



Hélice

VOLUME 9 ISSUE 2 JUNE 2020

 www.facebook.com/TripleHelixAssociation

 twitter.com/TripleHelixA

 www.linkedin.com/groups/4545066



Innovation To the Future

2020 Triple Helix International Conference
Future of innovation and innovation for future!
15-17 June 2020
FIRST VIRTUAL CONFERENCE
<https://events.tuni.fi/thc2020/>

Free to members of the Triple Helix Association
Please contact Maria Laura Fornaci to join
mlaura.fornaci@triplehelixassociation.org

Editorial Board

Editor in Chief **Liana Kobzeva** 05.liana@gmail.com
Managing Editor **Sheila Forbes** sheila.forbes@strath.ac.uk
Book Review Editor **Branca Terra** brancaterra@gmail.com

Board Members

Mariza Almeida almeida.mariza@globo.com
Michele Coletti coletti@startup.it
Tatiana Pospelova pospelova@mail.ru
Loet Leydesdorff loet@leydesdorff.net
Alexander Uvarov AUvarov2015@gmail.com

Board Members**(Ex-Officio)**

Henry Etzkowitz henry.etzkowitz@triplehelixassociation.org
Maria Laura Fornaci mlaura.fornaci@triplehelixassociation.org

Headquarters

Triple Helix Secretariat
Triple Helix Association
Via della Lungara, 10
00165 Rome
Italy

Contact

Maria Laura Fornaci
 THA Executive Director

Email

info@triplehelixassociation.org

Website

www.triplehelixassociation.org

CONTENTS - volume 9, Issue 2, June 2020

WELCOME TO 18TH INTERNATIONAL TRIPLE HELIX VIRTUAL CONFERENCE	4		
<i>15-17 June 2020, Sponsored by Tampere University and THA</i>		BOOK REVIEW	29
TRIPLE HELIX SUMMIT	8	YOUNG PROFESSIONAL	34
Call for Submissions		CHAPTER NEWS	37
<i>24-26 November 2020, Bologna, Italy</i>		NEW MEMBERS	37
RESEARCH: CONTRIBUTE TO A STUDY ON TRIPLE HELIX INNOVATION TO ADDRESS THE COVID PANDEMIC	9	NEWS	42
PRESIDENT'S CORNER	10	CALL FOR PAPERS	43
Triple Helix in the Coronavirus Era			
<i>Henry Etzkowitz</i>			
UNDERSTANDING THE TRIPLE HELIX ROLE IN RESPONSE TO COVID-19: A COMPARATIVE ANALYSIS	13		
<i>Claudia Olvera</i>			
COVID-19 RESPONSE OF INDUSTRIAL COMPLEXES IN SOUTH KOREA	17		
<i>Chang-Bae Yoon</i>			
SOCIAL DISTANCING AS A REACTIONARY APPROACH TO COVID-19 PANDEMIC: THE COMMENT	18		
<i>Ayobami Popoola, Samuel Medayese, Olawale Akogun,</i>			
THE GREEK NATIONAL DOCUMENTATION CENTRE - RESPONDING TO THE COVID-19 PANDEMIC	20		
<i>Saachini Evi, Malliou Nena, Maniadakis Nikos, Megas George, Vasilaki Varvara, Angelidis Angelos, Karampekios Nikos</i>			
PUBLICATIONS	25		
WEBINARS	26		

The Triple Helix Association Magazine, *Hélice*, is published quarterly: March, June, September and December. Contribute

ARTICLES/ESSAYS dealing with aspects of the interaction between academy-industry-government (Triple Helix) for fostering research, innovation, economic competitiveness and growth. Contributions should be in MSWord, 2500-3000 words, **Contact:** Liana Kobzeva (Editor in Chief), 05.liana@gmail.com,

BOOK REVIEWS from publishers and writers/reviewers on new publications relating to Triple Helix themes. Reviews should be original and interesting, should be written clearly and concisely, and 1000-1500 words in MSWord. **Contact:** brancaterra@gmail.com.

NEWS ITEMS related to conferences or events, call for papers, projects, job posting, and any other activity relevant to Triple Helix interactions you/your organization is organizing/have organized. Articles should be in MSWord, no longer than 1000 words, and include web links to any related activity. **Contact:** , Sheila Forbes (Managing Editor), sheila.forbes@strath.ac.uk.

Deadlines for submissions to be included in related quarterly issue:

28 August 2020 for September 2020 issue

28 November 2020 for December 2020 issue

29 February 2021 for March 2021

28 May 2021 for the June 2021 issue

EDITORIAL

Dear Readers

Over the past few months, the world, faced with the COVID-19 pandemic, has been forced not only to quickly develop solutions to control the spread of the incidence and consequences of the pandemic, but also to look for options for transforming many areas of our lives.

The transformation of the basic processes and activity models will primarily affect SMEs (especially services, tourism, hospitality, cafes and restaurants), educational organizations (primarily universities, as the value of education will be formed on completely different principles), entertainment, retail, etc. In all these changes, it is necessary to take into account the fact that the consumption model will change, since many people are left without work and a constant source of income, or their incomes have significantly decreased. An important role in the search for new organizational models of activity is given to the governance, especially to local governments, that ensure the welfare of local territories.

It is important to note that many national governments, together with local authorities, have already developed plans to restore the economy, and even to develop it during this crisis period. And according to some optimistic forecasts in some sectors, it will be possible not only to return to the pre-crisis state, but even show an increase.

As was announced earlier, this issue of *Hélice* is devoted to examples of solutions developed and implemented based on the Triple Helix model to overcome the consequences of COVID-19 and restore the economy in different territories. We are grateful to the authors who submitted their articles, and greatly appreciate their contribution. This issue presents examples from Spain, South Korea, Nigeria and Greece. It is difficult to predict which of these measures will be successful and which will have to be reviewed, but for us, as a community, it is important to exchange not only successful practices, but also realizable attempts.

It's also necessary to note that the Triple Helix Association, living in a remote format and having Chapters in different parts of the world, and meeting in person only twice a year at the Conference and the Summit, managed to adapt to new conditions. Therefore, we are pleased to welcome you to the 18th International Triple Helix Virtual Conference, which will be held on 15-16 June 2020.

I would also like to remind you about two more Triple Helix initiatives dedicated to finding solutions to overcome the effects of the pandemic. Firstly, the Study on Triple Helix Innovation to Address the COVID Pandemic was launched,

and we invite you to complete the online survey. Secondly, is the Special COVID-19 Webinar Series and we invite you to join. You can find the details of these initiatives in this issue.

For further information, please contact Liana Kobzeva (Editor in Chief) at 05.liana@gmail.com, or Sheila Forbes (Managing Editor) at sheila.forbes@strath.ac.uk.

We sincerely hope that COVID19 and its consequences will not affect you and your families, and we look forward to hearing from you soon and meeting online at the 18th International Triple Helix Conference!

Liana Kobzeva
(Editor in Chief)
05.liana@gmail.com

June 2020



STILL ON TIME TO REGISTER FOR OUR VIRTUAL CONFERENCE



CONFERENCE REGISTRATION

We are pleased to inform you that this year the annual conference, the XVIII International Triple Helix, will go **VIRTUAL**.

The Conference, organized in cooperation with Tampere University, Finland, on the theme “**Future of innovation and innovation for future**”, will be delivered online on **15-17 June 2020**, and it will offer an engaging and interactive experience to all delegates attending. Highlights will include

:

Networking tools supported by the world’s leading event networking platform [Brella](#).

- AI powered matchmaking tool which allow facilities to find common research interests, and schedule video meetings during our virtual coffee breaks. Real-time audience interaction during conference presentations supported by [Slido](#).
- An electronic copy of the conference proceedings. The opportunity to virtually participate in the **Socially Responsible Entrepreneurial University Workshop** as part of the HLX4EU Jean Monnet Project on **17 June 2020**.

If you are a THA member you can join free of charge as a non-presenting participant.

THA organizational members can also benefit from a **free registration package and virtual booth** to promote their organisations.

Ask for your free registration code by writing an email to mlaura.fornaci@triplehelixassociation.org

If you are not a member you can subscribe the membership at www.triplehelixassociation.org/membership-request and get the right to attend the Conference free.



INTERACTION AND SOCIAL OPPORTUNITIES OFFERED BY BRELLA

The Brella platform offers the full virtual event experience for THC participants by displaying the livestream content and by suggesting the best connections for you to meet with based on AI powered matchmaking. After you sign in and choose your interests, Brella will recommend who you should connect with. To get the most out of the event, you will be able to set up meetings with event partners, and attendees already before the event begins. You will be informed via email on Brella platform launch.

PUBLICATION OPPORTUNITIES

Along with the regular submissions to the [conference-related journals](#), there are two ongoing Calls for Special Issues:

- Triple Helix Journal - “Future of innovation and innovation for future”. Deadline, 15 August, 2020. [Call for papers](#)
- Sustainability Journal - [Transnational Research Collaboration and the Impact](#)”, Deadline, 31, October, 2020

For additional info: thc2020@tuni.fi

CONFERENCE PROGRAMME



MR ESKO AHO

We are honored to have a prestigious keynote speaker from East and Africa Advisory Council at JP Morgan, talking at THC2020, **MR ESKO AHO**, former Premier Minister of Finland, Chairman of the Board of Cinia Oy and Adven Group and on the Supervisory Board of Sberbank, Member of Europe, Middle speak on Tuesday 16 June 2020 on “Innovation to the Future in the light of the contemporary crisis”.

Mr Aho was a Member of the Finnish Parliament from 1983 to 2003, where he chaired the Centre Party from 1990 to 2002, and was elected Prime Minister at the age of thirty-six. Under his leadership, Finland joined the European Union. After his political career, Mr Aho served as President of the Finnish Innovation Fund Sitra and then led Corporate Relations and Responsibility at Nokia. Esko Aho served as Executive Chairman of the Board of East Office of Finnish Industries 2013-2019. At present he is Senior Advisor at East Office. Furthermore, he served as elected member of the Executive Board at the International Chamber of Commerce 2013-2019. He acted as Chairman of the Board at ICC Executive Board Policy and Commissions Committee for four years. He is an invited member of Club de Madrid, an independent organization of former heads of state and government dedicated to strengthening democracy.

The programme and accepted abstracts will be available online: <https://events.tuni.fi/thc2020/programme/>. The plenary sessions include:

Keynote by MARTTI HETEMÄKI, Permanent Secretary, Ministry of Finance (Finland) ”Changes affecting innovation policy”

Triple Helix vs Quadruple Helix Dialogue by LOET LEYDESDORFF, ELIAS CARAYANNIS and DAVID CAMPBELL. Moderated by Yuzhuo Cai

Special Session on Triple Helix response to Covid-19 with a keynote by HENRY ETZKOWITZ: *What can we learn from the Triple Helix response to the Great Depression?*, and panel discussion. Moderated by Riccardo Viale: *Government vs virus: Italy*

Panel discussion with representatives of ACADEMY, GOVERNMENT AND INDUSTRY: *INNOVATION POLICY IN FINLAND - Challenges of the past, possibilities of the future*. Moderated by Markku Sotarauta

Panel discussion with FINNISH INDUSTRIES - *“Innovation expectations of 2020 and experiences from industry towards researchers and society?”* Moderated by Harri Kulmala, CEO [DIMECC](#)/ Markus Sjölund, Tampere Chamber of Commerce and Industry

Keynote by MARTIN KENNEY, Distinguished Professor of Community and Regional Development at the University of California, Davis, *Platform-Dependent Entrepreneurship and Private Regulation: What Does It Mean for Entrepreneurs, Small Business and Society?*

Keynote by JOANNA CHATAWAY, Head of Department of Science, Technology, Engineering and Public Policy, University College London : *Triple Helix scholarship and transformative innovation agendas: Does the Triple Helix need a new direction?*

AWARDS TO BE PRESENTED AT THE THC2020

The Triple Helix Association is pleased to announce the Awards which will to be presented at the XVIII International Triple Helix Virtual Conference (15-17 June 2020).

BEST CONFERENCE PAPER AWARD

Awarded for the best paper in response to the THC2020 Call, recognizing the conceptual and methodological quality of their research papers, their originality and implications/applications for the Triple Helix models, concepts and approaches. (Award Committee: Dr Emanuele Fiore (Chair), Professor Emanuela Todeva and Professor Yuzhuo Cai.)

SOCIAL MEDIA AMBASSADOR AWARD

We are pleased to open the competition for the THC2020 SOCIAL MEDIA AMBASSADOR AWARD.

It will be awarded to conference delegates active in making the THC2020 a memorable event, by showcasing the conference activities and outcomes via social media before and during the Conference, using the hashtag **#triplehelixconference2020**.

The prize will be awarded on the basis of a mix of criteria such as: 1. number of posts published in any of the following social media (Facebook, Twitter, LinkedIn), 2. number of engagements (like, comments, re-tweets), and 3. quality and originality of messages. To be considered for the award it is compulsory to add to your posts **#triplehelixconference2020**. The winner will receive a signed and stamped official award certificate by the Triple Helix Association (THA). A specific announcement will be published on the THA website and other online media where THA is present. The prize includes a one-year (1) free membership of THA. If the winner is already a THA member, then this award will add one year to current membership. (The Prize Award Committee: Dr Emanuele Fiore (Chair), Professor Emanuela Todeva (VP of the THA), Dr Dimitri Corpakis (Member of the THA Executive Committee), and Maria Laura Fornaci, Executive Director THA).

entreTime AT XVIII INTERNATIONAL TRIPLE HELIX VIRTUAL CONFERENCE 2020

entreTime
...and the teachin' is easy



A virtual workshop will be held on **15 June, 2020** at the Triple Helix Conference “Future of innovation and innovation for future”.

Funded by the Executive Agency for Small and Medium-sized Enterprises (EASME) set up by the European Commission, entreTime is a new entrepreneurial teaching service aimed at upskilling educators within higher education institutions and upgrading their pedagogical tools on this domain. Managed by a consortium of experienced and acknowledged organizations in the field of entrepreneurship education in Europe, including the Triple Helix Association, and supported by a pool of international experts, entreTime intends to provide an interactive, blended learning “*stop and go*” training programme as well as an open faculty platform offering a multilingual toolkit and online co-creation services for networking and joint activities.

The training offer will be design based on the Entrepreneurship Competence Framework, also known as EntreComp, built around a common understanding of entrepreneurship as a transversal competence which applies to all spheres of life: from nurturing personal growth, to actively participating in society, to (re-entering the job market as an employee, or as self-employed, and also starting up new ventures (cultural, social or commercial).

Mr Klaus Sailer (Professor for Entrepreneurship at the Munich University of Applied Sciences and CEO of the Strascheg Center for Entrepreneurship), and Professor Mats Westerberg (Professor Entrepreneurship and Innovation, Luleå University of Technology), will introduce the initiative, focusing on experience between simply education training and entrepreneurial education training.

The entreTime philosophy considers entrepreneurship as a holistic pedagogical teaching method (“**teaching through entrepreneurship**”) for spreading entrepreneurial teaching and co-creation, outside the traditional domain of business schools and economic faculties.

This webinar will present all the envisaged opportunities for non-entrepreneurship educators (professors, intermediaries/academies for entrepreneurship) such the pilot actions and for the actors of the entrepreneurship ecosystem and quadruple helix stakeholders by the living community of educators to be set up in the next three years.

Additional information on the project can be found at www.entretime.org while to keep continuously updated on projects progress and prospects, you can join the entreTime community both on LinkedIn and Twitter.



Co-funded by the
Erasmus+ Programme
of the European Union

Online International Workshop

SOCIALLY RESPONSIBLE ENTREPRENEURIAL UNIVERSITIES

15 June 2020

The Workshop engages scholars, policy-makers, relevant practitioners and citizens to discuss how Europe can better respond to two intricately interrelated transformations, namely societal transformation, and university transformation through constructing “socially responsible entrepreneurial university” (Cai, 2018).

