GIANT | HIGH LEVEL FORUM

Leading Innovation Ecosystems

HLF POST EVENT REPORT

2018

Grenoble,
November 11-14, 2018

INNOVATION FOR TOMORROW'S **INFRASTRUCTURES**

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WELCOME TO THE 2018 High Level Forum

Since its start in 2012, the High Level Forum has continued to grow year after year. For this seventh edition, the GIANT campus in Grenoble welcomed 38 ecosystems and more than 150 guests from around the world. This year's delegations included representatives from 16 new ecosystems, bringing our international community to a total of 45 innovation ecosystems, twice as many as three years ago.

The forum opened with words of welcome from Stéphane Siebert, President of GIANT Grenoble Innovation Campus, Patrick Levy, President of Université Grenoble Alpes, and Eric Piolle, Mayor of Grenoble. In addition, Lucilla Sioli, Director of Artificial Intelligence and Digital Industry at the Directorate-General CONNECT (European Commission), presented delegates with the EU perspective on this year's theme.

A THEME TO BUILD THE FUTURE: INNOVATION FOR TOMORROW'S INFRASTRUCTURES

The 2018 edition of the forum offered participants the opportunity to explore and discuss the challenges of building infrastructures within their ecosystems. Why the focus on infrastructures? With the rapid evolution of digital technology, infrastructures are becoming increasingly complex. Both citizens and companies require 'intangible' infrastructures that go beyond simple 'physical' constructions (e.g., a park, bridge, waterline, etc.). As urban areas shift to a 'smart city' model, actors in this change must define new strategies to combine 'hard' and 'soft' infrastructures. No matter their form, infrastructures remain a strategic factor to grow economies and ensure the prosperity and quality of life in a region. And innovation ecosystems are deeply intertwined with any region's infrastructure projects.

NEW ADDITIONS TO THE HIGH LEVEL FORUM

Much like its member delegates, this year's forum was full of innovation! To further encourage interaction amongst all delegates, the forum created the ALL-IN Workshop, an opportunity for participants to exchange about the theme in small groups. Following the traditional two days of speeches and panel discussions, a Networking Day was added to foster individual and delegation level meetings as well as presentations and workshops on specific topics (see page 10). Finally, the forum delivered the first HLF Award as a symbolic means to recognize the significant engagement and contributions of a long-standing member delegation (see page 13).

Patrick Levy (left)
President Université Grenoble Alpes

Stéphane Siebert (right)
President GIANT Innovation Campus

STEPHANE SIEBERT
President of GIANT Grenoble Innovation Campus

Interaction, Ingenuity and Innovation for Infrastructures

The spirit of collaboration and innovation was once again the defining strength of this year's High Level Forum. Following four days of intense networking, learning and dialogue, it is with great pleasure that I present you with the 2018 post-event report.

In 2012, the GIANT Innovation Campus in Grenoble launched the first High Level Forum. What, you may ask, is the goal of creating such a forum? Local ecosystems like GIANT are the key drivers of innovation worldwide. As such, we stand to gain much by meeting and sharing our visions and best practices. Every year, the forum selects a specific theme tied to innovation and unites representatives from research, higher education, industry, finance and government in order to discuss how our ecosystems can overcome the challenges of the future.

DEVELOPING AN INTERNATIONAL INNOVATION COMMUNITY

Three factors ensure the forum's success: First, the forum offers ecosystems the opportunity to increase the international visibility of their local innovation actors (universities, companies, research centers, etc.). Second, it provides a multidisciplinary gathering with high-level speeches and informal discussions where participants share strategies and best practices for innovation management and promotion. Finally, the forum is a stepping stone that enables ecosystems to build relationships and initiate inter-ecosystem collaborations with top-notch partners around the globe.

INFRASTRUCTURE: DEVELOPING THE UNDERPINNINGS OF AN INNOVATIVE ECOSYSTEM

All actors within an ecosystem rely on the efficacy of its infrastructures. With the digital revolution well underway and the imminent arrival of smart cities, the future of infrastructure development has become an essential topic for everyone, from citizens to research and technological organizations, companies, and local authorities. Recent estimates anticipate the need for 97 trillion dollars in global infrastructure investments by 2040[1]. In response, this year's theme focused on innovation for tomorrow's infrastructures. Given the multidisciplinary and societal challenge of (re-)shaping an ecosystem's infrastructure, the High Level Forum was the perfect place for a wide variety of leaders, policy-makers and experts to share ideas and discuss the best path forward.

In conclusion, I would like to extend a very warm thank you to all readers who participated in this year's event. Your engagement is at the heart of the forum's success. And for those of you discovering the forum thanks to this report, I hope we effectively communicate the richness of the event and I look forward to seeing you in years to come.

Sincerely,
Stéphane Siebert

1. Global Infrastructure Outlook - A G20 INITIATIVE, outlook.gihub.org/. Retrieved Nov. 16, 2018.

High Level Forum
LEADING INNOVATION ECOSYSTEMS

Launched by GIANT in 2012, the High Level Forum is an international community that now unites 45 innovation ecosystems around the world. Every year, the forum welcomes decision- and policy-makers from higher education, research, industry and public authorities. With numerous high-level speeches and workshops, participants take part in a unique opportunity to share visions, strategies, experiences and best practices for innovation management and promotion. First hosted in Grenoble, the forum is held in an innovative partner city every other year.

