as a means to preserve global market interchange. The abrupt implementation of unexpected and sophisticated technological changes further polarizes society by accentuating socioeconomic inequalities, such as inequitable access to energy, education, resources etc.

Large mature companies have been acquired by foreign Private Equity firms, while other large companies have been integrated in certain global value chains—mainly logistics, data brokerage, and entertainment industry sweatshops. Capitalizing on foreign investments in the latter, the entertainment industry and the digital arts find a parallel use as means to instill societal lethargy.

To support its economic growth strategy, the country maintains an extensive gentrification plan coupled with a lenient environmental regulation. The natural environment is thus degraded; natural resources are ex-



ploited, serving the needs of the global value chains in which the country is integrated, e.g., the construction industry. Excessive air pollution blankets the major urban areas and company towns which are densely packed by the workforce, while low air quality is the norm for the rest of the country as well, because of energy poverty. On top of the country's already overwhelmed waste management systems, waste is also imported from other countries as an additional means of attracting foreign capital. People living in the communities outside the major urban areas and company towns suffer from the effects of extensive environmental degradation and the impacts of natural disasters. Trying to live off their strained agricultural land, these communities adopt barter economy as their main trading system.

In an effort to boost economic growth, agile regulations are passed to enable innovation and entrepreneurship initiatives, as well as the creation of company towns, which are entirely owned by large companies and aim at their eventual independence from the ruling state. The outputs of R&D activities conducted abroad are imported and adopted by local companies. The investments in technology in this world occur almost exclusively in the "late majority" and "laggards" phases of



the relevant adoption curves, and, in their majority, are focused on the movement of goods and data, as well as on mental diversion, by augmenting the deployment of advanced logistics and supply network operations technologies, digital workplace technologies, digital entertainment technologies, and extended reality technologies, among others.

Accordingly, the startups that emerge in this world are in their most part not funded by the state but are supported by private capital, including philanthropic institutions, mainly international ones, and operate in a few niche fields related to the major investments of multinational companies within the country's borders, mainly in the fields of extended reality and entertainment. The global outlook of these fields brings the technology transfer offices of the country's universities

and research centers closer to large multinational corporations and conglomerates, while the high growth potential of these endeavors attracts a large number of interested international angel investors who coordinate their seed funding efforts to further consolidate and nurture the specialized startup ecosystems. Venture Capital funds resort to further specialization and adoption of higher risk appetite as a guerilla strategy to get a piece of the investment pie, by supporting the creation and scaling of competitive startup companies staffed by former employees of the large mature companies owned by foreign Private Equity firms.

In this colonized world, the most lucrative investment opportunities for VCs are to be found in the sectors of pharmaceuticals, health technology, circular economy, extended reality, and blockchain technology.



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Mon-Mom - Monumental Moments: "Mon-Mom - Monumental Moments, the country's rising organizer of luxurious events for high-profile clients, was recently entrusted with the commemoration of the 26th birthday of Her Majesty the Queen of the Principate of Islandia, the world's most powerful seasteading nation. The undisputed success of this celebration on the Acropolis of Athens led to the startup raising 800K as part of its successful Pre-Series A round closure".

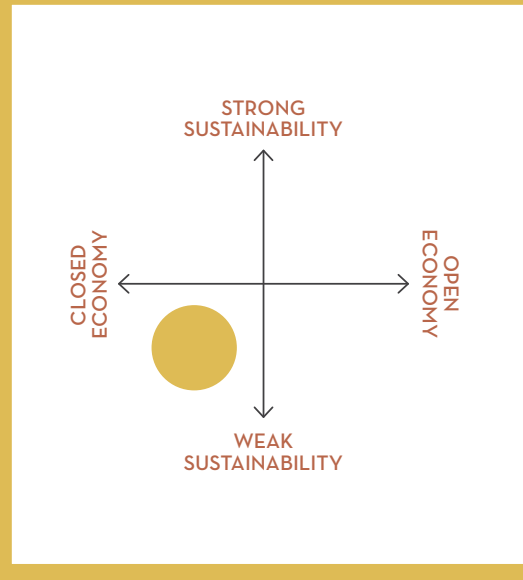
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04

The Smoggy Fort is a two-tiered world.