The **keynote speeches** by leading experts in the field of university-industry-government interactions:

- **Taru Pilvi**, Tampere University Director of Innovation; "*The Entrepreneurial and/or Socially Responsible University – A Janus Dilemma?*",
- **Dr Caterina Berbenni-Rehm**, Advisory Board's member of AI and Society, Springer Editors; co-founder of the 'European Entrepreneurial Regions Initiative' and '*The civic university as a socially responsible university*',
- **David Charles**, Professor, Newcastle Business School, Northumbria University

will be followed by the **Triple Helix Scenario Game** moderated by Professor Emanuela Todeva, Vice President of Triple Helix Association. The Triple Helix Scenario game combines a standard Scenario Planning technique with our knowledge of the Triple Helix model, **addressing the challenges of Knowledge Transfer across Universities, technology transfer Offices, Science and Technology Parks, or other Innovation Intermediaries**. The aim of the game is to **create an innovative solution that adopts a Triple Helix multi-stakeholder approach of university-industry-government interactions**. To complete the game, the participants will need to provide a creative solution to a complex problem, identified through the prism of a specific expertise position.

The workshop will be organized on a Zoom platform.

Please register by 31 May, 2020 to get the access link <https://events.tuni.fi/hlx4eu-workshop/registration/>



SUBMIT AN ABSTRACT

CLOSING DATE: 30 JUNE 2020



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA
DEPARTMENT OF MANAGEMENT

N O E M A



The call for submissions for the III International Triple Helix Summit is still open and you have up until **30 June 2020** to submit an abstract for any of the Summit themes in the following categories:

- **Academic papers:** Academic research (theoretical and/or empirical)
- **Practical case studies:** Cases addressing the interactions between research, policy and practice (with emphasis on successes/challenges, good/bad practices, current and future implications for industry and society). We encourage submissions from academics, practitioners and policy-makers
- **Posters:** Visual summaries of academic papers and practical case studies

In response to the global Coronavirus pandemic that now sweeps the planet, the Triple Helix Association Summit has recently launched a **Special Call for Papers (CfP)**,

https://triplehelixsummit2020.triplehelixassociation.org/wp-content/uploads/2020/04/THA-Summit-2020_Special_Covid19_CfP.pdf

This addresses mainly the situation created unexpectedly by the Covid19 pandemic and focuses on the different structural aspects of its societal impact, the ways science, industry, and government have been addressing the crisis as well as the multiple ways that the Triple Helix innovation model could be used to address this and future crises.

For all type of submissions consult the guidelines and submit your abstract at this link:

<https://triplehelixsummit2020.triplehelixassociation.org/themes-and-submissions/call-for-submissions/>
by 30 June 2020.

For additional info: summit2020@triplehelixassociation.org



Contribute to a Study on Triple Helix Innovation to Address the COVID Pandemic

The focus of the study is to **identify the multiple response patterns to the Covid-19 pandemic and understand weaknesses, strengths, and challenges for countries and their innovation systems, drawing on political, social and economic dimensions.**

We aim to develop a comparative analysis at country level combining the survey results, expert focus groups, AI-enabled technologies and scenario building modelling techniques. The study aims to test a working hypothesis that a greater interlinkage and cooperation among the

would add Civil Society) may greatly increase resilience and the capacity of effective response of societies in addressing major crises like the Covid19 global pandemic.

The study on the emergence, evolution, and impacts of the Coronavirus pandemic draws on several dimensions. It tries to identify the multiple patterns through which governments, academia and business communities reacted to the evolving threat, the ways these reactions were structured, their quality and resilience, as well as their relevance for society. It is also intended to capture as much as possible, the socio-economic aspects of the crisis, including the major dimension of trust (in science, experts, governments and political leaders) and how this impacts in positive or negative terms on the evolution of the overall situation.

In this context, reflecting the triple helix interactions, we are seeking your inputs.

Please take a few minutes to complete the
[online survey](https://docs.google.com/forms/d/e/1FAIpQLSdwQvVbISFEPu73ceJLI-a-riNoHFP7lBrQEYjcnzSZCQEA/viewform)

<https://docs.google.com/forms/d/e/1FAIpQLSdwQvVbISFEPu73ceJLI-a-riNoHFP7lBrQEYjcnzSZCQEA/viewform>

PRESIDENT'S CORNER

Triple Helix in the Coronavirus Era

HENRY ETZKOWITZ

International Triple Helix Institute

Silicon Valley

www.trilehelix.net



Many organizations have experienced difficulties in moving from physical to virtual operation but for the Triple Helix Association (THA) it is business as usual. While we have an official physical address at the Accademei dei Lincei in the Palazzo Corsini on the Via della Langara in Rome, our *modus operandi* has always been to work from home, whether in Terni or Palo Alto, and beyond, interacting over the Internet. Yet, we did come together at least once a year for a Conference or Summit. That has all changed with Covid-19. Like many other Associations we are experimenting with an on-line meeting for our 2019 conference. (You should receive this Corner in time to join the event free as a THA member or, if not yet a member, you may join THA for that purpose and more!) We look forward to a report from the Tampere organizers about their experience in pivoting to virtual in the next *Helice*).

Post new-normal, even post-vaccine, the shelter in place experience is expected to have long-term societal effects, for example, on city and suburban living patterns, and regional location decisions, organizational and individual. Many metropolises are banning vehicular traffic, except for local residents, from a growing number of city streets allow room for socially distanced pedestrians, cyclists and café tables. Google has halted its purchase of offices and land in San Francisco, whether temporarily or long-term is not known yet. Indeed, some firms plan to extend work from home policies beyond the crisis e.g. Twitter or even give up central offices all together. Facebook, a firm that once offered employees a \$10,000 bonus for locating within ten miles of the company's Menlo Park Headquarters, is expecting reduced need for a physical presence (Streitfield, 2020). Indeed, reversing field; it is open to employees relocating from Silicon Valley to less expensive regions, albeit with reduced salaries. The virtual economy has thus far demonstrated that it can flourish under lockdown but it is, nevertheless, dependent upon an underlying physical economy whose workers' pay a disproportionately high health price.

Hopefully, a new regard for health care and essential workers in service, agricultural, logistics and manufacturing industries will persist beyond the pandemic crisis, with

improvement in their conditions of work and remuneration but this is sadly unlikely. More predictable is that supermarket workers, drivers, slaughterhouse workers and other mainstays of the physical economy will disappear from focal attention once the health emergency recedes. It is indeed noteworthy that the 1918-1920 flu pandemic virtually disappeared from collective public memory within a relatively short time (Barry, 2004). As Arthur Miller expressed his honor for an underappreciated individual in *Death of a Salesman*: Attention must be paid. Neither the pandemic, its economic effects, and the persisting racial issues and social inequalities that they exacerbate, will dissipate without a concerted response to all. A Triple Crisis calls for a creative Triple Helix solution.

CRISIS RESPONSES

An interacting health, economic and civil society breakdown is at hand. The confluence of pandemic, potential economic depression, and demonstrations protesting police violence are creating a proto-revolutionary civil unrest situation in the US that may be resolved peaceably or violently, to various degrees. The original triple helix of university-industry-government collaboration was invented in New England in response to the Great Depression. The innovation created to develop new firms from academic research became the prototype for the contemporary venture capital firm (Etzkowitz, 2002). It also became the model for the Manhattan Project, a bottom-up inspired; top-down implemented university-industry-government crash program to develop an atomic bomb during the Second World War (Groueff, 1967). The closest to the former in the US is likely the crash program, by a high-tech firm located in the former Brooklyn Navy Yard, with support from the New York City Economic Development Administration to produce a basic ventilator device based on a student design project completed at MIT several years earlier (Somers, 2020). Another ventilator effort, organized by the Dyson firm, with its own funds in response to a British Government Call, produced a prototype in a few weeks' time but production did not ensue for reasons unstated, despite initial promises of a large British

Government purchase order accompanied by a corporate donation (Bashir, 2020; Dyson Company website, 2020).

At the US national level the so-called “Warp Speed” vaccine development program has a General seconded from the Army to handle logistics and an Executive drawn from a biotech firm to administer the program. To date, there is no word of an R&D unit drawn from academia, like the Los Alamos Lab, run by Robert Oppenheimer as in the original Manhattan Project, but the program is likely drawing upon existing academic research programs, remaining in place. Unfortunately, an early ramping up of the project was hindered by the Trump Administration’s short-sighted closing, in recent years, of various federal government units, and projects organized in previous administrations to respond to pandemic crises (Riechmann, 2020). Previous administrations also had their shortcomings. A more than a decade long visionary effort to subsidize design and production of a basic ventilator was lost, likely due to insufficient government oversight of the private sector (Klusch, Kliff and Silver-Greenberg 2020).

What we know about these various efforts is based on news and organization reports. In due course, the above instances, and their counterparts elsewhere, will provide a strategic search site (SRS) (Merton, 1987) for the investigation of triple helix responses to a crisis or lack of same. We can expect the presence, or absence, of a convening authority to be a key dimension for investigation. It is likely that, as in the period between the 1929 stock market crash and the inauguration of President Roosevelt, the Triple Crisis will worsen. Renewal of infection rates may be expected, especially in areas where social distancing was not in place effectively or long enough to drive the coronavirus out. Economic patches will likely be too late or insufficient to avert losses of significant sections of the economy.

President Hoover was an effective leader in marshalling public and private resources in response to the European food crisis in the wake of the First World War, yet his conservative laissez faire instincts and the political context in which he operated precluded taking measures on the scale required at home to address the Depression. We shall likely suffer a sustained interim period of economic, social, political, racial and health instability until a new administration takes office with a mandate for thoroughgoing change thrust on it. Franklin Roosevelt did not run on a radical platform and neither will Joe Biden. Nevertheless, if a Biden administration takes office, it will likely respond to underlying racial and social issues, given its strong base in the Afro-American community, as well as overt economic and health issues.

Of course, Trump could luck out. Warp-speed, the quasi-Manhattan project to achieve a vaccine could succeed in record time. The President could go with his instinct to spend whatever it takes to revive the economy by

supporting a massive multi-trillion dollar infrastructure program that would lift all boats. During the 1980’s, when New York City was unable to repair the Wollman skating rink in Central Park, Trump volunteered his firm and successfully accomplished the job. During that same era, he demonized several young black and brown men who were later shown innocent of rape charges, brought against them by police seeking a quick solution to a highly publicized assault in that same park that led to their conviction and imprisonment. Which side of Donald Trump are we likely to see for the rest of his Administration? Perhaps both, alternatively.

A positive effect of the pandemic is the creative collaborations generated in response. THA members have initiated various projects including a special issue of Triple Helix, an on-line survey to generate data for a scenario development exercise, and the organization of national and regional teams to track different Triple Helix and societal responses to the crisis (See www.triplehelixassociation.org). You are invited to participate!

THE DARK SIDE OF SILICON VALLEY

Much has been made of the positive effects of social media, making it possible for ordinary people to publish and distribute text and images, semi-professionally. However, artificial intelligence and machine learning tools, abetted by data theft, has made it possible to target individuals and groups susceptible to misinformation, without their knowledge or virtually any ones’ awareness as the content disappears into the void, retained only by the platform firms and perhaps the targeted persons. Both, the British Brexit vote and the US 2016 election were affected by the efforts of the Cambridge Analytica firm, since disbanded, primarily using Facebook, with the aid of the firm itself to influence these elections (Cadwalladr, 2019).

Social media has been effectively utilized to spread race hatred and fear of immigrants, successfully getting people to act against their own interests. Although such tactics are in the arsenal of demagogues, like Hitler, utilizing the mass media, an under-regulated social media industry, whose earnings increase as division and discord increase as a result of paid content, has made firms like Google, Facebook, and Twitter, reluctant to exercise control over the use of their platforms. In a recent modest exception to the rule, Twitter placed a modest warning tag on a Trump tweet, earning his ire and a chilling Presidential Executive Order in return. The potential of social media as a surveillance and control tool has been most thoroughly exposed by the *Observer* newspaper and a Parliamentary Commission, although bringing Facebook’s CEO Mark Zuckerberg to Westminster to testify has proved impossible to date (Pegg, 2019).

COLLATERAL CASUALTIES

In addition to direct responses to the medical emergency, we should also be on the lookout for analogous responses to the effects of the coronavirus crisis that may become the basis for a renewed Triple Helix. While the rise of computer generated music and art has been mooted, these constructs are a long way from producing their “Picasso” so we may proceed on the assumption of relative irrelevance of longest-term effects, stated by JM Keynes in response to the Great Depression that in the long run we are all dead, and focus on generating a novel response to the crisis of our time, with the tools at hand or within reach. The Internet and Augmented Reality techniques accompanied by related streaming technologies for distribution of mechanical reproduction have the potential to recreate the “aura” of the original work of art. (Etzkowitz, Schofield and Kehl. Under Review).

As usual, artistic imagination provides a window into the future. A furloughed children’s theatre performer in Prague took the initiative to reinvent live theatre in the context of lockdown strictures. His initial project staged a reading from a small boat, quayside, but only one spectator appeared. His next effort, “Art Parking,” adapting the almost superseded drive-in motion picture theater to an open parking area adjacent to the city’s vegetable market was quite successful. A range of theater groups, from local to national, were invited to contribute performances from a platform in front of parked cars. More than eleven thousand persons attended in a month’s time, expressing their appreciation via car klaxon. The audience maintained social distance in their cars, with performers and audience visible to each other through auto windscreens (Kingsley and Vancon, 2020). Others who are waiting out the pandemic without reinventing themselves, like the family circus parked in a field on the outskirts of Rome that extended its rental for the duration, may fall by the wayside.

The early response of exemplary arts institutions and the public to the strictures of the coronavirus point the way forward. The lectures offered by the Whitney Museum along with placing an increasing number of the Museum’s collection on-line has possibilities for recreation and enhancement of the physical museum experience, with or without the crowds, through augmented reality and three-dimensional presentations. Perhaps we may participate in future Internet conferences, with our avatars representing us in chat room spaces at virtual coffee hours and other traditional gatherings reimaged. Mixed modalities, making the arts more broadly and inexpensively accessible while retaining a modest local audience augur the future for scientific conferences as well as artistic presentation and performance.

CONCLUSION: WAITING FOR CORONAVIRUS

There has been debate within the Triple Helix community over the time frame for a vaccine and when regular conference activities could be retaken. An exceedingly tight deadline could conceivably be met for a COVID 19 vaccine, even as soon as late Fall 2020, according to Dr Anthony Fauci, head of US NIH Division of Infectious Disease. With everything highest priority and unlimited resources, as in the Manhattan Project, with close U-I-G collaboration and development stages collapsed into one another, it is possible! However, biological phenomenon is less tractable than physical, where once proof of principle had been achieved, the end result was virtually inevitable.

The coronavirus is not so simple. A wily natural creature may hold us hostage for longer or shorter. In the USA, we have seen a nonlinear model of grief: denial->acceptance; denial as well as denial-> acceptance, split according to political ideology. Under conditions of pandemic induced social breakdown, what type of analytical strategy is most appropriate? We suggest Weberian “real typical” extrapolation from emerging trends (Ringer, 1997). Viewed in interaction with each other, through a Triple Helix lens, reasonable implications may be inferred e.g. persistence of virtualization, making superfluous for the foreseeable future a third runway at Heathrow; the unviability of Boeing and Airbus unless they collaborate to produce an advanced design, superseding the thousands of grounded craft that are unlikely to be fully relaunched anytime soon and, inter Alia, the riskiness of presuming resumption of full-scale international in-person scientific conferences in a year’s time.

We may expect comparable analogous effects to the arts on the future of scientific meetings and associations, a mix of return to normal and integration of innovation. Combined with an increasing wish to reduce one’s carbon footprint, a full return to previous levels of optional long-distance air travel may not occur. An Internet meeting has its pluses and minuses: on the positive side of the ledger, the sharply reduced expense of participating allows broader participation; on the negative, the strictures of virtual software, to date, will limit informal interactions. An intermediate model could be a virtual conference conducted in tandem with one or more regional meetings, allowing multiple local in-person gatherings, coordinated with an international virtual reach. Even post-pandemic, we may well wish to take advantage of the positive elements of each format and organize blended meetings, combining virtual and in-person elements.