BUILDING THE COMMUNITY

As an international gathering of innovation ecosystems, the forum serves to strengthen international cooperation. By sharing strategies and developing relationships with other ecosystems, participants help to promote research, innovation and the transfer of technology at an international level. The forum also fosters the development of partnerships and collaboration between private and public players.

ENCOURAGING TRUST AND RELATIONSHIPS

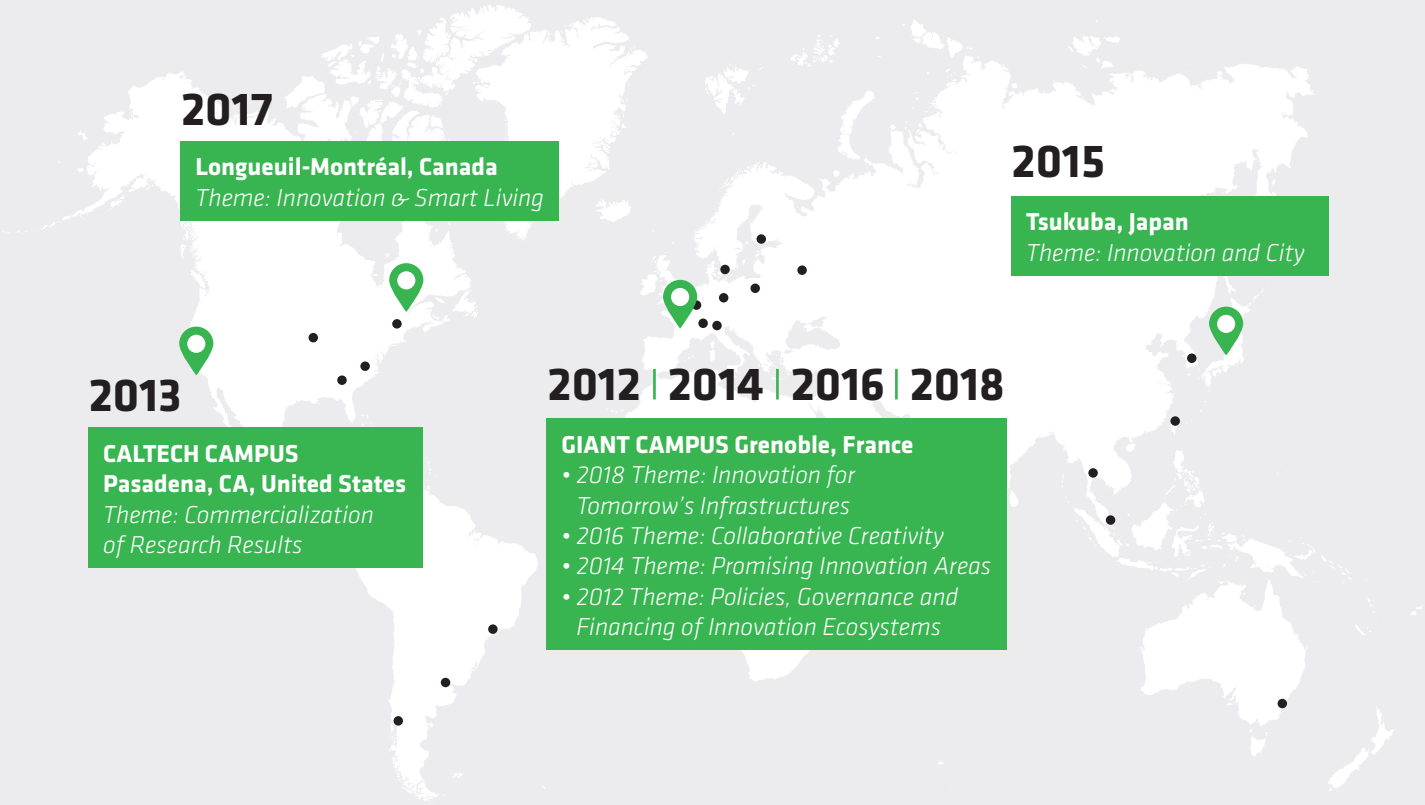
One of the cornerstones of the event is to promote informal exchanges and networking. By holding moderated workshops in small groups, delegations have the chance to engage an in-depth discussion of the forum's theme. Specific networking activities, including dinners, sightseeing, educational tours and a day of networking enable participants to meet and interact in an informal setting. The experience helps to build mutual trust, friendly relationships and stronger ties between ecosystems around the world.

AN INTERNATIONAL, HIGH-IMPACT THEME

The forum initiates international debate on specific innovation topics. Its accent on global leadership and collaboration offers participants the opportunity to discover an international perspective on the challenges they face. While each ecosystem has a unique set of strengths and challenges, many share similarities that can benefit from close-knit collaboration and the sharing of experiences.