In 2035, following the repercussions of the ongoing Energy Crisis of the 30s that was caused by shifting geopolitical alliances between the East and West over access to fossil fuels, in some countries prominent and opulent citizens entered the political stage, seen by voters as the last resort in forming governments that can guarantee stability. Greece is ruled by a government of oligarchs steering the state, while international relations consist of a handful of bilateral agreements with other countries mainly for military and economic goals. Large mature companies that have been acquired by the oligarchs, including all utility companies, comprise the country's major economic powerhouses. In alignment with the country's main economic growth strategy, selected natural sites are conserved as an asset to be monetized by means of "tourism to formerly-protected areas", while other sites are unevenly degraded. In this context, a lenient environmental regulation is in force for the elites, while a strict one exists for the rest of the population.

To divide and rule, the country's government maintains a strong emphasis on the center. A two-tiered education and training system allows a very small number of elite students, sponsored by the state, to study abroad under the condition that they will return to the country, while the poverty-stricken population are nudged towards the primary sector and labor-intensive jobs. In particular, the majority of the working class are manipulated to staff the acquired companies, or work in the primary sector and other labor-intensive jobs, while the small number of elite professionals who studied abroad are repatriated to assume leadership roles under the government's oversight. All the while, incentives for population growth are provided to maintain the country's dominant force of labor. The government



manipulates the population by steering public opinion, spreading propaganda, and imposing state control on education. Certain forms of traditional arts and crafts are supported, while privatized cultural assets, including archaeological sites, are exploited to attract foreign capital to the country.

Likewise, most high-yield agricultural land has been acquired by the oligarchs. There is control over the production of major food commodities, which are sold via the country's public distribution shops, along with a host of other commodities provided to the majority of workers with discounts as a wage supplement by their oligarch-acquired corporations. A strict command-and-control regulation enforces pollution reduction on the sub-national level, enabling the state to sell excessive carbon emission allowances to other countries and attract foreign capital. The implementation of the aforementioned restrictions makes use of technological systems used by the ruling class as a means of control. The working class attempt to react by forming clandestine grassroots groups to build peer-to-peer knowledge on technological decentralization, cryptography, and dark transactions. In reaction to the aforementioned extensive commodification of natural and cultural heritage that dominated early efforts to attract foreign capital to the country, the working class unite under the common vision of restoring the national image of Greece to its "former glory" through hard work.



The state opportunistically disposes of some wastestreams to territories outside the country's borders in a coordinated manner, which demands some replenishment with new raw resources. Companies acquired by the oligarchs comprise the country's oligopolistic market. This is perpetuated by the force of regulations that steer and control entrepreneurship—conducted by the elites—, while obstructing unwanted initiatives by the rest of the population. In the same vein, R&D activities are planned, directed, and controlled by the state: access to R&D careers is limited only to the elites that have studied abroad and have been repatriated. Unsurprisingly, the major investments in technology in this world are shaped by the state and are mainly focused on manipulating public opinion, and on maintaining the technological supremacy of the ruling class; that is, by augmenting the deployment of defense technologies, AI technologies, Big Data-related technologies, and appropriate technology, among others.

Accordingly, the startups that emerge in this world—

essentially corporate manifestations of its nepotism—are controlled by the oligarchs through the country's elites and operate mainly in the fields of defense and security, including cybersecurity, energy security, and generic drugs. Technology transfer offices are non-existent, since knowledge is not cultivated within the country's borders; rather, informal unidirectional technology transfer from abroad towards the country is achieved to some extent by means of the repatriated elites who received state sponsorship to study abroad. Similarly, angel investments reflect the country's spirit of nepotism, as the sole access to seed capital is the elites' family wealth. On a similar note, Venture Capital funds follow a biased and opaque investment mechanism drawing on public funds and dirty money laundering.

In this two-tiered world, the most lucrative investment opportunities for VCs are to be found in the sectors of defense and security, event and destination management, extended reality, media, public relations, and blockchain technology.



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V-Zoo: "Nobody was really flabbergasted when word came out that V-Zoo successfully raised 600K as part of its successful Pre-Series A round closure. The deeptech startup is blazing a new trail of citizen-funded virtual conservation, combining high fidelity graphics with digital scarcity. The company has already created collectible virtual copies of thousands of animal species, aiming for a million by the end of the year".

1.4k 800



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“

There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know. But there are also unknown unknowns—the ones we don't know we don't know. And if one looks throughout the history of our country and other free countries, it is the latter category that tends to be the difficult ones.

DONALD RUMSFELD
United States Secretary of Defense, 2002





HELLENIC REPUBLIC
Presidency of the Government
Special Secretariat of Foresight