REFERENCES

- Barry, J. (2004) *The Great Influenza*. New York: Viking Penguin.
- Bashir, N. (2020) James Dyson designed a new ventilator in ten days. He's making 15, 000 for the Pandemic fight. *CNN Business* 19 March.
- Cadwalladr, C. (2019) Facebook's role in Brexit - and the threat to democracy (Carole Cadwalladr, TED2019). www.ted.com/talks/carole_cadwalladr_facebook_s_role_in_brexit_and_the_threat_to_democracy?utm_source=tedcomshare&utm_medium=email&utm_campaign=tedsread.
- Dyson Company Website. Ventilator Statement by James Dyson, May 2020.
- Etzkowitz, H. (2002) *MIT and the Rise of Entrepreneurial Science*. London: Routledge.
- Etzkowitz, H, Schofield, T and Kehl, L. (Under Review) *Ars Gratia Artis: Rethinking Industrial Policy for the Arts in the Coronavirus Era*.
- Groueff, S. (1967) *Manhattan Project*. Boston: Little, Brown.
- Kingsley, P and Vancon, L. (2020) The Drive-In Theater: Keeping Drama Alive During the Lockdown. *The New York Times*, 31 May,
- Klush, N, Kliff, S and Silver-Greenberg, J. (2020) The US Tried to Build a New Fleet of Ventilators. The Mission Failed. *The New York Times*, 29 March.
- Merton, R K. (1987) *Ann Rev Social, THREE FRAGMENTS FROM A SOCIOLOGIST'S NOTEBOOKS: Establishing the Phenomenon, Specified Ignorance, and Strategic Research Materials*, 13:1-28,
- Pegg, D. (2019) Facebook labelled 'digital gangsters' by report on fake news. *The Guardian*, 17 February.
- Riechmann, D. (2020) Trump disbanded NSC pandemic unit that experts had praised. *Associated Press*, 14 March.
- Ringer, F (1997) *Max Weber's Methodology: The Unification of the Cultural and Social Sciences*. Cambridge: Harvard University Press
- Somers, J (2020) The Engineers Taking on the Ventilator Shortage. *The New Yorker* 11, May
- Streitfield, D. (2020) White-Collar Companies Race to Be Last to Return to the Office. *The New York Times* 8

Understanding the Triple Helix Role in Response to COVID-19: a Comparative Analysis

CLAUDIA OLVERA

Universitat Politècnica de Catalunya-Barcelona, Spain.

claudia.olvera@upc.edu

INTRODUCTION

The Triple Helix Association Research Project on the emergence, evolution and impact of the Coronavirus pandemic draws on multiple dimensions. It tries to identify the multiple patterns through which governments, academia, and business communities, individually and collectively, through their interactions, reacted to the evolving threat: the ways these actions were structured, their quality and resilience, as well as their relevance for society. It will try also to capture as much as possible, the social and health, economic, urban and environmental, and governance aspects of the crisis and how this impact, in positive or negative terms, the evolution of the overall situation.

Societal, cultural, and economic approaches in confronting COVID-19 appear to vary in different parts of the world, as well as the impact of similar measures implemented in diverse regions produce varying results. Therefore, this study will focus on the multiple response patterns by the triple helix agents (government, industry and academia) during the timeline of the Covid-19 pandemic: (i) Pre-COVID; (ii) COVID, and (iii) Post-COVID.

This study will be carried out through a comparative analysis in European, Asian, and Latin American societies to identify and understand weaknesses, strengths and challenges for countries and their innovation systems, drawing on political, social and economic dimensions. The countries and regions participating in the current pre-study phase of this project

are UK, Brazil, Pakistan, China, Spain/Catalonia, and Mexico.

RESEARCH QUESTIONS

The Triple Helix Association is engaged in developing a worldview of the triple helix interactions among government, academia, and industry in the development of policy responses, and to devise scenarios for the future to assist in policy recommendations in the light of lessons learnt from the COVID-19 crisis response.

Hence, we would like to answer the following research questions:

1. Will this Crisis COVID-19 lead to Transformation (1) Social and Health, (2) Economical, Social, (3) Urban and Environment, (4) Governance/Political]
2. What kind of *future* is possible/ thinkable/ accepted/ rejected?

To answer the research questions, the project will identify meaningful effects and actions by Triple Helix Agents that have already taken place at national or regional level, or are evolving as we go forward during three stages: (i) Pre-COVID: experience of countries with similar events (Sars and Ebola) in front the rest. China, Taiwan, South Korea and Singapore; (ii) COVID: initial acceptance or rejection, (What is the change?), (iii) Post-COVID: managing the new normal, until the vaccine, and (iv) beyond.

METHODOLOGY

This study uses both a quantitative and a qualitative research approach.

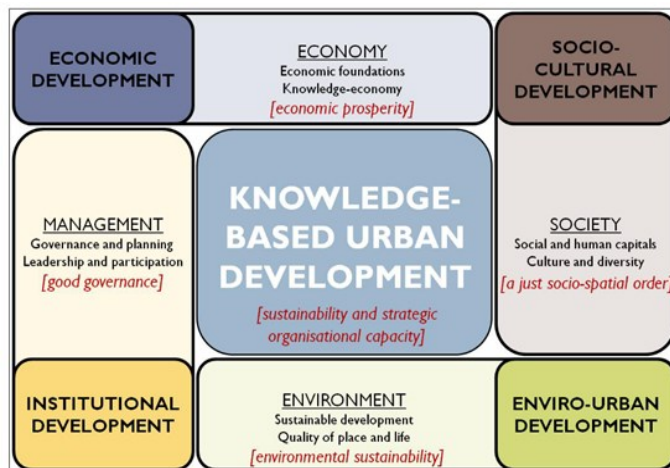
A survey was designed related to COVID-19 and the science and innovation systems, to reflect the triple helix interactions and show the environment of the countries involved in the project (see www.triplehelixorganization.org to respond to the survey).

In this context, we are seeking to have inputs on:

1. What do you regard to be the 3-5 most important challenges for the system?
2. What do you regard as the 3-5 most important weaknesses of the system?
3. Which, in your view, are the 3-5 most important strengths of the system?

Moreover, the Triple Helix research project will use the knowledge-based urban development model (KBUD), and diffusion of innovation theory [2, 3,12]. to capture the breadth and the depth of the different social and health, economic, urban and environment and governance dimensions of the unfolding crisis as it happens. We will

analyze the changes and will try to understand how the major societal forces behind academia, business, civil society, and government come together (diverging or converging) to



tackle the crisis.

Figure 1. Knowledge-based urban development model (KBUD)

Regarding qualitative research, the study will adopt the Case Studies approach, extensively used in social science research (Yin, 1984) [4]. Case studies are the preferred strategy when: (i) the type of research question is “how” or “why”; (ii) the investigators have little control over events; and, (iii) the focus is on a contemporary phenomenon within some real-life context.

Case Studies will be carried out by country-based local teams with the objective to explore actions (the evidence of interaction between university, industry and academia in regard to the four dimensions of the KBUD model, identifying: who initiated?, Why?, How?, When?, Where?, etc..

Actions are classified according to the following dimensions and indicators:

- Social: health, education, housing, security and entertainment.
- Economics: employment, financial and fiscal.
- Urban and environment: pollution, solid waste, water, traffic and transportation.
- Governance: laws, decrees and legitimacy.

Finally, to answer the research question about **What kind of future is possible/ thinkable/ accepted/ rejected?**, the System Dynamics model (SD) will be used to simulate the effectiveness of key actors' actions (government, industry and academia) in relation to the threats posed by the Covid-19 pandemic.

ACTION	HEALTH	EDUCATION	HOUSING	SECURITY
WHY	VIRUS			
WHAT	LOCKDOWN			
WHO	GOVERNMENT			
HOW	LAW			
WHEN	APRIL 20			
WHERE	NATIONAL/ FEDERAL LEVEL			
OUTPUT	LOW TRANSMISSION OF COVID			
DIMENSION :	SOCIAL AND HEALTH			

Figure 2. Case Study template (Actions)

7, 8]. While statistical forecasting models rely on equations developed ex post, i.e. following observations, SD aims first to determine the system’s structure consisting of positive and negative relationships between variables, feedback loops, systems archetypes, and delays [6, 9, 10] followed by ex-ante projection where ‘future system states are replicated from the SD model’ [11].

SOME PRELIMINARY RESULTS

To assess the actions' intensity we use an index from zero to one as a way to measure their impacts. However, the joint effect of the key actors in relation to each indicator is regulated by the degree of agreement achieved by actors' actions, measured by an index from zero to one too.

The model also considers that the effect of the actions does not remain indefinitely, but is subjected to an attrition or dissipating rate

The model is built to be simulated in weekly intervals, for a three years period. This is sufficient to cover initially the three stages: Pre COVID, COVID and Post COVID-19.

Firstly, in the simulation model, the value of every indicator - actions' intensity, level of agreement or attrition rate - in the dimension graphs (social, economics, urban-environment, and governance) can be modified in order to simulate the accumulated effect of actions in each one of these dimensions and indicators over time and their impact on the health and economics sector.

In each sector, there is a participation of: government, industry and academia and, in each dimension we have identified several relevant indicators.

The Triple Helix Association research project will try to capture the relative weight of the different components inside overall patterns and the ways they are able to provide positive impact on societies. Finally, it will try to discover the multiple ways that the Triple Helix actors build resilience in the system and how these can be enhanced and replicated to encourage best practice for the long term.

CORE EXPERT TEAM

- Claudia Olvera**, Universitat Politècnica de Catalunya-Barcelona, Spain, claudella123@gmail.com
- Rahmat Ullah**, University of Management and Technology, Lahore, rahmat@irp.edu.pk
- Jorge Duran**, Universidad de las Américas Puebla, Mexico, jorgea.duran@udlap.mx
- Tatiana Schofield**, Head, Knowledge Transfer, Royal College of Art, London
- Professor Josep Miquel Pique Huerta**, La Salle Innovation Park- Ramon Llull University, Spain

ACTION	GOVERNMENT	UNIVERSITY	INDUSTRY	SOCIETY
SOCIAL AND HEALTH	LOCKDOWN (LEADERSHIP)	ONLINE EDUCATION	CLOSE	
ECONOMIC		HACKATHONS	SEAT: CHANGE CORE BUSINESS	
URBAN AND ENVIRONMENTAL	TRANSPORTATION INITIATIVES			
GOVERNANCE				LAWS

Figure 3. Case Study template (Comparative Analysis)

System Dynamics (SD), originally known as Industrial Dynamics, is a creation of Jay Forrester in the 1960s in the Massachusetts Institute of Technology [5]. SD is essentially a methodology, which uses the theory of stock accumulation, information feedback and control, in order to evaluate organizations and situations. The basic idea underpinning this approach is that any complex situation can be described in terms of elements and flows; flows being the relationships between the elements. System Dynamics assumes that things are interconnected in complex patterns, that the world is made up of rates, levels, and feedback loops, that information flows are intrinsically different from physical flows, and that non-linearities and time-delays are important to system behavior arising from the system's structure [6].

The focus of SD methodology is to capture the structure of the complex situation in terms of the interactions of the elements (flows and stocks) between them; this description constitutes the dynamic behavior of the system. SD has been used in a variety of contexts, as a problem evaluation on the premise that the structure of a system that is the way the systems are connected generates its behavior, [6,

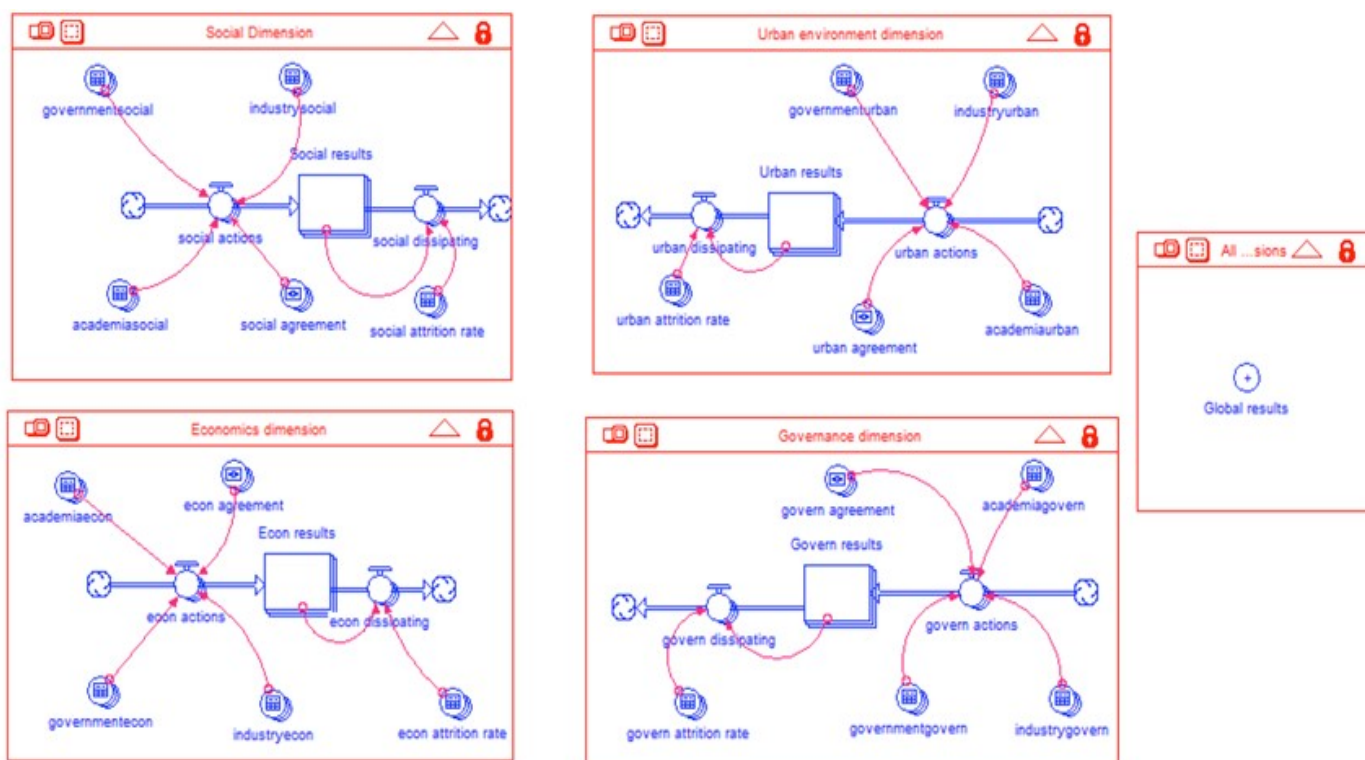


Figure 4. Structure of the model: four dimensions

Dr Yuzhuo Cai, Tampere University, Finland
Dr Christiane Gebhardt, Dress and Sommer, Switzerland
Professor Branca Terra, Federal University of the State of Rio de Janeiro, Brazil
Dr Dimitri Corpakis, former EU official and independent policy advisor, Belgium
Professor Tariq S Durrani, University of Strathclyde, Scotland, UK
Professor Henry Etzkowitz, International Triple Helix Institute (ITHI)

PARTICIPATE

Are you interested in developing this research in your organization or region? Interested parties should contact Maria Laura Fornaci
mlaura.fornaci@triplehelixassociation.org

REFERENCES

1. Etzkowitz, H and Leydesdorff, L. (2000) 'The dynamics of innovation: from National Systems and 'Mode 2' to a Triple Helix of university-industry-government relations', *Research Policy*, 29(2), 109-123.
2. Knight, R. (1995) 'Knowledge-based Development: Policy and Planning Implications for Cities', *Urban Studies*, 32(2), 225-260.
3. Sarimin, M and Yigitcanlar, T. (2012) 'Towards a comprehensive and integrated knowledge-based urban development model: status quo and directions', *International Journal of Knowledge-Based Development*, 3(2), 175-192.
4. Yin, R K. (1981). The case study as a serious research strategy, *Knowledge*, 3(1), 97-114.
5. Forrester, J. *Industrial Dynamics*. (1961). Waltham, MT, USA: Pegasus Communications.
6. Sterman, J. *Business Dynamics, Systems Thinking and Modelling for a Complex World*, (2000). USA: Irwin McGraw-Hill.
7. Stave, K. (2003) A system dynamics model to facilitate public understanding of water management options in Las Vegas, Nevada. *Journal of Environmental Management*, 67(2203): 303-313.
8. Richardson, G P and A L Pugh, *Introduction to System Dynamics Modeling*. (1989) Waltham MA: Pegasus Communications.
9. Wolstenholme, E F. (1982) *System Dynamics in Perspective*. *The Journal of the Operational Research Society*. 33(6): 547-556.
10. Wolstenholme, E F. (2003) Towards the definition and use of a core set of archetypal 7.
11. Winz, I and Brierley, G. (2007) *The Use of System Dynamics Simulation in Integrated Water Resources Management*, in *System Dynamics Conference 2007: University of Auckland*.
12. Rogers, E. (1995) *Diffusion of Innovations*. New York: Free Press.