2018 HIGH LEVEL FORUM

7 HIGH LEVEL FORUMS



2017
Longueuil-Montréal, Canada
Theme: Innovation & Smart Living

2015
Tsukuba, Japan
Theme: Innovation and City

2013
CALTECH CAMPUS
Pasadena, CA, United States
Theme: Commercialization of Research Results

2012 | 2014 | 2016 | 2018
GIANT CAMPUS Grenoble, France
- *2018 Theme: Innovation for Tomorrow's Infrastructures*
- *2016 Theme: Collaborative Creativity*
- *2014 Theme: Promising Innovation Areas*
- *2012 Theme: Policies, Governance and Financing of Innovation Ecosystems*

45 DELEGATIONS since 2012

AFRICA
- Morocco: Casablanca
- Tunisia: Sfax

AMERICAS
- Argentine: Bariloche, Buenos Aires
- Brazil: Florianopolis
- Canada: Longueuil, Montréal, Vancouver
- Colombia: Medellin
- Mexico: Guadalajara
- USA: Albany
  Atlanta (GIT)
  Boston (MIT)
  Chicago (Argonne)
  Los Angeles (Caltech)
  San Francisco (Stanford)

ASIA
- Japan: Osaka, Tsukuba
- Kazakhstan: Astana
- Singapore
- South Korea: Daejeon
- Taiwan: Hsinchu
- Thailand: Bangkok

EUROPE
- Austria: Vienna
- Belgium: Leuven
- Czech Republic: Prague
- Finland: Tampere
- France: Grenoble (GIANT)
- Germany: Dresden, Karlsruhe
- Ireland: Cork-Dublin
- Italy: Milan
- Luxembourg
- Poland: Lodz, Warsaw
- Romania: Cluj-Napoca
- Spain: Barcelona, Bizkaia
- Sweden: Lund
- Switzerland: Lausanne (EPFL)
- The Netherlands: Eindhoven
- UK: Harwell/Oxford

MIDDLE EAST
- Israel: Haifa (Technion)

AUSTRALIA
- Sydney

RUSSIA
- Moscow

GIANT
AT A GLANCE

40
COMPANIES
on-site

More than **7,000**
SCIENTIFIC PUBLICATIONS
per year

More than
10,000
RESEARCH JOBS

More than
10,000
STUDENTS

More than
5,000
INDUSTRIAL JOBS

More than **700**
PATENTS filed per year

Annual direct and indirect
ECONOMIC IMPACT:
€4,1 BILLION

More than **9,000**
INTERNATIONAL VISITORS

GIANT (Grenoble Innovation for Advanced New Technologies) unites research, higher education and industry on a unique campus to overcome the major challenges of tomorrow.

Founding members: CEA, CNRS, EMBL, ESRF, GEM, ILL, Grenoble INP and UGA.

SIX HUBS FOR EXCELLENCE
in science and academia

Major European Research Facilities
A campus that is unique worldwide in its access to high level equipment used to explore materials and living matter.

Fundamental Research
Essential support for research that advances knowledge and enables technological innovation.

Energy
Electrical networks, smart buildings, energy conversion and transfer, carbon-free energy sources and energy storage.

Information Technology
MINATEC: dedicated to innovation and technology transfer in the fields of micro and nanotechnology.

Healthcare
A hub for medical, diagnostic and imaging technology with access to internationally recognized organizations.

Innovation Management
Applied research and new business creation as well as innovation and industrial performance training for managers.

French Alternative Energies and Atomic Energy Commission (CEA) • National Center for Scientific Research (CNRS) European Molecular Biology Laboratory (EMBL) • European Synchrotron Radiation Facility (ESRF) • Grenoble Ecole de Management (GEM) • Grenoble INP • Institut Laue-Langevin (ILL) • Université Grenoble Alpes (UGA)

Building the community

One of the key aspects of the High Level Forum is the opportunity for informal exchanges and networking that open the door to future collaborations and joint projects between ecosystems. Every year, new activities are added to encourage individual interactions and increase connections between ecosystems. To help spark relationships, events including sightseeing, dinners and a day of networking create the chance for discussion.

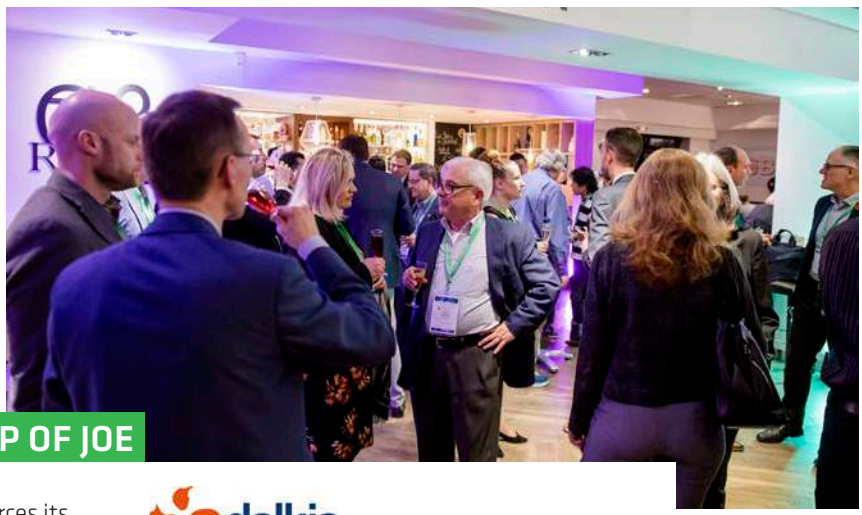
NETWORKING DAY

One of this year's innovations was the launch of the High level Forum Networking Day. This fourth day offered a specific time to organize three types of networking activities: First, ecosystem to ecosystem meetings enabled delegations to discuss cooperation, partnerships, joint projects or other initiatives in a private setting. Second, head to head meetings on an individual level were programed according the needs of visiting delegates. This was an excellent moment for international actors to meet with local GIANT innovation actors.

Finally, delegations were able to hold presentations or workshops on a specific topic in order to share their experience, receive feedback and exchange with other ecosystems. The selected topics covered a wide array of subjects such as a presentation on the circular economy in Hsinchu, Taiwan, a workshop about Atlanta's Lean Startup Ecosystem Model, and a workshop about the initiatives and tools launched by the Grenoble Authorities to promote innovation, startups and the transfer of technology.

VISITS & DINNERS: TIME FOR INFORMAL DISCUSSIONS

As every year, the forum included activities such as sightseeing around the Grenoble region and dinner events to mix and mingle. In addition to the traditional Gala dinner, the first evening included a Networking Dinner during which each delegation had a moment to present itself. The second evening included a Conference Dinner with a speech by Benoît Lecinq, CEO of Entrepose, a company in the VINCI Group. A networking lunch buffet organized with local actors enabled delegates to interact with representatives from various Grenoble infrastructures.



MEETING OVER A CUP OF JOE

As the High Level Forum reinforces its ties to industry, several coffee breaks were sponsored by companies such as Air Liquide, ENGIE, Sofradir/ULIS and Schneider Electric. The event's primary industry sponsor, Dalkia, also offered delegates an opportunity for networking during a pre-dinner apéritif.

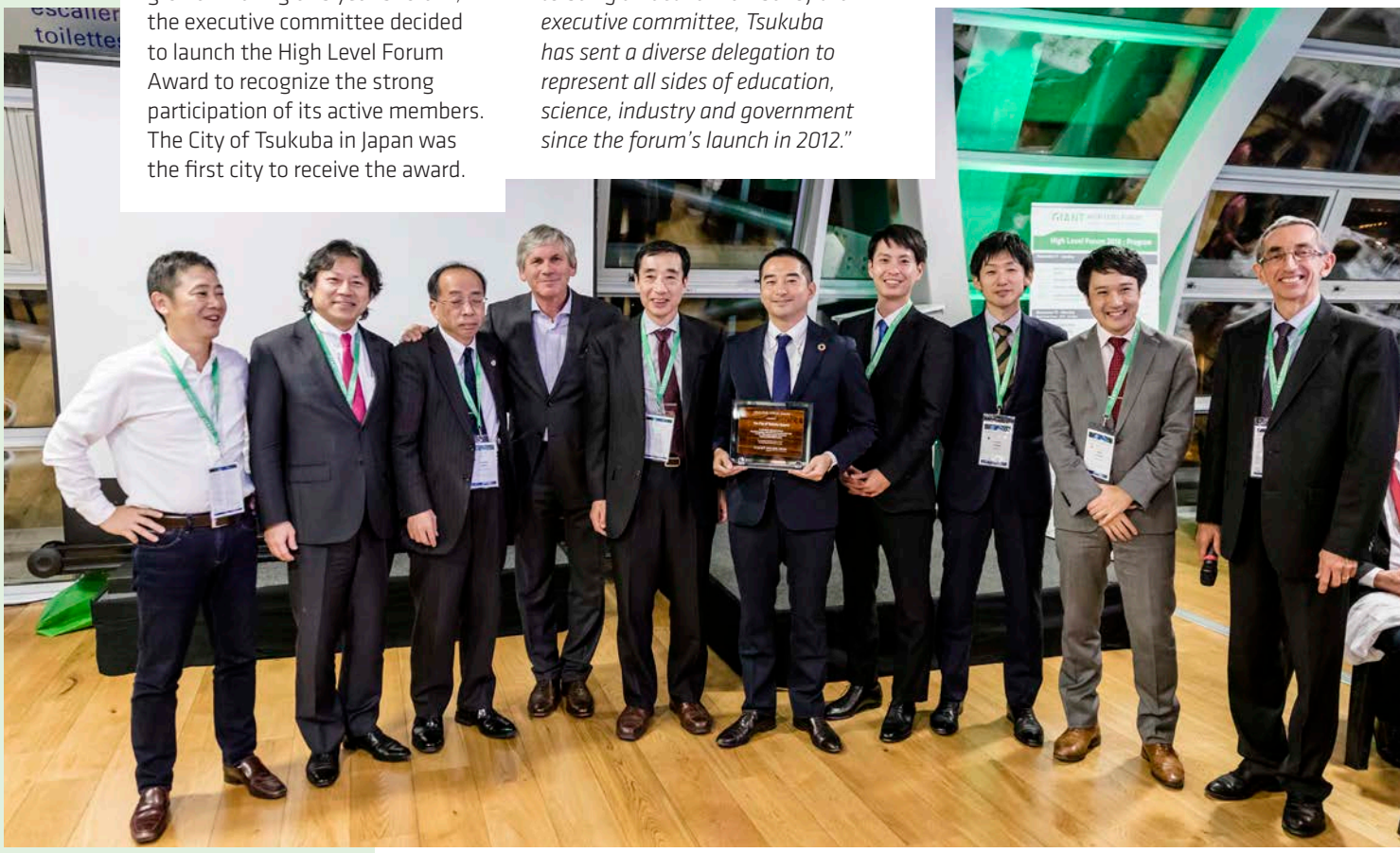
"This award is a wonderful homage to the hard work carried out by our team to support the success of this unique event."