COVID-19 Response of Industrial Complexes in South Korea

COVID-19 heralds an economic crisis above the level of the Great Depression of 1929. Indeed, it is becoming a reality everywhere, and it is urgent to prevent and end the spread of infection.

KICOX (www.kicox.or.kr), which manages industrial complexes in Korea, a country with the world's twelfth largest economy based on GDP, is jointly responding to COVID-19 proliferatrn prevention with a triple-helix model.

In South Korea, there are 1,220 industrial complexes, which are heavily populated by businesses and are used as production hubs. About 94,000 companies in the industrial complex account for about 70 percent of the production, export and employment of South Korean manufacturing industries, making it very important.

Of the companies in South Korea's industrial complexes, 97 percent are small and medium-sized enterprises. And they have limitations in independent responses in times of crisis. Around February 25, 2020, when the COVID-19 spread in South Korea was in the stage of spreading, KICOX heard opinions from major organizations and companies in the region and set up "Quarantine help centers" at twenty-six major branches of industrial complexes to prevent infectious diseases among companies with fifty or fewer workers, or those in urgent need of quarantine. This is considered a cooperation model among industries, governments, and institutions, to overcome the crisis of infection.

These centers provide companies with free supplies of masks, hand sanitizers, sprayers, sterilizing fluids and hand spray. This measure is to support the safety of small businesses vulnerable to quarantine. It also provides extra security in public facilities such as fitness centers, gyms, and dormitories in industrial complexes.

The quarantine activities were carried out 3,406 times from February 25, 2020 to March 4, 2020, and about 410,257 masks were distributed. About 62,000 workers at small businesses have been the priority targets for the provision of quarantine supplies and activities. The emergency provision of quarantine and essential supplies in vulnerable areas was critical to prevent the spread of COVID-19 at the beginning of the epidemic stage.

Before the COVID-19 situation entered the vogue phase, the method of overcoming the crisis of the triple-helix type (IGI) helped to create an industry-industry-government cooperative model with favorable responses from the surroundings. The phenomenon emerged at the Gumi Industrial Complex, which is called the center of Korea's electronics industry.

Since March 2020, Daegu City and Gyeongsangbuk-do Province have been the victims of the fast spreading of COVID-19 in Korea (Park, Park, and Chong, 2020). Located in the central eastern region of Korea, this region had become a region of caution, with the most confirmed cases. Gumi Industrial Complex is the centerpiece of Gyeongsangbuk-do's industry. If confirmed cases spread here, the pace of Korea's industrial crisis will accelerate.

KICOX allowed companies in Gwangju, located southwest of Korea, to deliver 5,000 masks and 500 hand sanitizers to companies in the Gumi Industrial Complex. This has been a case of cooperation between regions, and is seen as a

CHANG-BAE YOON

**Director General
Secretarial Department
39, Cheomdan-ro
Dong-gu
Daegu
REPUBLIC OF KOREA**

cooperative model for overcoming crises between industry-industry-government (IIG).

This partnership is also considered a great reference to the government's industrial policies that are fully committed to responding to COVID-19. A growing awareness of the safety of industrial complexes where companies are concentrated will spread the establishment of related infrastructure or safety centers. In the industrial world, the human-centered paradigm may spread rapidly.

“Quarantine help centers” for the safety of corporate workers in South Korea's industrial complexes is a reminder of the industry's sense of community for small business workers in the blind spot of safety.

Professor Han Woo Park at Yeungnam University, a triple-helix authority in South Korea, introduced that *“it is worth paying attention to as an example of overcoming COVID-19 with the Triple-helix model (IGI & IIG) in Korean industry,”* and said that research on overcoming triple-helix perspectives is needed in other areas as well.

REFERENCE

Park HW, Park S, Chong M (2020). Conversations and Medical News Frames on Twitter: Infodemiological Study on COVID-19 in South Korea. *Journal of Medical Internet Research*. Online First. 2020;22(5):e18897 URL: www.jmir.org/2020/5/e18897/.

Social Distancing as a Reactionary Approach to COVID-19 Pandemic: The Comment

Popoola, Ayobami¹, Medayese, Samuel¹, Akogun, Olawale². and Umar, Ojoma³

¹SARChi Inclusive Cities, University of KwaZulu-Natal, South Africa

²University of Ibadan, Nigeria

³Kogi State University, Nigeria

Correspondence: bcoolay22@gmail.com

INTRODUCTION

There are speculations in the media and among people in informal settings that the COVID-19 disease is a “weaponised virus” from a research laboratory in Wuhan, Asia. The depth of the speculation points to the notion that the creation of the virus was a well-planned agenda for territorial and economic control and expansion. Existing documentaries give a varying historical account of the virus many years ago. A development that substantiates the notion that it a global grand plan.

However, since the outbreak of this new strain of virus in Wuhan China in late 2019, the World Health Organisation (WHO) in January 2020 has recognised it as a global threat to humanity. The COVID-19 pandemic currently ravaging cities across the world continues to generate interest from various social, economic and spatial perspectives while at the same time evoking new social behavior. Among such emerging measures that are becoming mandatory and being

enforced across the globe are self-isolation, quarantine, stopping of handshakes, frequent washing of hands, use of facial masks and hand gloves, coughing in elbows, social distancing and city/regional lockdowns. From all these measures, evidence still shows that many of the response measures are reactionary across various countries; with discussions in the social media pointing to China as the only country well prepared for the outbreak of this virus.

THE DILEMMA OF SOCIAL DISTANCING

Of all these reactionary measures put in place, the social distancing and lock-downs remain the two most potent methods of curtailing the ravaging spread of the disease. The current fad according to policy makers across the globe is the concept of *social distancing* as a measure to combat the spread of the scourge within work spaces, streets, markets, vehicles and other public spaces. Social distancing is envisaged as a form of non-physical human contact and restrictive mechanism meant to manage and

prevent continual spread of the virus. Different environments across the world have described their own dimension of social distancing. While some people feel the need to set a distance of an arms-length, others opine that it should be a distance of between 1- to 2-metres. On the other hand, others describe their own social distance in terms of the number of congregants in a location. This has had its own variety in terms of certain climates, the maximum number of persons in a location or group (e.g. ranging from 2 to 50 people).



Figure 1:
Unreferenced Picture of People waiting to collect social grants in South Africa

This then brings to the fore a major question - how much distancing is social enough to ensure safety in this phase of the current pandemic. Despite this proposed 1- or 2-meters, the flight physical distance of the virus from one person to another remains a subject of contention. The pointer reveals that a negative person can be exposed to the COVID-19 virus through touching droplets of sweats or saliva of an infected person on surfaces; consequently, adopting social distancing alone will not be effective to prevent infection. This therefore questions the efficacy of the suggested social distancing. The downside is that, could one lay claim that the optimization of space in the face of the virus is an ineffective approach in the fight against this globally infectious virus?

Isolation and social distancing seem to be measures adopted globally as countries commence shutting down economic activities. A cursory look needs to be beamed at the current infrastructure space to understand if the social distancing concept will work for customers waiting to obtain groceries at the mall, commuters waiting to board public mass transportation, and people queuing to access cash points as these are the accredited congregations approved at this point of the disaster.



Figure 2:
Amateur Picture of People engaging in trading and livelihood activities in Nigeria

COVID-19 AND THE AUTHORS' EXPERIENCE

As researchers, PhD candidates, and complimentary business trader through semi-formal and informal activities and sources, the Coronavirus pandemic has extensively shifted our daily experiences and livelihood organisation. COVID-19 has mostly limited the researchers' movement and mobility around the city and adjoining regional States. This experience has not just limited the physical supply of goods both from the rural farmer to urban customers (as narrated by one of the researchers) but the researchers' have reported the limitation in the access to their social spaces.

For the continuation of PhD researchers, the authors have resulted in tele-studying and communication with the supervisors. The limitation of access to desktop computers has provided within the university space for easy of learning and research has now prompted authors need to purchase a laptop. An experience that is unplanned. Likewise, increase in private internet data use and cost spent on food used as extensively increased since the lockdown. This has resulted in food insecurity-food utilization.

The resultant effects of these experiences have resulted in the authors' nurturing new habits behind the screen as researchers' now maintain social distancing. Likewise, limit in access to choice meals, increase expenses to purchase data for academic activities and quantity to food consumed have reduced as the lockdown continually becomes extended.

CONCLUDING NARRATIVE AND QUESTION

The major import of this scenario and what it brings to mind is to assess if the city is responding effectively in terms of space requirements in relation to this pandemic. It is also pertinent to ask if cities in Africa and especially nations like South Africa (in the face of the distribution of social grants - Figure 1) and Nigeria (in the struggle to stock homes with food in open markets in preparation for a lockdown- Figure 2) are actually designed to the prescribed spatial ergonomics

that ensure convenient spacing for people listed in the various urban spaces above. Another major challenge is how to ensure social distancing in the remote and slum areas with poorly planned neighbourhoods, infrastructure and services. All these should agitate the minds of spatial planners and development experts on the dangers that this pandemic portends for the slum dwellers and what definitions to give social distancing in such locations.

This is a major concern as in student housing in my university remains short down, there for students like the authors have resulted in shared housing off-campus. The effect of this is increased exposure to the disease in an uncontrolled mobility environment.

Issues raised in this article, therefore, put to test planning principles and standards relating to space in the face of prescribed human ergonomics meant to reduce the spreading of the virus. If this is so, should government now think of a way to localize the radicality of their spaces toward the effectiveness of the social distancing response?

The Greek National Documentation Centre - Responding to the COVID-19 Pandemic

**SACHINI EVI, MALLIOU Nena, MANIADAKIS Nikos, MEGAS GEORGE, VASILAKI Varvara,
ANGELIDIS Angelos, KARAMPEKIOS Nikos**

Corresponding Author: Nikos Karampekios (nkarampekios@ekt.gr)

INTRODUCTION

This short paper aims to highlight the actions initiated by the Greek National Documentation Centre (EKT)¹ as a consequence of the COVID-19 pandemic. These actions were taken within the premises of EKT's existing mandate and sought to cover for the lost ground that the ensuing social distancing and lockdown measures had imposed.

EKT is a public, high-calibre national research infrastructure established in 1980. Its mandate is multi-thematic, ranging from being the National Authority of the Hellenic Statistical System for European statistics on Research, Development and Innovation (RDI), to providing services to connect the academic research bodies with innovative and creative businesses to provide access to funding tools, tech transfer and innovation networking. Also, EKT focuses on creating open access infrastructures for users to access rich content, facilitating online publishing and circulation of content from libraries, archives, museums, higher education, research

centres, scientific and cultural bodies, with the aim of highlighting the Greek wealth of knowledge in the Digital Public Space.

Being a public organisation, these activities are geared towards both public and private actors as well the wider public. Ranging from firm-centered services provision for innovation management for businesses to systematically monitoring critical public aspects of RDI (spending and personnel) and the digitalization and open distribution of both publicly and privately-owned cultural content, means that EKT is in a unique position to regularly and systematically enable the interaction between the actors of the "triple helix" in Greece. As Figure 1 indicates, EKT is placed within the knowledge triangle paradigm and enables a multi-modal interaction with both public and private institutions - according to the different operational arrangements - in addition to giving back to the wider public high quality material.

¹ www.ekt.gr/

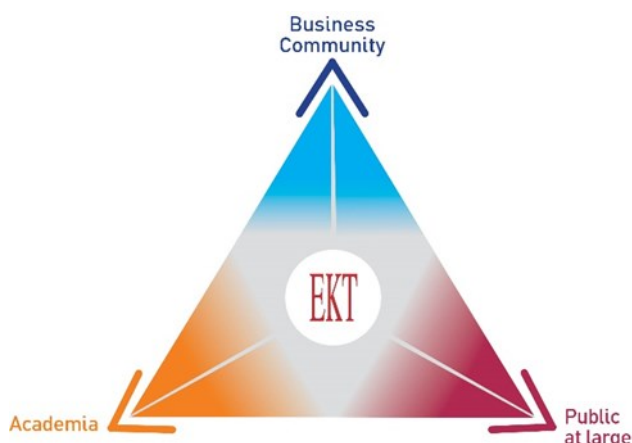


Figure 1: An ideational placement of EKT within a triple helix context

The rapidity of the COVID-19's spread created an altogether different context in which EKT has been called to operate during the period starting from March 2020. The social distancing regulations and lockdown measures introduced to slow down the spread of coronavirus forced EKT to rethink its operating practices ensuring the service provision to its dedicated communities. Responding to the urgency of the situation, EKT decided to offer a range of new services. As opposed to maintaining a conservative approach to “weather out” the storm, EKT sought to find new, meaningful ways to respond to the pandemic. To do so, a binary approach was employed. Best practices from relevant global actors were sought and examined for possible adaptation to the local context. Also, novel initiatives were formulated based on the deep understanding of the domestic academic, entrepreneurial and policy conditions.

In the remainder of this article, these actions are presented.

Information, dissemination towards the wider audiences, public at large

As a knowledge-based organisation, EKT swiftly took action in order to inform the public at large of the COVID-19 pandemic. As such, a dedicated portal² was created on the 20 March 2020, aiming to provide valid information to researchers as well as to citizens interested in enriching her/his knowledge with the most updated information on the scientific research about the COVID-19 pandemic. Specifically, the portal made accessible the latest scientific publications, catalogues, websites, e-learning opportunities. Such a move aimed at putting in the forefront valid scientific

data and research outcomes; offered the public means to shield against pseudo-science and misinformation, and promoted capacity building and innovation activity through enabling further exploitation of the data easily accessible online. Coupled with the decision made by publishers worldwide to open up access to their journals' content/collections, EKT managed to set up an authoritative science information data source that received more than 27.000 visits.

In the same spirit of informing wider audiences, through EKT's Knowledge and Partnership Bridges Initiative,³ there has been an effort to share best international practices and initiatives against the pandemic to a network of more than 2.000 highly educated Greeks worldwide. Towards this, science diaspora interviews with academics and entrepreneurs aimed at highlighting potential contributions against the pandemic either on the psychological consequences of the pandemic⁴ or as a free of charge business application connecting medical personnel to COVID-19 patients⁵, were issued. Moreover, the 3.500+ Facebook Group of the initiative was used as a relay center for EKT's information on a daily basis.

In addition to the above, a number of webinars were held as a further means to disseminate the relevant information. For example:

-“Guiding businesses and professionals through times of Crisis; a practical guide for survival”⁶, was a webinar co-organised by . shared best practices and tools for products and services EKT and Curious Inc., aimed at empowering enterprises and professionals on surviving the pandemic by providing them with practical guidance. Projecting alternative economic scenarios, the webinar focused on the way pandemic influences consumer behavior, how innovation can be used to help a business, and finally best practices for enterprises and professionals were shared.

-“Implementing design thinking to plan our lives”⁷, was a webinar co-organised by EKT and Curious Incdesign. It was explained how these tools and knowledge can help entrepreneurs to organise their business in times of uncertainty. Addressing a hot topic, the webinar engaged more than 13,000 participants.

-“How digitally capable and prepared are we?”⁸ was a webinar organised by EKT in collaboration with the EU Joint Research Centre (JRC). The webinar addressed

² www.ekt.gr/el/covid-19

³ www.knowledgebridges.gr/en, see also: Labrianidis et al (2019)

⁴ www.knowledgebridges.gr/el/stories/714

⁵ www.knowledgebridges.gr/el/stories/715

⁶ www.ekt.gr/el/events/23902

⁷ www.knowledgebridges.gr/el/node/713

⁸ www.ekt.gr/el/news/24256

the issue of 'How digitally competent are we as learners, teachers and educational organisations? Theory and practice'. Research data and tools developed at the JRC were presented. More than 2.200 participants attended the venue. Importantly, the webinar was organised in relevance to EKT's coordinating role in the "National Coalition for Digital Skills and Jobs", aiming to add momentum to the debate on the development of digital skills on the national scale.

Supporting the business and academic environment

- *Actions taken towards enabling the domestic communities of practice to come up with solutions against the pandemic.*

During the first stages of the pandemic in Greece, EKT, took several steps adapting to this fast shifting situation in a manner that safeguarded its institutional role in managing and disseminating knowledge. Specifically, it sought to step up its effort to support its prime partners, companies and research bodies, within an exclusively digital environment.

Firstly, a decision was taken to increase the operational tempo. This choice was made with the aim of decreasing the downsides this, exclusively non-physical, new reality entailed - a reality to which the domestic business community was not entirely accustomed to, it was assumed. As such, teleconferences and webinars became part of EKT's daily routine. This banked on a number of assets. For example, the experience and the reputation of EKT's executives in innovation management and technology transfer, as well as their mentoring capabilities and know-how expertise.