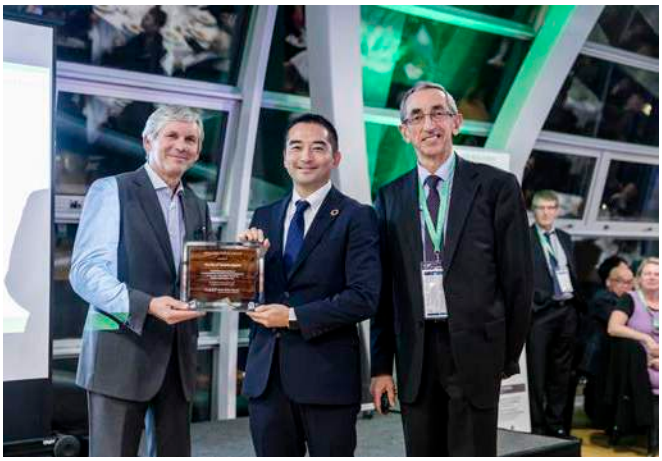
***Tatsuo Igarashi** - Mayor of Tsukuba*

THE HIGH LEVEL FORUM AWARD

Since 2012, the forum has been building up to a strong international community of ecosystems. Thanks to their high level of engagement and participation, certain actors in the community have helped drive the forum's rapid and successful growth. During this year's forum, the executive committee decided to launch the High Level Forum Award to recognize the strong participation of its active members. The City of Tsukuba in Japan was the first city to receive the award.

"We thought it essential to recognize the outstanding and continuous participation of the city of Tsukuba," explained Alain Astier, High Level Forum Coordinator, who presented the award during the Monday night Conference Dinner. *"In addition to being an active member of the executive committee, Tsukuba has sent a diverse delegation to represent all sides of education, science, industry and government since the forum's launch in 2012."*





Tatsuo Igarashi, Mayor of City of Tsukuba, and the HLF 2018 Tsukuba Delegation alongside **Stéphane Siébert**, President of GIANT, and **Alain Astier**, HLF Coordinator.

KEYNOTE SPEAKER

THIERRY VIGNON

Senior Advisor, CEA Tech
Grenoble, France

Thierry Vignon is a Senior Advisor to the General Director of CEA Tech and the Innovation Director. He was formerly the General Manager of the County of Isère, France.

THE CHALLENGE OF TOMORROW'S INFRASTRUCTURE

Over the last century, the world's population has been multiplied by four and literacy by three. As a result, communication between individuals has exploded. In our rapidly changing global environment, businesses, individuals and society can take nothing for granted. As our capacity for innovation has increased exponentially, this pace of change will also accelerate.

Many of today's largest companies are less than 40 years old. Companies and regions that were not quick to adapt have either lost much influence or simply disappeared. Our ecosystems must be able to capture and integrate technological advances if they wish to be successful in the future. In addition, fundamental constraints such as pollution, global warming, the scarcity of natural resources and a decreasing biodiversity will force each of us to think not just in local terms but also on a planetary level.

To summarize the challenge of infrastructure, we have to meet growing needs while reducing our impact on the planet.

The result is a need for moderation and sharing. We often say that the best energy is the energy we do not need. And the same holds true for the rest of our ecosystem. Previously, urban development relied quintessentially on the development of physical infrastructures for mobility (roads, ports, airports,...). As our environments become more and more digitally connected, it is possible to make telecommuting almost as practical as face-to-face interactions.

To summarize the challenge of infrastructure, we have to meet growing needs while reducing our impact on the planet. Whether overcoming mobility issues through cleaner vehicles and more efficient public transportation, or ensuring high-speed connections for citizens and businesses, the accessibility and efficiency of infrastructure must be a guiding principle. Trouble accessing services or data is a fundamental source of social divide and inequality.

The world's new digital giants are positioning themselves as global mobility operators and they do not see mobility in terms of physical infrastructure. Instead, they focus on interfaces and tools. Whether it is communications, mobility or energy, our growing interconnection has increased the need for collaboration. At a time when the planet is crumbling under a lack of resources and excessive waste, collaboration and circular economies are essential.

In considering infrastructure, it is important to conclude with the importance of placing humankind at the heart of our strategies. Human diversity as well as plant and animal diversity open the door to successful solutions that can meet the needs of all.

ECOSYSTEM SPEAKER

MARK HARRIS

President & CEO - Illinois Science & Technology Coalition (ISTC)
Chicago, USA

Mark Harris is the President & CEO of the Illinois Science & Technology Coalition (ISTC), a member-driven, nonprofit that measures, connects and advocates for the Illinois innovation economy. ISTC makes powerful links between the state's universities, industry, startups and high schools to strengthen the regional economy through data collection, policy advocacy and programs.

THE CHICAGO INNOVATION ECOSYSTEM

As the third largest city in the US, Chicago is an economic powerhouse. It is also the country's most diverse economy with no sector weighing more than 13% of the local economy. It is home to 34 Fortune 500 companies. Local actors, notably universities, have re-envisioned their infrastructure to create spaces for startups and entrepreneurs. Over the last five years, 942 student and faculty startups have been launched with 877.5 million dollars raised.

A key challenge in terms of startups has been creating an environment that encourages them to stay in the region as they grow. Spaces such as 1871 are the perfect illustration of uniting universities, major corporations, talent and startups to create such a favorable environment. 1871 is home to more than 500 early-stage digital startups and includes partners such as accelerators, industry-specific incubators, the Illinois Science & Technology Coalition, companies and numerous universities.

A key challenge in terms of startups has been creating an environment that encourages them to stay in the region as they grow.

In addition to creating a startup-friendly space, public-private partnerships have played a key role in the ecosystem's development. The CityTech Collaborative initiative has created a framework for the city to be a testbed for various high tech experiments (mapping underline piping, sensors to collect data on air quality or foot traffic, redirecting subway traffic during Cubs games,...). Google maps and the City of Chicago also teamed up to install GPS beacons in dark zones (roads located under highways).

Another issue for the ecosystem has been the fact that actors can be quite spread out. In response, initiatives such as the Discovery Partners Institute create joint education, research and innovation centers where actors can easily work together. The Civic Committee of the Commercial Club of Chicago, which gathers CEOs from the region's major companies, has also worked in this direction by gathering members over the course of six months to identify challenges and establish a strategy for collaboration. While it is driven by the private sector, new political representatives are also participating in the process, thus creating an opportunity to effectively orient the ecosystem towards an increasingly positive future.

ECOSYSTEM SPEAKER

TAKUYA NOMURA

General Producer - Knowledge Capital
Osaka, Japan

Since 2009, Takuya Nomura has been working as General Producer of Knowledge Capital at Grand Front Osaka located in the Umekita area. In addition, he is a Policy Advisor to The Cabinet Office of the Government of Japan.

KNOWLEDGE CAPITAL: CREATING NEW VALUE THROUGH EXCHANGE

To foster collaboration and value creation, Knowledge Capital was Launched in 2013. Located in the Umekita area, Knowledge Capital provides a unique environment for citizens and companies to interact. The center includes housing, hotel space, offices and commercial facilities. Specific facilities such as the LAB, Future Life Showroom and innovative workspaces serve as a showcase for innovation and provide a friendly environment for interaction.

Knowledge Capital is illustrative of the importance of linking society, citizens and business to foster positive growth. Developed on the last prime real estate available in the city center, Knowledge Capital aims to be a technological and interactive hub for future generations by leveraging the potential of an entire district (Umekita).

The organization's Communicators are charged with facilitating relationships between individuals, organizations and corporations. This is essential to promote collaborative projects, which are particularly important for infrastructure development. As diversity is also an essential factor to grow innovation ecosystems, the center is very active in terms of fostering international relationships. It has carried out exchanges with 391 organizations across 80 countries.

Another important aspect of creating an infrastructure hub to welcome innovators, companies and citizens alike is the ability to connect technology and citizens. Initiatives such as the Future Life Showroom provide an efficient means to communicate with citizens about the impact of innovation on society. Phase 2 of Umekita's development is centered around creating open, green spaces to further facilitate interactions between visitors and partners. The Knowledge Capital infrastructure is like a talent agency in its role of attracting and connecting all of these actors. Another tool to discover and grow talent has been the creation of awards for students and innovators. The innovations of tomorrow will require a conjoining of talent, startups, investors, corporations and experts. Hubs such as Knowledge Capital provide an effective means of achieving this goal.

Knowledge Capital aims to be a technological and interactive hub for future generations by leveraging the potential of an entire district.

GUEST SPEAKER

WIM DE KINDEREN

International Project Manager - Brainport Development
Eindhoven, The Netherlands

Since 2009, Wim De Kinderen has worked at the Brainport Development Eindhoven EU office in Brussels, where he represents the City of Eindhoven, Brainport Development and other economic stakeholders. He is responsible for policy lobbying, networking, communications and project development.

BRAINPORT EINDHOVEN: CO-CREATING THE FUTURE

The city region of Brainport Eindhoven is small, yet in economic terms it is a driving force in the Dutch economy. The region hold 46% of all Dutch patents and can count on 1.7 billion euros of private R&D investment. For a long time, the City of Eindhoven was a textbook example of a single-company town. However, the ecosystem was able to adapt to changing times and now offers a diverse economic base with a focus on high tech machinery.