This was coupled with the state-of-the-art datacentre and e-infrastructure. The uninterrupted services' provision and a wide spectrum of digital activities, including a three-digit number of users to receive cloud computing services and access to digital content such as electronic data libraries and online seminars to staff teleworking were of the highest importance in an all-digital environment.

A third parameter to EKT's quick reaction relates to its long experience in health-related projects. Being the National Contact Point for Horizon 2020 on the health sector, this has allowed the organisation to follow significant initiatives. Executing its advisory services, EKT supported the Greek company (EXUS), leader of the one of the most topical European projects - that of "STAMINA".⁹ The project aimed at optimizing the national health planning systems from strategy development up to operational level, to prevent pandemic crises and optimizing the authorities' responses.

In other words, this project is steered towards coping with situations such as the current! Being involved in this and other similar processes add up to EKT's accumulated experience and build its capacities for resilience and effective response to the actual situation.

Within the context of supporting the Health sector, EKT advised and guided more than one hundred researchers, research entities and enterprises that wanted to participate to specific European calls and challenges. Additionally, utilizing its network of associates, EKT initiated a range of COVID-19-related awareness-raising events. Also, capitalized on its decades-long coordination and participation in the Greek node of the Enterprise Europe Network (EEN-Hellas) consortium, one of the most important networking projects worldwide. Given the long-standing communication lines, EKT was in a position to easily channel through COVID-19-related information on programs, partnerships, digital solutions, new technologies, and funding opportunities to the domestic academic and business community.¹⁰

Similarly, EKT being the hub of EIT Health in Greece, offered a range of services to health innovators and the wider community. Given the obvious importance of this initiative in terms of early-response to the pandemic, EKT increased the number of the staff involved in these activities. Being the gateway to all specialized programs in Greece related with the health sector for entrepreneurs, researchers and students, EKT supported thirteen start-ups during the proposing process of the Headstart competition (EIT Health sub-project), which was claiming for mature solutions against COVID-19. Moreover, twenty-five start-ups were encouraged to take part in competitions and accelerators of EIT Health.¹¹ Additionally, EKT responding to EIT Health's call for matching specific needs related to COVID-19 with solutions, posted five matches on the general electronic platform of the program, following an evaluation process. Finally, EKT participated in the co-organization of HelloAIRIS (EIT Health sub-project), targeted at students and graduates, offering training on Artificial Intelligence in healthcare.

- *Co-organising hackathons and other digital initiatives*

With the aim of mobilising the development of innovative solutions against COVID-19, EKT supported a number of hackathon competitions. Based on the realisation that hackathons, due to their high-intensity processes and multi-level support, receiving mentoring from participating academic, business and state bodies, may kick-start COVID-related solutions, EKT took an active role by offering knowledge and allocating resources and tools to the following hackathons:

⁹ <https://cordis.europa.eu/project/id/883441> ('Demonstration of intelligent decision support for pandemic crisis prediction and management within and across European borders')

¹⁰ See: www.ekt.gr/en/news/24012 and <https://aaic2020.b2match.io/>

¹¹ See: www.ekt.gr/el/news/23760

- Ø The 'Antivirus Crowdhackathon'. A remote innovation hackathon organized by (among others) Crowdpolicy and the Region of Attica, it was successfully held from 2 to 5 April 2020, and was attended by more than 250 participants. Teams presented more than seventy new ideas and proposals aimed at tackling the COVID-19 pandemic.
- Ø The 'HackCoronaGreece'. A remote hackathon organized by Dataconomy and Data Natives and partners from the health and technology sector, took place from 7 to 13 April 2020, with the aim of identifying innovative solutions for Greece's National Health System. The hackathon was attended by three hundred participants and fifty-five teams working with the support of mentors for three days to develop their solutions.
- Ø The (still ongoing) initiatives by the Ministry of Digital Governance: a) #COVIDhaikimogisGRG, aiming to explore new innovative solutions to address the needs of the National Health System, and b) 'Rapid Implementation of Mature Solutions', aiming to identify new solutions that have the potential for immediate implementation.
- Ø The #EUvsVirus hackathon, for tackling the COVID-19 pandemic. The first cycle of European competition was held from 24 to 26 April 2020. Of the 2,150 solutions submitted by 20,900 participants, 117 stood out and were invited to participate in the second cycle of "Matchathon". The Ministry of Digital Governance coordinated national hackathons to shape Greece's national participation, entitled #GreeceVsVirus, and resulted in 671 entries (eighth place), with Greek members participating in seven of the 117 teams nominated after the first cycle.

EKT's contribution in the above was multifold:

- Ø EKT actively promoted the initiatives making use of EKT's existing information-diffusion channels (website, Facebook, Twitter, LinkedIn, Newsletters to more than 33.000 recipients) to raise awareness and ensure that a sufficient number of proposals would be submitted.
- Ø EKT's personnel participated in the evaluation process. With their extensive experience in innovation matters stemming from their participation in European R&D projects and actions promoting innovation and entrepreneurship, EKT's staff supported the emergence of promising proposals.
- Ø EKT provided "skills mentoring" to over twenty different proposals to improve their innovation management, product development and market approach. Indeed, one participant in the European hackathon ("Platex-Reusable Face Masks") stood out in the challenge of "Protective equipment" in the "Health & Life" section.

- Ø Moreover, participants were informed:
 - on financial opportunities so as to encourage their participation in European R&D consortia,
 - on networking and international business partnerships' potential through participation in digital European platforms (e.g. EEN's Care and Industry together against CORONA, EEN networking platform, COVID-19 EIT Health connecting innovators)
 - on participating in international hackathons and virtual B2B meetings.

Capacity building activities. Promoting digital, high-quality cultural and educational content.

Having digitised more than 500,000 digital cultural items, of which 320,000 are already online, EKT is a catalyst in the digital transformation of the cultural heritage sector of the country. Also, it is the accredited national cultural content aggregator for Europeana¹², the European portal for cultural heritage that promotes the transformation of cultural institutions. Within this context, EKT has been developing the national cultural heritage online portal "SearchCulture.gr"¹³.

During the pandemic, EKT was swift to roll out a new section of "SearchCulture" named "Thematic exhibitions". Herein, seventeen new digital exhibitions were made accessible. Exhibits of cultural significance were provided from high-profile cultural institutions. The themes ranged from mythological iconography to byzantine jewelry and Olympic Games. The objective was to raise awareness and disseminate high-quality cultural content in an open and accessible manner that due to the lockout would have an even higher impact, given the multiple measures inter alia the social distancing, suspension of the operation of academic institutions, libraries and other cultural organisations. In addition to making it available for potential utilisation and valorisation, this large-scale cultural permeation sought to become a source of inspiration and creativity as well as peace of mind for all citizens during these difficult times - as art and culture should always be.

In this context, EKT's culture-related services for the development of related e-content and the digitisation of the Greek cultural heritage contribute in preserving, promoting as well as facilitating research. Similarly, these digitalised services can be used as input material or inspiration for other innovative initiatives. Importantly, the collaborative manner in which those private sector institutions came forward in offering their content to a public organisation such as EKT with the aim of disseminating the content in a digitalised manner can be seen, in these difficult times, as

¹² <https://pro.europeana.eu/organisation/greek-aggregator-searchculture-gr>

¹³ www.searchculture.gr/

culture democratisation conducive to community engagement and eventually social cohesion. Hence, the response to the initiative has been remarkable considering that there was an increase by 200% in website traffic in April 2020 compared to January 2020 with 15,664 compared to 46,718 unique visitors respectively.

Closely associated is EKT's role as a knowledge management organisation that makes available online educational science-based content. Again, responding to the COVID-19 pandemic, EKT redesigned a new version of its MITIDA (ΜΗΤΙΔΑ)¹⁴ platform. MITIDA is an online learning platform developed by EKT that enables educators to create engaging educational content through the use of contemporary online collaborative tools and open content from EKT's resources, repositories and databases. Its objective is to support collaborative work among the educational communities of Greece.

Given the urgent need for digital education content for all levels of education as a means to counter the social distancing measures concerning schooling and academic activities, EKT moved quickly to upscale MITIDA. By providing access to a contemporary toolbox and open educational resources, it enabled 'lockdowned' educators and organisations to create their own digital interactive educational content. Specifically, the platform offered tools and content based on valid scientific data and research outcomes for the production of digital educational material, including creation of e-classes that favor a versatile and experiential approach of knowledge as well as resilient and active learning; creation of thematic maps that propose an attractive and user friendly geographical navigation; creation of learning scenarios which promote the interdisciplinarity and creative use of the internet; and participation in working groups and collaboration teams. The effort was endorsed by the educational community which was translated in an increase by over 300% of the unique visitors in April 2020 compared to the traffic of January of the same year (1.003 visitors in Jan. 2020 to 4.727 April 2020).

Exploring the influence of the pandemic on the activity of Greek researchers

Standing on EKT's role on producing RDI statistics and more specifically concerning the highly educated human capital, understanding COVID-19's impact on the research activity and personal life of the domestic research base was the objective of a very recent, nation-wide survey. An electronic questionnaire was sent to 4,557 researchers addressing several topics. For example, it sought to understand the extent to which social distancing had affected their capacity to perform research activities, the psychological state as well as their family environment and

the manner in which the COVID-19 pandemic is being received by the researchers themselves. That is, is it being viewed exclusively as a situation of crisis or as a situation that presents itself also as an opportunity?

With a response rate of 51%, it is one of the largest studies on the topic globally. A report is already authored and a follow up academic publication is in the workings¹⁵. Importantly, the findings have been taken into consideration by policy makers for shaping the appropriate science and technology public policy measures.

Conclusion-take away messages

As Figure 2 indicates, EKT's actual initiatives towards both public and private actors and the wider public fit well within the "triple helix" model.

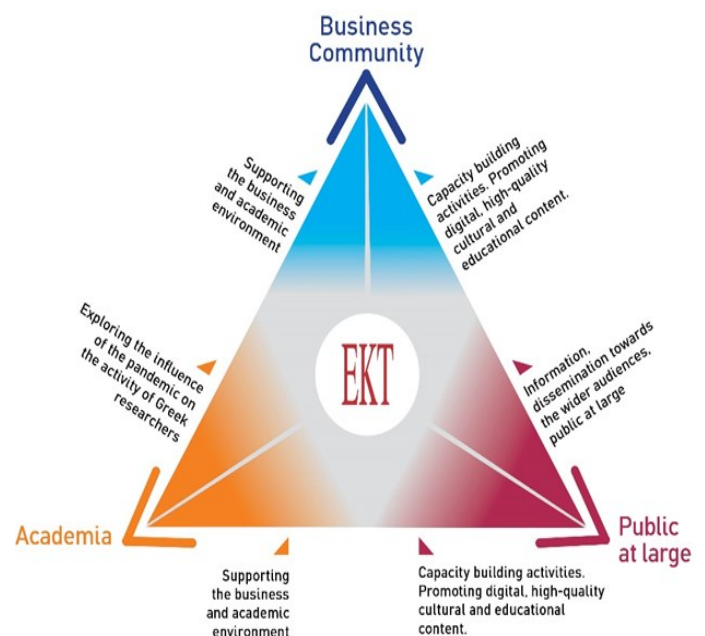


Figure 2:
Actual placement of EKT with triple helix actors in Greece during COVID-19

Undoubtedly, the pandemic is a crisis situation. To cope with this situation, EKT implemented a set of measures. Firstly, it was quick to realise the systemic changes ahead and, thus, allowed for attentive forward planning. This presented an opportunity window to set things in order before moving to an all-digital operational tempo. Secondly, EKT adopted a pro-active approach and sped to offer more services and enrich existing ones to key stakeholders, including the research community and private sector, but also to the wider society and individual citizens. As such, EKT increased its participation and look-out on relevant global and European initiatives. Also, operating for four

¹⁴ www.mitida.gr

¹⁵ <https://metrics.ekt.gr/publications/402>, including a Research Note in eng

decades in Greece, EKT certainly has a profound understanding of the country's idiosyncrasies and culture, and has established strong relations with key local stakeholders, that both contributed to offering "tailor-made" services to local communities fully aligned within the local context and more importantly to create synergies and implement activities with high impact. This increased and topical information flow coupled with its high-quality human capital and the uninterrupted operation of its e-infrastructure allowed EKT to fulfil its institutional mandate.

REFERENCE

Labrianidis L. Sachini E. Karampekios N. (2019). Establishing a Greek Diaspora Knowledge Network through "Knowledge and Partnership Bridges". *Science and Diplomacy*, 8(1), American Association for the Advancement of Science, www.sciencediplomacy.org/article/2019/establishing-greek-diaspora-knowledge-network-through-knowledge-and-partnership-bridges.

PUBLICATIONS

Triple Helix Journal

Editor-in-Chief

Henry Etzkowitz, *International Triple Helix Institute (ITHI), USA and Helix Centre, Linköping University, Sweden*

Managing Editor

Anne Rocha Perazzo, *Ecole des Hautes Etudes en Sciences Sociales, Paris, France*

Advisory Editors

Carlota Perez, *Technological University of Tallinn, Estonia*

Hebe Vessuri, *Venezuelan Institute of Scientific Research, Venezuela*

Senior Associate Editor

Christiane Gebhardt, *Malik Management Institute, Switzerland / associated Heidelberg University, Germany*

Associate Editors

Yuzhuo Cai, *University of Tampere, Finland*

Devrim Göktepe-Hultén, *University of Lund, Sweden*

Annamaria Inzelt, *IKU Innovation Research Center Hungary*

Riccardo Viale, *Fondazione Rosselli, Italy*

Girma Zawdie, *Strathclyde University*

Alice Chunyan Zhou, *International Triple Helix Institute, China*

Editorial Board

Justin Axelberg, *University of Sao Paulo*

Irina Dezhina, *Institute of International Relations and World Economy, Russia*

James Dzisah, *University of Ghana*

Loet Leydesdorff, *University of Amsterdam, the Netherlands*

Liudvika Leysite, *Dortmund University*

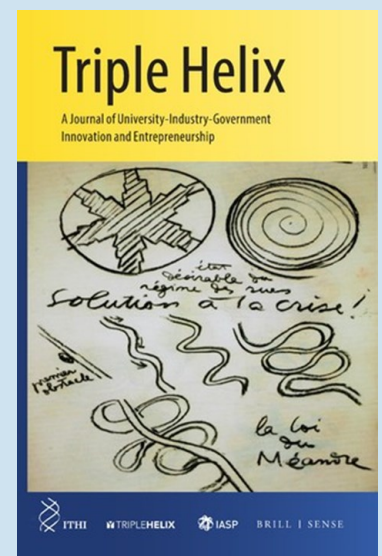
Josep Piqué, *International Association of Science Parks and Areas of Innovation (IASP)*

Ary Plonski, *University of São Paulo, Brazil*

Tatiana Pospelova, *Moscow State University, Russia*

Jarunee Wonglimpiyarat, *Thammasat University*

Girma Zawdie, *University of Strathclyde, UK*



ISSN: 2197-1927
(electronic version)
<https://brill.com/>

A study about the TH in Germany: Henriette Ruhrmann, Smart Specialization Strategies at National, Regional, or Local Levels? Synergy and Policy-making in German Systems of Innovation, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3577495 (under submission)

Elaboration of the TH Indicator: Loet Leydesdorff and Inga Ivanova, The Measurement of "Interdisciplinarity" and "Synergy" in Scientific and Extra-Scientific Collaborations, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3560339 (under submission)

Special Issue on Science, technology and eco-innovation diffusion for sustainable management of natural resources, *African Journal of Science, Technology, Innovation and Development*, AJSTID Vol 12, no 3, www.tandfonline.com/toc/rajs20/current

WEBINAR SERIES

UPCOMING

Special COVID-19 Webinar Series

THE POWER OF STORY IN A WORLD ON FIRE: REFLECTIONS ON THE TRANSFORMATIONAL POWER OF NARRATIVES

5 June 2020 :: 6 pm CEST



Speaker:
GUIDO PALAZZO
Professor of Business Ethics at HEC
University of Lausanne
Switzerland

Objective of the Webinar

Drafting ideas for a narrative analysis of the ecological crisis and potential solutions.

How do societies change? While this question might have been interesting only for historians in the past, the ecological crisis has made it one of the most urgent questions to answer. In fact, it might be that the survival of humankind as such depends on finding the right answers. The Enlightenment had established the firm belief that humanity advances through an individual (Kant), or societal (Hegel) learning process based on reason.

At the beginning of the twenty-first century, this belief turns out to be overly optimistic. Reason is under pressure on various frontlines: postmodern philosophy has deconstructed the idea of truth and the climate emergency has demonstrated the motivational limits of abstract reason (s). Scientists pile up study over study on the emergency of climate action and assume that people (and societies in general) react to these new environmental conditions and adapt their behavior and processes.

However, most people simply don't care. Established routines of production and consumption do not only not change, they even keep accelerating the crisis: half of the CO₂ that humankind ever produced, was emitted after Al Gore's first book on the environmental crisis over only the last thirty years. How do societies change? How can we actively transform them towards economic practices that are better aligned with the limits of the planet? I will investigate one path that since Plato already has been systematically devaluated: societies follow narratives, not reason. Those narratives include the values and beliefs that guide behavior unconsciously. If we want to transform society, we have to understand our current (eroding) narrative and examine, how we can create a new vision based on a new set of values and beliefs.

Going back to the work of Alexander von Humboldt's on nature and Wilhelm von Humboldt's work on language, I will propose a potential direction for a new narrative.

LEARNING FROM CRISES: TOWARDS INCLUSIVE AND SUSTAINABLE CITIES

22 June 2020 :: 6 pm CEST



Speaker:

DR HARIS PIPLAS

Author and collaborator of several urban, landscape and architectural projects Germany, Switzerland, Denmark, Morocco, Eastern and Western Europe, Latin and other regions of America, China

Objective of the Webinar

Discussing the spatial impact of socio-economic segregation and environmental and health crises in the era of the “Urban Planet”.

In the twenty-first century, the cities of the “Urban Planet” peaked in ecologic and economic damage initiated by industrialization and modernization.

At the same time, cities are the hotspots of political power and intellectual thinking. The question arises: can spatially operating professions give answers to crucial societal issues such as pandemics, economic crises, political populism, social segregation and climate change?

How can the collaboration with real-world stakeholders: citizens, academics, experts, media, governmental and non-governmental organizations be enhanced? How to convert social, human, and ecological challenges into potentials towards creating innovative and resilient urban strategies? What have we learned new from the COVID-19 crisis?

The first step critical observation of the actions, processes, and policies are necessary to perceive the diversity and instability as a necessity for a holistic understanding of forces that have shaped the contemporary city. This includes the influence of political, cultural and societal forces on their physical and programmatic transformation. This type of applied research reveals the basis to examine the complexity of urban mechanisms, the interrelations with actors and

protagonists that are often insufficiently understood or represented through qualitative and quantitative methods.

These findings form a basis for strategic tools and scenario-based proposals to produce spaces of inclusion, safety, coexistence and interaction. Micro-stories from “urban laboratories“ in the Rust Belt, China, South Africa, Balkans, China, Eastern and Southern Europe, Latin America, among others, will offer a glimpse into the possibilities to derive, extract and explain fundamental societal and, therefore, urban transformation processes in the mission to realize integrated, cross-sectorial and multidisciplinary urban solutions.

THE THEORY-PRACTICE DEBATE ON NEW INDUSTRIAL / INNOVATION POLICIES, PLACE-BASED SMART SPECIALISATION STRATEGIES, AND LOCAL ACTORS

30 June 2020 :: 6pm CEST



Speaker:
SLAVO RADOSEVIC
Professor of Industry and Innovation Studies
University College London



Speaker:
FRANCISCO JAIME QUESADO
Economist specialist in Innovation and Competitiveness

Following our previous webinar on Innovative Place-Based Triple Helix Approaches for Regional Development through Smart Specialisation Strategies, and the international workshop that took place in London on the 28-29 June 2019, we have now recalled some of the high level participants to reflect on the new developments and the outcomes from the discussions. Professor Slavo Radosevic (UCL), and Mr Francisco Jaime Quesado (Oporto, Portugal,) will share their insights from the discussions and will present their viewpoints on the design and implementation challenges for the New industrial / innovation policies in Europe, how these policy mixes address the current phase of implementation of Smart Specialisation Strategies in regions, and how the Triple Helix actors are involved in the process of building competences and trust.

Background information on these issues and discussion topics can be obtained from the presentations by Jan Larosse, former policy adviser of the Flemish Government for innovation and industrial policies, and Richard Tuffs, former Director of the ERRIN network - at the previous

webinar, or from the presentations at the workshop, which can be obtained in full length at: www.triplehelixassociation.org/june2019workshop/.

Objective of the Webinar

The objectives of this webinar are to review the current theoretical thinking and Triple Helix Practices supporting industrial and innovation policy, smart specialization strategies, cluster development, or national and regional response to the challenges for economic growth.

Among the questions that speakers will address are:

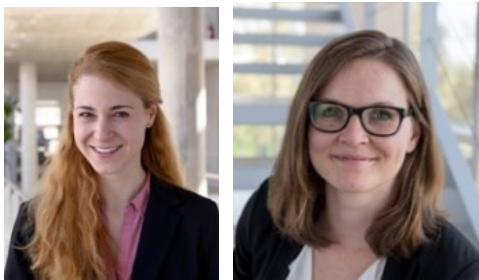
- What are the pre-requisites to employ a system approach and to design a system response for crisis management and strategic development?
- What is the role of building coalitions and establishing a multi-stakeholder governance?
- How to pivot along the long-term challenges and short-term reactions for employment, innovation and growth?

To register **free of charge** for the above webinars go to the registration form <https://docs.google.com/forms/d/e/1FAIpQLSdRPUKWa8YqKamlqgMS0iyqe0sI1utvyukmajQVPJZ2vztbBw/viewform>

DELIVERED WEBINAR

BUILDING RESILIENCE IN GERMAN CITIES: IMPROVING GOVERNANCE, MITIGATING RISK

Delivered on 18 May 2020



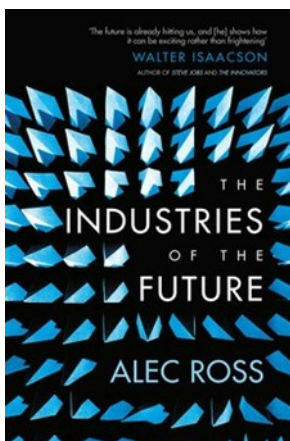
Speakers:

NATALIE PFAU-WELLER AND REBECCA NELL

Researchers at the Fraunhofer Institute

Go to the video recording at www.triplehelixassociation.org/tha-repository/webinar-building-resilience-in-german-cities-improving-governance-mitigating-risk-18th-may-2020-6-pm-cest

BOOK REVIEW



THE INDUSTRIES OF THE FUTURE

By Alec Ross

Simon and Schuster, 1230 Avenue of the Americas, New York, NY 10020, ISBN 978-1-4767-5367-6 (ebook)

Book Review written by

Aurea Paes; Roberta Viegas, Branca Terra and Deborah Pavetits Barreto from Rio de Janeiro University

“The Industries of the Future” was published in 2016 by an innovation specialist, Alec Ross. It explains, in a peculiar way, which industries are going to be the driving forces in the next twenty years of economic and society changes. The chapters are structured around the future key industries (robotics, life sciences, money codification, cybersecurity and big data, like those in geopolitical, cultural and generational contexts).

The author also makes a brief reflection about “adapt or perish, now as ever, is nature’s inexorable imperative”, mapping the advances and the obstacles that will occur in the next ten years - the governments and the global community - and how can we navigate in them. Quotes that the next economy highlights the next innovation and globalization wave, which will affect the countries, the society, the environment in

which they are a part of and even the individual that already is suitable to grow in the old economy, but comes registering experiences faced with wars, new competitions and ways of survival.

The author reports about “The Right Side of Globalization”, how innovation has challenged people’s lives and how a rich generation changes the world fundamentally.

In the Chapter 1, entitled “Here come the Robots”, reports a new employee’s and caregiver’s perspectives about the technological advancements. It emphasizes that societies transform themselves when human beings learn to live together with robots. It affirms that robots pictured in movies and animations in the 1960 and 1970 decades will be turned into the reality of 2020. Through technological advancements, the author reports that rival Japanese companies, Toyota and Honda, with their experience in mechanical engineering to invent the next robots generation, will create machines that can accomplish a series of assignments that, for example, could help the patient get out of bed, even throughout a conversation. However, the challenges remain. On the technical side, it continues to be hard to project robots capable of developing intimate activities, like bathing patients or brushing teeth. And the majority of Japanese companies that are developing these robots are specialized in industrial motors and electronic automation. They did not enter in the care field, with a comprehension of how to forge an emotional connection, a crucial aspect of caring for elders, that with the population ageing turns into an essential creation. The robots are going to be a rare technology that reached the elderly users in the first place, spreading out when the grandmother shows your next cutting-edge electronics to children and grandsons.

Chapter 2, titled “The Future of the Human Machine”, informs that industries discoveries were built from codes and next will be through genetic codes. Also registers studies and specialized researches that sequenced the entire human genome to unravel the base of three billion pairs that make up our DNA and decode who we are, on a molecular level where one day, doctors will understand better why and how cancer grows. It will take about twenty to thirty years to find out, but this revolutionary

possibility was boosted in January 2015, by a major US investment. However, in the genome field, it is expanding far beyond cancer prevention and treatment, as more researchers and investors question about the brain and its representation, what is a group of soft tissue protected from the exterior world by a hard skull. What the scientists and the researchers evaluated this smoothness that the brain presents and thinks more and more in similar terms to machines for diagnostics and treatments. Scientists now want to crack the brain code and start leveraging genomes to diagnose and treat neurological and mental illnesses. It is believed that the world can improve by big leaps as far as better medicines are developed. Unintended consequences are deeper measures and approaches studied by experts from several countries in which innovations continue at full throttle.

Chapter 3, denominated “The Codification of Money, Markets and Trust” analyses the forms of currency trading that are forcing a rewrite between the corporation, the citizen and the government, in which the modern financial system has created a series of conveniences, which allows us to move away from money, which in the past was necessary. Since then, with robotics and science, changes have come quickly. Online banking started to take off in the mid-1990s. The eBay consumer market was launched in 1995. PayPal’s online payment service was established in 1999. Today, digital banking has become almost universal, as an actor in economic development. Also, the mobile bank, with a constant presence in cell phones, among other advances. Genomes will be decoded over the next twenty years, our money will be encoded and divided, through cryptographic tools, and we are still beginning to discover the possibilities that digital currency will open up for humanity. To understand the implications of encoded money, the author went to speak with a visionary CEO of Square and Titter, who is deeply attuned to

the way we use our money. He pointed out the latest trends and the most ambitious ideas in the world of technology and reports that Square and its competitors are trying to reduce friction in the market. He believes Square is part of a larger trend that will redirect the economy towards upward innovation. This is a dynamic explored in this Chapter that examines the shared economy. Square adds to this local economy new capabilities for trading existing technologies and shows the power of distribution and distributed technologies, even in markets where innovations like eBay and PayPal have had a significant impact, creating the first wave of codified markets.

The Kenya program M-Pesa is an excellent example of these new technologies that show the increase of the power of encoded money and a safe market process, once M-Pesa verifies each transaction and maintains the money in an Actos Commercial Bank account, like a bill payment system. In another program, M-Pesa works with Western Union, allowing forty-five countries to join the network M-Pesa, which facilitates the international transactions that subject the money encoding to a financing change. Besides the greater efficiency, one of the other principle effects of encoded money, is the confidence increase and corruption decrease. The codification of money, payments and markets also had to discover how to encode the confidence when it comes to coded trust, being that eBay offered the first great advance. The next step ahead in coded trust and in markets resides in the so-called shared economy. The author thinks the shared economy as a way to make a market of anything and a microentrepreneur of anyone, and this economy uses a combination of platforms of technology, coded wrapped markets, like eBay and Airbnb, simultaneously it concentrates and increases the market. With the coded markets available to smaller sellers, emerged a trend that gets away from the economical

transactions of physical or on-line stores. That is how the market is dispersed currently. The shared economy and other digital disintermediation will be forced to be rewritten between corporations, citizens and governments. This brings the frontier economies to the global playing field, while they destroy the intermediaries and the traditional authorities.

Chapter 4, "The Weaponization of Code", quotes that the world has left the Cold War to enter in a Code War. In five years, whichever advice without cybernetic experience will be noticed like a failure in corporate governance. The code table created a conflict domain without extensive rules. Currently, exists three main types of cybernetic attacks, those with relation to confidentiality, to availability, and network integrity. The attacks that compromises the confidentiality has as an objective to steal or to release secured information, like credit cards or social security numbers of a determined system, in an illegal or unauthorized manner. A Target seller was a victim of confidentiality attack during the 2013 holidays. The hackers accessed Target's payment system and managed to steal debit and credit card numbers of more than forty million clients. By inserting malicious software into Targets system, the hackers were able to register and when customers activated the card, the system sent the information to the hackers. In addition, the hackers stole personal information - names, phone numbers, e-mail addresses and physical addresses - from around seventy million customers. The hackers were never captured, and Target suffered dearly by the data violation. Their profit fell 46% in the fourth trimester in 2013, in relation to the same period in 2012. The company still can face a loss of up to US \$420 million in legal taxes, credit monitoring for clients and payments to reimburse bank cards.

The second type of cyberattack covers the network availability, typically

known as Denial of Service (DoS) or Distributed Denial of Service (DDoS) attacks. The DoS attacks seek to drop a network flooding it with a huge amount of requests that make the site inoperable. The DDoS attacks are exactly the same, except that the intruder implements various attack systems. The DDoS attacks seem to use a lot of attackers (potentially hundreds of thousands) that turns them almost impossible to distinguish between the attacker's path and the legitimate path. This type of attack can also use kidnapped systems to cloak your origins. Thousands of computers can be kidnapped by hackers and coordinated to attack together which is known as botnet. The botnet targets are generally big corporations or governments.

As the internet grows, it is expanding not only for new users, but to entirely new devices, far beyond standard computers, tablets and smartphones. As a result, the stage is now configured for what has become known as the "Internet of Things", where any object has the potential to transmit and receive data. With connected homes, today's smart thieves can enter a smart home network and monitor when people are at home. If there is a security system, they can turn it off. Simplified systems, which make everyday life easier, can be put in the wrong hands, also used to make life even worse. Businesses and governments are now reducing damage and costs, directing more resources to their own defense.

Over the twenty years from 2000 to 2020, the cybersecurity market will grow from a \$3.5 billion market employing a few thousand people working in its departments, to a \$175 billion market, a critical structure for almost all types of businesses, large or small. All democratic governments need to recruit the right people and promote a close relationship between the public and private sectors to protect themselves from the main threats. Some nations are already

creating rules, which need to be respected, but there are still great distances between interested people. If international standards and treaties are not in agreement, establishing definitions and limits for cyber-conflict, a cyber war can be stuck between one country and a company or between two countries. This confusion of lines questions the role of the government and its responsibility to protect its citizens and corporations. Today, in theory, all countries can have cyber weapons. Security must be a public good managed by the government, not a private good bought on the market.

In Chapter 5, titled "Data: The Raw Material of the Information Age", the author quotes that the land was the raw material of the agricultural age, iron was the raw material of the industrial age, and data is the raw material of the information age. When today's children leave their homes, they are in constant contact with their parents and friends over the phone and text messages, and they are leaving digital footprints on social media. They are small beacons of data production and consumption. Many private companies collect and sell this information. These large amounts of data can be used to understand, analyze and provide trends in real time. In ten years, the data can make a small earphone on a machine that whispers what is being said in its native language, almost at the same time as the foreign language is spoken. The delay time will be at the speed of sound. Automatic translation will accelerate globalization on a large scale. While the current stage of globalization has been driven in part by the adoption of English as lingua franca for business, the next wave of globalization will open up communication by removing the need for a language shared between negotiators. Nowadays, when Korean-speaking businessman talk to Mandarin-speaking executives at a conference in Brazil, they speak in English. In the future, there will be no

more need, opening doors for non-English speakers in the world of global business.