The ecosystem's technology signature has been enriched over time with breakthroughs in areas such as data science, human technology interactions, design, high tech systems and material sciences. Software and hardware are an essential part of the region's economy. As the world transitions from an era of *"cheap"* products to an era of *"smart"* products and services, Eindhoven has learned to attract outside collaboration and build true relationships with suppliers in order to deliver high added value solutions.

To support this ecosystem, Eindhoven has several physical locations geared towards fostering collaborative innovation. The High Tech Campus Eindhoven focuses on promoting open innovation amongst its 11,000 researchers and 160 companies. The Brainport Industries Campus was launched to house startups, educational institutions, service companies, innovation programs, multinationals and SMEs.

These physical campuses anchor companies in the ecosystem and help them develop close ties with each other. Collaboration is a requirement for any company wishing to participate in one of these campuses. Public authorities also have an important role to play in terms of storytelling. The city works to create a link between the innovations on campuses and how they help overcome societal challenges.

The development of innovative infrastructures and smart cities must be guided by a clear, socially accepted framework.

A recent example includes a bar street in Eindhoven that used to be subject to problems of alcohol and violence. Through the innovative combination of data collected from the street and lighting devices, the city was able to reduce the need for police intervention. It is really about illustrating how collaboration between companies and cities can be a win-win effort. In another case, a public contract to set up sensors that measure noise, traffic and other data required participating companies to consult and cooperate with local citizens.

Finally, an essential change that is currently underway is the fact that future infrastructures will come to rely on data more and more. In this transition, public interest must prevail. As a result, the development of innovative infrastructures and smart cities must be guided by a clear, socially accepted framework.

ROUNDTABLE

INNOVATIVE INFRASTRUCTURES FOR TOMORROW'S CITIES: WHAT DO WE NEED AND HOW DO WE DELIVER IT?

Moderator: **ANJANA AHUJA** Freelance journalist and contributing writer for the Financial Times
Panelists: **ANDERS ALMGREM** Deputy Mayor of the City of Lund (Sweden) | **FRANÇOIS BORGHESE** Microgrid Marketing Director at Schneider Electric (France) | **CHRISTOPHE FERRARI** President of the Grenoble-Alpes Metropole (France) | **TATSUO IGARASHI** Mayor of the City of Tsukuba (Japan)

Q How do you co-create new infrastructures with citizens? Especially when citizens and society appear to be disconnected from science and technology?

"Infrastructure is definitely a matter of collaboration. It cannot be an individual project. Discussion with all parties involved is essential."

"There are many ways to improve co-creation. Specialized committees can include expert citizens. Town hall meetings can encourage direct exchanges with concerned citizens. You have to create a vision of 'science for society and society for science'. Citizens should also benefit from technological developments."

"When citizens are questioned about the impact of technology on their daily lives, many of them don't see the advantages of living in an innovation ecosystem. To transition to a smart city, local actors such as city hall have to be forerunners in the use of new technology. This will enable citizens to appreciate the impact of innovation."

Q How can you prepare infrastructure development over the next 20 years?

"Discussion with local authorities is essential. If you take the example of energy, the market is evolving rapidly and local authorities need to set up a framework to enable local energy production, electric vehicles, and other innovations that will have to co-exist with our current system."

"The role of local authorities is to have a vision of future challenges. How to produce, share and connect people to new energy sources? How to build new mobility solutions? This vision must provide solutions that citizens will actually use. As a result, citizens have to be part of the process very early on. They have to be actors of this transition. Policy makers need to create spaces where all actors, from industry and science to individuals can interact and debate questions that are sometimes very complicated."

Q *Another challenge for innovative infrastructures is sustainability. How can this be addressed?*

"Developing a circular economy for innovative infrastructures will contribute to sustainability. This means finding technological solutions and appropriate business models that can put 'wasted' resources such as excess heat from a synchrotron to good use."

Q *Legislation can also be a limiting factor. How do you evolve your legal framework to match the needs of an innovative infrastructure?*

"When we see a successful example of an innovative infrastructure somewhere else in the world, we can use this to help convince policy makers to change regulations. Tools such as the UN's Sustainable Development Goals can also help unite the interests of infrastructure and society. It creates room for discussion at a governmental level."

Q *What is a best practice that appears to be particularly important for developing innovative infrastructures?*

"Cities acting as test beds for innovative products and services is an essential practice. Each ecosystem is unique and has strengths that can cater to the needs of local industrial or scientific actors. By allowing practical experiments, we enable the evolution of our ecosystem. What might have been very difficult to imagine ten years ago can become an obvious possibility today. Practical experiments give us the concrete and positive feedback needed to implement an innovative solution on a larger scale."

Infrastructure is definitely a matter of collaboration. It cannot be an individual project.

GIANT
INFRASTRUCTURE TOURS

Discovering the local ecosystem is an essential part of the High Level Forum. In 2018, the GIANT Tours enabled delegations to visit four local infrastructures. The tours are an opportunity to get to know the local ecosystem and exchange on an informal basis.