Automatic translation will also lead to markets that are seen as language barriers, difficult to navigate and make them more accessible. Even more impressive, however, is the role that big data can help significantly reduce hunger, probably the biggest challenge for humanity. The promise of cultivating with accuracy is that it will gather and evaluate a wealth of data, in real time, about facts such as climate, water, and nitrogen levels, air quality and disease. The sensors will align the field and feed dozens of data forms into the cloud. This data will be combined with GPS data and weather models. With this information collected and evaluated, the algorithms can generate an accurate set of instructions for the farmer on what to do, when and where. Wall Street took advantage of big data, as much as any industry of the approximately seven billion shares that are traded on the US stock markets every day, countless are traded using pre-programmed computer algorithms that stimulate stock price, time and quantity data, to maximize earnings and minimize risks. The next big data impact in the finance world will be on retail banking, the area where ordinary people are customers, unlike investment banks or commercial banks that focus on serving companies. Technology entrepreneurs are betting that the big data revolution will open up opportunities for advances in finance far beyond payments.

Zac Townsend, 29, co-founded Standard Treasury, a startup, recently bought by Silicon Valley Bank, which was created to discover how technology can help banks better interact with their customers. Zac Townsend says, "I think we are entering an era in Silicon Valley, where people are tackling big, fleshly problems. This is largely due to the excellent data. The rise of important data has awakened the world to privacy as a public policy problem. In response, many European

governments have established strong privacy regulations. But restricting access to data in tomorrow's economy is similar to regulating land use during the agricultural era, or regulating what factory owners could build during industrialization. These countries have double bond: for regulation to serve the public interest, it must be sufficient to protect individual and community rights, but not so much as to eliminate investment and economic growth. The fact is that there is no way to stop data collection significantly, but perhaps we should focus on retention and proper use of data. The choices that we make about how we manage data will be just as important as decisions about how to manage land during the agricultural era and how to manage an industry during the industrial era. We have a short time span - just a few years - before a set of established standards is almost impossible to reverse. Fortunately, humans will take responsibility for making these decisions and will not leave them on machines".

Chapter 6, called "The Geography of Future Markets", mentions that through the industries of the future, new opportunities for countries and people will depend on the knowledge of the domain. The geographical focus for innovation are almost always cities. They allow ideas, labor, and capital to flow quickly and efficiently. Rarely do countries and societies have the opportunity to make a choice: whether they are open or closed. But it did happen after the dissolution of the Soviet Union and the reestablished independence of Estonia and Belarus. Estonia and Belarus were in almost the same position after the independence and made opposite decisions about their future. When Estonia opened, Belarus closed. After Estonia's independence with the collapse of the Soviet Union, its economy was abandoned. Currency was stripped of any value. The stores were empty, and the food was rationed. The gas storage was so bad that the government planned to leave the capital of Tallinn in the countryside. The industrial

production fell in 1992 by more than 30%, a greater decline than America suffered during the Great Depression. Inflation has increased to more than 1,000%, and fuel costs increased by 10,000%.

Mart Laar was elected the first minister of Estonia in 1992 and his first step was stabilizing the economy, which went from 1,000% in 1992, to 29% in 1995. The second step was to open its doors to the world economy. He reduced the trade rates and closed all export restrictions, turning the small country into a commercial center. The government reached out to foreign investors. The citizenship law was changed to provide equal civil protection to resident foreigners. They changed the laws to ensure that foreigners could buy land, ensuring a level playing field for new investors.

All the schools in Estonia were online in 1998, and in 2000 the Internet access was legally sacred as a human right by the parliament. Estonia quickly became a global investment center. The result is that Estonia has achieved a much higher standard of living than it did twenty years ago. Its Gross Domestic Product (GDP), of more than US \$25,000 per capita is fifteen times what it was in the fall of the Soviet Union, and today it is number one among the fifteen former Soviet republics. Estonia has become one of the main centers of innovation in the world. In doing so, he improved his civic and political life and placed himself as a place in the world for the industries of the future.

Belarus maintained a tightly controlled political and economic system. Its dissidents are silenced, and the press is well controlled. Most companies are state-owned, and production and employment are subject to strict administrative controls. About 40% of the industries and more than 60% of agricultural companies incur losses. Belarus is still a land that produces virtually no data. It is a remnant nation from the 1970s, with typewriters still in use in a large

percentage of companies and government offices.

In Africa, we can find the same differences between Congo and Rwanda. Two decades after the brutal genocide of 1994, where more than 800 thousand people were murdered, Rwanda has modernized and rebuilt itself with a knowledge-based economy. While in Congo there is chaos, bombed roads and hundreds of armed men and bribes. When crossing the hills of western Rwanda, can be observed fiber spools to provide a better fiber optic network than the one being used in a large part of the rural United States. Rwanda now connects all thirty districts with 1,000 miles of fiber, allowing a small country in central Africa to connect to the world and open up a possibility of exchanging high-tech commodities. If you look at the math, the strategy worked. Between 2001 and 2013, real GDP growth was 8% per year and poverty decreased substantially. Unlike many other economies, where inequality has increased, despite general economic growth, Rwanda's inequality has decreased over the past fifteen years. It is clear that countries that choose more open systems, and can maintain them, will be the places where future industries and companies will be founded, financed, and sold to the market. Some are adapting in brilliant and innovative ways, while others are languishing and are unable to perceive the alternative winds of the global economy.

The cities that are advancing in the global economy are the most open to the outside world. Cities that have historically been opened to the world are linked by a culture that welcomes people from all corners of the world and encourages the free circulation of ideas and goods, to make them attractive places to live and work. In fact, internet technology allows people to be anywhere and operate a successful business. To be successful in the next wave of globalization and innovation, a society must be open to exchanging new ideas, conducting

research free from political interference and pursuing creative projects, even if they fail.

Take the example of Maria Umar, from Waziristan in northwest Pakistan, on the border with Afghanistan. Maria found a platform and started applying for jobs. Two years after taking on her first independent job, Maria's business grew and she started putting more and more Pakistani women working for American clients, because she couldn't handle so much demand. Women are half of each country's workforce - or potential workforce. Countries that are not considering the gender gap are competitive. The nations that empower women collect the benefits. In China, women were encouraged to start small businesses in their neighborhoods and homes. At the factories, they received wages almost equal to men, as well as childcare benefits and flexible hours. The progress of women in Chinese society over the decades is one of the main reasons why China is the economic power recognized today. A quarter of urban women go to college, where they outnumber their male counterparts. In 2013, China led the world in the percentage of women in high-level positions - 51%. Half of the world's richest female billionaires live in China.

On the other hand, the role of women in business in Japan has contributed to its stagnation. In the years after college, Japan decreased the female workforce. After women have their first child, 70% stops working for at least a decade, and many never return to the workforce. Japanese women are less than 14% of university researchers, and 19% of doctors. The numbers are not better in government, with Japan ranking 123 out of 189 countries where gender diversity is observed. Among executive level managers, only 1% are women. Among the barriers is the fact that older Japanese men, with their traditional views of women, continue to dominate positions of

power. They think that women are mainly caregivers and it is these men who make hiring and promotion decisions. A second necessary condition for societies to compete and succeed in the industries of the future is to have young people, whose ideas are financed. The combination of a younger population, fast-growing economy and rapid technology adoption is creating a dynamic mechanism for the private sector investments. Future growth depends on empowering people.

In Conclusion, the author mentions that if big data, genomics, money codification, cybersecurity and robotics are among the high growth industries of the future, the people who will make a living in these industries need to be fluent in the coding languages, be willing and able to investigate on today's borders, to create many of tomorrow's big businesses. These are people who will see opportunities first and have the skills and relationships to take advantage of those opportunities. Ironically, in an increasingly virtual world, it has never been more important to have as many ink marks in your passport as possible. Language learning programs are available online and are almost as good as what you can get from a private tutor. A great lesson that needs to be learned is that multicultural fluency is increasingly important in a globally growing business world. Other thinkers and specialists also emphasize the need for a different set of skills: many believe that today the children must become fluent in a technical, programming or scientific language. Languages will be a really important way to facilitate the comprehension of the word.

The increase in economic diversity and the increasing pace of change mean that global investors and entrepreneurs will have to be as mobile and able to work across cultures, due to the people who have recently entered the workforce. The innovation and creation of companies that are now starting to take place in robotics, genomics, cyberspace,

extensive data and new fields will be possible thanks to the encoding of money, markets, trust which will emerge from alpha cities around the world. These will be places that business leaders have never visited. The rise of the internet economy has taught business leaders that very young people who have grown up in the digital age are likely to be the ones who will create large Internet companies.

This book tells us about the five fields which will conduct the next twenty years of change to our economies and societies. It also shows the skills that will be fundamental to our young people and children, so that they can follow the changes in industries around the world and, mainly, think about innovations. Perhaps the most important is the absence of prejudice, so that they can absorb different

cultures in order to be able to see the different realities, which will make them imagine innovation businesses that could impact the planet.

**Aurea Paes; Roberta Viegas,
Branca Terra and
Deborah Pavetits Barreto
Rio de Janeiro University**

YOUNG PROFESSIONALS

For this issue, our Young Professionals Editor, Tatiana Pospolova, has a conversation with Elena Vaganova, a Consultant at the Department of Support and Coordination of International Scientific Projects in the Ministry of Science and Higher Education of the Russian Federation.

Greetings, dear reader!

Tell about yourself! What's your story?

I was born in Siberia and grew up in Tomsk in a family of doctors. In my childhood I was dreaming a lot about travelling and was eager to learn foreign languages. My desire to communicate first brought me to China, then to the academic world of Tomsk State University. Since 2019, I have been a consultant of the Department of Support and Coordination of International Scientific Projects at the Ministry of Science and Higher Education of the Russian Federation.

How did you get the position at the Ministry, and how long had you been hunting a position?

Honestly, working for the state had never been my dream! Partly because I was convinced it was not achievable without the right friends in the right places. I'm glad to admit I was mistaken.

My academic career began in Tomsk, where I happened to be a member of a research group of the international collaborative study focused on problems of long-term forecasting of world economic development. After the project was completed, I was offered a position as a lecturer and a researcher of the Faculty of Innovative Technologies at National Research Tomsk State University. I was honored to work together with the professionals from the academic world.

During those years I delivered lectures for students, conducted research, represented the university at national and international events (the Triple Helix Conference included), published research findings in scientific journals, managed projects with the R&D company affiliated with the university, and was a team member of conference organizing committees. That was a period of my professional growth.

After eight years of full time teaching, I made a decision to expand my horizons and moved to Moscow. Once I arrived I kept telling all my friends and colleagues, including the participants of scientific events back in Tomsk about my job hunt.

In Moscow I realized what a unique institution with a worldwide reputation Tomsk State University is. It turned out that a lot of people here were aware of Tomsk as the center of science, education and culture in the Asian part of Russia.

Thus one of the job offers brought me to the Ministry, and I decided to grab the opportunity and try!

(l) *Tatiana Pospelova*
(r) *Elena Vaganova*



Sounds interesting. After many years of stable work in the academic field you have chosen a different area of expertise. What does that feel like change the focus of your career completely? It's exactly the Triple Helix Spirit!

Many people believe that if they've invested their resources in a certain area, shifting to a new field means starting from scratch. I see it differently. Making a change simply means applying your knowledge and experience to a new area and filling in the gaps as needed. I guess each transition made me more skillful in building networking between the business, academic worlds and government worlds.

What are the main challenges in work for state?

First of all, respect for the chain-of-command is essential for such an organization as a Ministry. For me managing my personal emotions is the trickiest part of work. Teaching and business are a lot more easy-going.

Although many of the myths about public service can be debunked, the turtle-like pace of government bureaucracy is not one of them. Bureaucracy doesn't only frustrate citizens. It also plagues government employees who want to get things done quickly. All decisions must go through formal approval process.

Government work often involves teams of people who bring different strengths to a project. If you can get along with everyone, you'll make projects more successful and your colleagues happier. A networking skill is the backbone of working in public service. My ability to communicate clearly with other people is crucial.

My Chinese language skill is also needed for monitoring international events of BRICS and the Shanghai Cooperation Organization.

My overseas background, in China in particular, certainly helps me in my current job as I'm in charge of management of international affairs.

You worked in China. That must have been an exciting experience?

I graduated from the Faculty of Foreign Languages. After the graduation I got a job offer from an educational center in China. I signed a one year contract and moved to Shenyang to teach English. During that year I made some money to cover the tuition fees at the Language School of International Exchange of Northeastern University I could focus on my studies.

When my spoken Chinese was good enough to communicate with people I moved to Beijing, where I worked as an interpreter at the international trade fairs. After a couple of years of being a freelancer, I found a job and worked for an export company and was in charge of communication between the Beijing and Moscow representative offices. In total I spent six years in China. Although it wasn't simple sometimes it was an amazing time. I feel grateful for the opportunity to meet people from around the world.

What's the most exciting professional experience you had in China?

One of the exciting professional experiences in China was

working as an interpreter for the Russian Wrestling Federation during the Olympic Games in Beijing in 2008. It was my first time to work side by side with sports stars and other celebrities, who I had seen on TV.

Besides, I appreciated a lot of that period for the opportunity to visit a lot of businesses including manufactures around China.

How do you see the main difference between the realization of the Triple Helix in Russia and China?

The image of the entrepreneur in China is traditionally much stronger than in Russia.

If we ask children in China «What are you going to do when you grow up? What's your dream?», most of the children would answer: «I want to run my own business».

You have an extraordinary career path: from the academic world to state service. From Siberia to China. Now you are in Moscow. It must have been hard sometimes. What would you recommend to those eager to make a difference, but afraid to make the first move?

Don't be afraid to give up something that doesn't feel right for you, even when you think you have invested too much energy and time.

I failed to defend my thesis.

I held mistaken expectations of what a postgraduate program would be like. Among those mistaken assumptions was expecting lots of help and support. I ended up having a broad research topic and burnt out completely. Finally I realized it was simply not my ambition and calling.

I have always been so energetic that it had been easier for me to grab the opportunity of getting a PhD degree, rather than make a balanced decision.

It was a great lesson to learn. This is the failure I'm most proud of. That encouraged me to move to Moscow and break new ground.

I know you are one of the co-authors of the online-course Triple Helix, which is to be launched in 2020. Tell about this project.

For the first time I came across a certain concept «Triple Helix» back in 2014, when our Tomsk State University was preparing to host an international conference of the same

name.

In 2015, I participated in the Triple Helix Conference in Beijing, and later in 2018 in Manchester.

In 2019, Tatyana Pospelova, Director of Triple Helix Association in Russia, and I agreed with Tomsk State University to develop and launch an online course for Coursera, in which we combined relevant data, many years of experience into a compact, consistent and practice-oriented course.

Our audience will learn how to use the programs of interaction between science, business and the government, and explore the experience of the world's leading ecosystems. At the end of the course, students will present their research projects, in which step-by-step they will analyze the innovative potential of a university, company, city or region.

The course is oriented for undergraduate students, interested in such fields as "Entrepreneurship", "Management", "Municipal Management", "International Relations"; master students, majoring in "Technology Management", international students, studying "Intellectual Property Management"; representatives of the local authorities, involved in the innovative development of regions; beginning entrepreneurs, planning their own innovative business in the Russian Federation; and representatives of innovative development funds.

Our course is intended to show the links in projects between science, business and the government, develop research skills, promote the Triple Helix model, and introduce the activities of the Triple Helix Association.

We started to research the principles of the Triple Helix key long before interdisciplinary studies became a key trend. It is more than relevant now.

In my opinion, it is very important to have a comprehensive idea of the interaction between different communities. It is crucial to show the possibilities and support available for private entrepreneurs and research groups.

Are you going to develop new courses in the future?

Absolutely yes! I want to share my knowledge with professionals who build relationships between governmental, business and the academic worlds. I want to create cross-cultural interdisciplinary educational projects.

Thank you!

I'm honored to have been given an opportunity to tell my story.

Elena Vaganova

CHAPTER NEWS



VIRTUAL DIALOGUE DAYS

The THA Chapter of Greece would like to announce its participation during 6-10 July 2020, in the RiConfigure Project (<http://riconfigure.eu/>) Virtual Dialogue Days on Democratizing Innovation. Fostering collaboration among the public sector, industry, academia and civil society to address the challenges of our time.

The RiConfigure Dialogue Days are an open online process bringing together policy makers, practitioners and researchers working on and with quadruple helix innovation to open up dialogue, explore, and learn for collaborative innovation. The event offers an opportunity to explore and learn from good practice examples for collaborative innovation, further discuss tools, and methods for involving civil society in innovation, connect and develop new ideas for practitioners and policy makers and jointly lay ground for a policy brief, and innovation training program.

The RiConfigure Dialogue Days are organised by the Institute for Advanced Studies and Fondazione Adriano Olivetti.

For more information, see the official invitation at: www.efc.be/uploads/2020/05/Virtual_dialogue_days_info.pdf

NEW THA NEW MEMBERS MARCH 2020 - MAY 2020

We are pleased to welcome new THA members joining our Association between March 2020 and May 2020, from both developing and developed countries raising the Association's international profile.

You can find the full list of THA members in our Members Gallery www.triplehelixassociation.org/members-gallery, and Organizational Members directory www.triplehelixassociation.org/organizational-members-directory.

To join the Association, please consult our membership page www.triplehelixassociation.org/membership and fill out the online membership form www.triplehelixassociation.org/membership-request.

Organisational Member



Hans Lodders

Juliana van Stolberglaan 26 I
2595 CG, Zuid-Holland
Hague
THE NETHERLANDS

Areas of organisational competence and expertise in TH research and practice Program management, stakeholder management, new organisation development, business development, innovation

Hans Lodders is an experienced practitioner, who has set up several Triple Helix collaborations during his career. For example the Hilversum Media Campus, GroenGelinkt and the GMP+ Academy on Feed Safety. In these projects, Hans' role is that of quartermaster and program manager, assigned to develop new organisations for multiple stakeholders from the Triple Helix.

Individual Members

JULIANA MEDEIROS

Universidade Federal de Minas Gerais
Belo Horizonte
BRAZIL
TH Chapter Brazil

Bachelor in Law and Master in Public International Law, I have been working at the Technology Innovation Center of Universidade Federal de Minas Gerais (CTIT - UFMG) for sixteen years. I am currently the CEO of CTIT, and have expertise in intellectual property management; industry-university collaboration models; and Brazilian Science, Technology and Innovation legislation. I am a lecturer in the Professional Master's Course in Innovation at UFMG, and I am presently enrolled in the PhD Program in Biopharmaceutical Innovation at UFMG.

Areas of interest in TH research

Industry-university collaboration models, innovation policies, technology transfer office practices.

NICHOLAS MOTSATSE

TUT Enterprise Holdings
Sunninghill Gardens
SOUTH AFRICA

I hold a Bachelor of Theology Degree from the University of Fort Hare (UFH), and a Certificate in Digital Transformation: Platform Strategies for Success. I am currently completing a Master Degree in Business Leadership (MBL) from the University of South Africa's (UNISA's) Graduate School of Business Leadership. I am the Chief Executive Officer of TUT Enterprise Holdings (TUTEH), a wholly owned company of the Tshwane University of Technology (TUT), with a specific mandate to generate, grow and sustain third stream income for TUT. I am a member of the University Council of the University of KwaZulu Natal (UKZN) in South Africa. I chair the Finance Committee of the Council. Prior to taking up the leadership position at TUTEH, I was involved in entrepreneurial ventures in mining, construction and

facilities management. In addition I have had eleven years in the executive levels within the Copyright administration field.

Areas of interest in TH research

University led regional development through the collaboration with industry and government; Local Economic Development within the Universities locales; TH application in the upliftment and transitioning of local small businesses from subsistence to economic contributors.

PROFESSOR ALBERTO MUNOZ



Universidad Politécnica de Yucatán
Merida
MEXICO

Dr Luis Alberto Muñoz Ubando is a Computer Technician at IPN-CECYT 9 "Juan De Dios Batiz", Electronic Systems Engineer (ITESM, 1993), Master in Scientific Computing (INRIA, FR, 1994), Doctor in Images, Vision and Robotics (INRIA, FR, 1999), Post-Doctorate in Industrial Robotics (Oxford, UK, 1998-2000), Sabbatical in Cognitive Vision (UT Wien, Austria 2005-2006). Since 2008 he is Director of Innovation for Grupo Plenum in Mérida, Yucatán. He has worked in Televisa, Banamex, McDonald's, ITESM, ITAM, UA, UNAM. founded and participated in the creation of fourteen companies in Mexico and the USA. As a researcher, he has worked at the University of Pisa in Italy (1996), Tokyo in Japan (1995), the University of Karlsruhe in Germany (1994-1995); at Stanford University (2002) and the University of Massachusetts at Lowell (2006) in the United States. For the Federal Government, he has worked in the National Council of Science and Technology (CONACYT) during 2000-2002 and in the Faculty of Sciences of the UNAM from 2006 to 2009. He was Professor-Researcher in the UADY from 2002 to 2006 where he participated in the creation of the Bachelor's Degree in Computer Engineering and the Master's Degree in Mathematical Sciences. He has directed more than forty Bachelor, fifteen Master's and six PhD theses. He has created and participated in various academic engineering and graduate programs. He has published more than 150 articles among national and

international magazines, books and conferences. He has given more than 500 lectures on the dissemination of science and technological innovation. In 1999 the translation into Spanish of the "Dictionnaire Illustré de la Robotique" was completed. In 2008, he founded the Robotics Institute of Yucatán in Mérida (www.triy.org) where more than 500 children and young people are attended annually in specific courses to develop their early scientific and technological skills. He has patents in energy, logistics, online health ("e-health"), sustainability, and education. He is a member of CACEI, of the Journal of Software Engineering for Robotics committee (www.joser.com) and an evaluator of several journals on scientific research, technological development and innovation management. He is a mentor for Startup México, Staminna, Talentum and other talent generation organizations. He participated in the Stanford Go-to-Market program in the first generation in Mexico. Since 2015 he is a regular member of the Mexican Academy of Computing. He is President Southeast and VP of National Innovation of CANIETI. He is a guest columnist of El Financiero.

Areas of interest in TH research

Mission innovation and innovation education.

IBTISSAM SLIMANI

Abdelmalek Essaâdi University
Sidi Allah Bahraoui
MOROCCO

Ibtissam, is a research enthusiast. Born and raised in Morocco, I had my master's degree in Marketing, in 2018, from University Mohamed First in Oujda city. A five-year learning process that got me pursuing my dream of becoming a university professor. I am currently making that dream come true, by being a PhD student at University Abdelmalek Essaâdi in Tétouan city, Morocco. And my theme is around the university's role in a region's development, from a Triple Helix perspective. Thus, being part of the THA family is a perfect opportunity for me to meet international colleagues and hopefully participate in the enrichment of such a revolutionary model.

Areas of interest in TH research

Introducing and studying the TH model from a North African approach.

HACER TERCANLI

Münster
GERMANY

I am currently a PhD candidate at the University of Twente, Netherlands. Earlier I worked as a senior project officer at the University Industry Innovation Network (UIIN) based in Amsterdam, and before that as an instructor and an academic coordinator at public and private universities in Turkey. I am affiliated with the California State University, through my Fulbright scholarship for a Master's degree in Applied Linguistics. Most recently, I have completed an Erasmus Mundus Masters programme called Research and Innovation in Higher Education (2014-2016).

Areas of interest in TH research

Higher education societal engagement, the quadruple helix model of stakeholder collaboration.

DR MARJA-LIISA NEUVONEN-RAUHALA

South-Eastern Finland University of Applied Sciences
Kouvola
FINLAND

Dr of social sciences, specialized in Higher Education. My interests include HE integration with working-life, and how this is organized. I have worked as a research director, director of education and now as a Principal lecturer in uas sector for decades, and before in universities.

Areas of interest in TH research

Triple helix as a whole, quadruple also.

HABTAMU DIRIBA GAROMSSA

FH Münster and University of Twente
Muenster
GERMANY

I am an academic researcher and a PhD candidate at the Science to Business marketing Research Center (S2BMRC) of Muenster University of applied sciences (MUAS), Muenster, Germany, and Center for Higher Education Policy Studies (CHEPS) of the University of Twente (UT), Enschede, Netherlands. My research interest includes entrepreneurial university and global diffusion and translation of ideas.

Areas of interest in TH research

Entrepreneurial university.

MARISE ALMEIDA

University of Lisbon
Amadora
PORTUGAL

Marise Almeida has an MBA from Católica|Nova (2017), and a PhD in Chemistry from University of Lisbon (1999). Marise is presently a lecturer at the University of Lisbon, where she teaches Chemistry, Biochemistry and Physics, and Vice President of the supervisory board of the Portuguese NGO "Business as Nature". Marise Almeida has a strong background in sciences and in the last two decades developed teaching, research and science management activities in higher education institutions. Her current interests are centered on innovation and entrepreneurship in higher education and in the development of social responsible and sustainable HEI.

DR PAWEŁ GŁODEK

Department of Entrepreneurship and Industrial Policy
Faculty of Management
University of Lodz
Łódź
POLAND

Assistant Professor at Department of Entrepreneurship and Industrial Policy at the University of Lodz with twenty years of experience in research and lecturing. Lecturer in the field of innovation, entrepreneurship and technology commercialisation at University of Lodz. Author and co-author of expert reports prepared for European Commission, Polish Ministry of Science, and several regional authorities in Poland (including Regional Innovation Strategies). Experienced project manager and researcher in several national (Polish National Science Centre), and EU funded projects (Erasmus, INTERREG and Leonardo do Vinci).

Areas of interest in TH research

Academic spin offs, innovation management, business advice.

KATI TÄHTINEN
Turku University
Tampere
FINLAND

Major in Spanish and wide sociocultural, anthropological and linguistic studies. Honorary Consul of Spain in Tampere, Finland.

Areas of interest in TH research

The importance of language teaching and intercultural relationships in economics.

ERIC SUNDSTROM
University of Tennessee
Knoxville
UNITED STATES

Professor Emeritus, Department of Psychology, University of Tennessee, Knoxville, U.S. Evaluator, US National Science Foundation, I/UCRC - Industry / University Cooperative Research Centers Program.

Areas of interest in TH research

Industry-university-government cooperation.

CHARLES TAO
Nanjing University
Nanjing
P R CHINA

Charles Tao is a PhD student in Higher Education from Nanjing University, one of Top ten Universities in China. Before join Nanjing University, Mr Tao was the President and CEO of America Asia Intelligence and Education Institute. He was awarded his MBA degree in 2000 and American CMA designation in 2008. He has more than twenty-five years of professional education, accounting and tax experience. He focuses most of the time on promoting effective international education, accounting, tax advice and planning tailored to his unique clients across Canada, USA and China. Before setting up his own consultancy firm, he worked as staff accountant, senior financial analyst, senior tax specialist and financial controller for various Fortune 500 companies including ARCO, BP, Kraft and Mylan. He built up a career online training platform helping people find jobs. Aside from his rich education, accounting and tax practice, he is actively involved in non-profit enterprise. He founded the Sino-Can Investment Association, focusing on innovation and relationship in order to build and maintain trust with investors, partners and members.

Areas of interest in TH research

Triple Helix Model, Entrepreneurship Education, Innovation Ecosystem, Knowledge Production Model 3.

PADMASHEELA KIISKILÄ
Vuorentausta
FINLAND

Masters in Computer Science, professional experience in Silicon Valley, California. Currently Doctoral student at Tampere University Department of Business Management. Previous title: Director of Firmware engineering 2 patents in Wireless networks.

Areas of interest in TH research

Innovation through education, National innovation model, University and Industry working together.

ZHU JUNHUA
P R CHINA

PhD student, majoring in higher education policy, the faculty of education, the university of Hong Kong.

Areas of interest in TH research

The entrepreneurial university

PROFESSOR DORTHE EIDE
Nord University Business School
Bodø
NORWAY

Dorthe Eide is professor in organisation and management at Nord University Business School in Norway. She holds a Doctor Polit degree from University of Tromsø, her dissertation was about knowing, learning and innovation in SMBs (hotels). Since then her main context focus turned from service to experience sectors/activities (nature, culture and meals), within topics such as experience-based innovation and value co-creation, particularly different innovation process approaches (network, triple helix, lab, testing, cross-sector) and experience design - quality and - consumption. Increasingly sustainability and visitor management. She manage the research group Marketing, Management and Innovation of Experiences (MMIE). She teaches and supervise at all levels.

Areas of interest in TH research

Triple helix network driven innovation; Lab driven innovation; beyond triple helix for more multi-voiced and broader participation. Sustainable development. New modes of -hexis in innovations. Innovation in service and experience sectors.

OLGA HØEGH-GULDBERG

Nord University
Bodø
NORWAY

Olga Høegh Guldberg is a postdoctoral researcher in experience-based tourism at Nord University Business School and is part of Marketing, Management and Innovation of Experiences research group. She holds a PhD from

Inland Norway University of Applied Sciences. Her main research interests are learning, experience innovation, cross-sectoral networking and innovation practices, participative innovation approaches, and sustainable destination management. She teaches and supervises Bachelor and Master students in the areas of interactive and practice-based innovation and value-creation, sustainable tourism development.

Areas of interest in TH research

Different modes of collaborative learning and innovation, from triple to quintuple helices

THA NEWS

EIT LAUNCH CRISIS RESPONSE INITIATIVE

The European Institute of Innovation and Technology (EIT) has recently launched the **EIT Crisis Response Initiative**, which mobilizes **EUR 60 million of additional funding** to innovators powering high-impact solutions that tackle this unprecedented social and economic challenge. The financing will allow the launch of new innovation projects to address the immediate crisis as part of the 'Pandemic Response Projects', and will support highly innovative start-ups, scale-ups and SMEs crucial to the economy's fast recovery to benefit from additional funding under the 'Venture Support Instrument'.

The new EIT initiative consists of two main tracks of activities to be implemented by the EIT Knowledge and Innovation Communities across Europe:

Venture Support Instrument: Start-ups, scale-ups and SMEs have been enormously impacted by the COVID-19 crisis, with investment drying up and significant cash flow issues emerging. Additional EIT support (financing, technical assistance and network) will help highly innovative ventures weather the crisis and accelerate their growth.

Pandemic Response Projects: More than ever, innovations and new solutions are needed to tackle the current crisis and prevent its resurgence. The EIT ecosystem is agile and will mobilise innovators to address the COVID-19 crisis impact, both in terms of the immediate health concerns and the wider response needed.

The EUR 60 million financing will power innovations in health, climate change, digitisation, food, sustainable energy, urban mobility, manufacturing and raw materials. Reflecting the EIT innovation model's flexibility, the EIT's eight Knowledge and Innovation Communities have responded decisively to the crisis and will launch additional pan-European calls for these activities in the coming weeks.

For more info:

<https://eit.europa.eu/news-events/news/eit-announces-eur-60-million-crisis-response-initiative>

Response to THA Survey Welcomed

The THA is launching a survey in the TH community.

The survey has the scope to know better the Triple Helix community (members of THA and the audience of the Helice Magazine, and the authors and readers of the Triple Helix journal).

The Executive Committee of THA is working on the development of new activities and projects to mitigate the impact of COVID-19 in our association and community. And, at the same time, take advantage of opportunities that could emerge in the “new normal” economy.

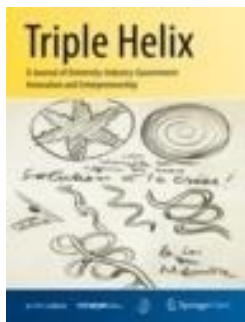
The survey will be sent by email in the next weeks. All information will be treated as confidential and your data will not be shared or sold to any other organization. The results will be public in a report available on the THA website.

The collaboration of our community is very important to the future of our association.

CALL FOR PAPERS

TRIPLE HELIX JOURNAL

UPCOMING ARTICLES



Triple Helix: A Journal of University-Industry-Government Innovation and Entrepreneurship

ISSN: 2197-1927 (electronic version)

Published by Brill/Sense

<https://brill.com/view/journals/thj/thj-overview.xml>

Upcoming Articles

Theorizing the Triple Helix model: Past, present, and future:

Yuzhuo Cai, Henry Etzkowitz

Corporate-Startup Co-Creation for Increased Innovation and Societal Change

Annika Steiber, Sverker Alänge

Corporate-Startup Collaboration: Its Diffusion to and within the Firm

Annika Steiber

CALL FOR PAPERS FOR THJ SPECIAL ISSUE

SPECIAL ISSUE

“Triple Helix and the new production of academic knowledge”

**Deadline for submission postponed to
31 May 2020**

Guest editors: Andréa Paula Segatto,
 Alexandre Reis Graeml

www.triplehelixassociation.org/thpost/special-issue-of-thj-triple-helix-and-the-new-production-of-academic-knowledge

You are invited to submit your most exciting, broadest, ground-breaking papers for publication. Please note that THJ has broadened its purview to include **scientific essays** as well as scientific articles.