GIANT TOURS

CLINATEC: A BIOMEDICAL RESEARCH CENTER WITH A UNIQUE MEDICAL MODEL

Clinatec is one of the world's leading biomedical research centers. It focuses on fields such as cancer and neurodegenerative diseases (e.g., Parkinson's and mobility-related disabilities). Clinatec was designed to encourage the creation of innovative medical devices. The center covers the entire process, from device design to patient application. It represents a unique model that improves creativity and speeds up the development of innovative therapies. Clinatec relies on a multidisciplinary team of more than 100 doctors, researchers, biologists, engineers, roboticists, mathematicians and other scientists. The center's technical platform includes a small hospital and cutting-edge equipment. Collaboration with industry is encouraged and the center is open to working with research teams from around the world.

EUROPEAN PHOTON & NEUTRON (EPN) CAMPUS

The European Photon & Neutron (EPN) Campus is an international science hub in Grenoble that hosts three major European research institutes: the European Synchrotron Radiation Facility (ESRF), the Institut Laue-Langevin (ILL) and the European Molecular Biology Laboratory (EMBL). The campus also includes the Institut de Biologie Structural (IBS) and various joint partnerships. The ESRF is the world's leading synchrotron X-ray source. With 22 partner countries, the ESRF welcomes 10,000 scientists every year. The ILL is the world's leading center for neutron science with an extremely high neutron flux and 40 state-of-the-art instruments. The EMBL is at the forefront of life science research and the development and transfer of related technology.

GIANT INNOVATION CAMPUS

The GIANT Innovation Campus (Grenoble Innovation for Advanced New Technologies) unites research, higher education and industry. GIANT's mission is to overcome major societal challenges in areas such as the digital transition, communications, energy, health and ecology. To do so, the campus brings together eight founding members: three academic institutions (UGA, Grenoble INP and GEM), two French research institutions (CEA and CNRS) and three European laboratories (ESRF, ILL and EMBL). With support from local and regional authorities, the campus also hosts several companies, startups, incubators and clusters. By bringing together research, higher education and industry, the GIANT campus creates new sustainable ties that encourage multidisciplinary projects, transversal collaboration, and the sharing of skills, ideas and knowledge.

'PRESQU'ÎLE': A NEW URBAN DISTRICT NEAR THE GIANT CAMPUS

The Presqu'île project is a large urban rehabilitation initiative that was launched in 2009. The goal of the project is to transform an area that was previously dedicated solely to research into a fully functional residential neighborhood that will gather researchers, companies, universities, students and citizens. As the project nears completion, it offers a wide range of residential housing, student housing and social housing. All buildings meet the highest environmental standards and share living spaces, parks, sports facilities, shops and businesses. By mixing research centers, businesses, students and citizens, this initiative fosters open innovation and a stronger connection between citizens and local innovation actors.


X-RAYS?
GIANT


GIANT

KEYNOTE SPEAKER

CHARLES W. WESSNER

Professor of global innovation policy
Georgetown University, USA

Dr. Charles Wessner currently teaches global innovation policy at Georgetown University and is a powerful advocate of effective innovation policies. Previously, he served for two decades as a National Academies Scholar where he founded and directed the National Academy of Sciences Program on Technology, Innovation, and Entrepreneurship. He is recognized nationally and internationally for his expertise on innovation policy.

GROWING A REGIONAL CLUSTER IN THE U.S.: THE CASE OF THE N.Y. NANO CLUSTER

Countries and regions around the world are facing an important challenge in terms of global competitiveness. Their responses often include substantial support for innovation clusters. While the case for innovation in the US is often portrayed through the eyes of silicon valley, other examples can provide insights and best practices that are more easily transposed from region to region. The NY Nano Cluster in Albany, NY offers an excellent illustration of the power and success of implementing strong, long-term policy and resource commitments to support innovation.

The Albany Model is a growing success story that reflects a long-term commitment at both state and regional levels. It is all the more interesting to note that the cluster did not benefit from substantial Federal investment. At the heart of this success story lies important investments in education, infrastructure and applied research. The region surrounding Albany is particularly rich in higher education resources, and in addition, the region's university structures are ready and willing to engage with industry. The importance of creating interactions between universities and industry is a core lesson drawn from the Albany Model.

A long-term commitment in terms of policy and resources is the key to creating an environment that successful promotes innovation.

New York's ability to create a new research institution specifically focused on nanotechnology was fundamental to transforming the region. The College of Nanoscale Science & Engineering also served as an economic driver with 4,000 jobs and the supply chain tied to maintaining its facilities. In addition to institutions of research and higher education dedicated to the science of nanotechnology, these investments enabled the creation of a state-of-the-art 300mm fab lab, which attracted numerous companies that could not afford such cutting-edge equipment in-house.

All of this was made possible by effective public and private leadership that demonstrated a consistent commitment towards broad cooperation and a shared vision. The results of these investments can be counted in terms of job creation and new tax revenues, both of which amply repaid the region's initial investments. Other key factors that helped contribute to this success include: a focus on the creation of talent, a strong entrepreneurial environment, and agile management and cooperation for research facilities (in particular the ability for universities to overcome state bureaucracy). Policies for funding and incentives are also an important part of attracting and motivating everyone from professors to researchers, angel investors and talent. In conclusion, a long-term commitment in terms of policy and resources is the key to creating an environment that successful promotes innovation.

ECOSYSTEM SPEAKER

KEVIN BRYNE

President and CEO - The University Financing Foundation (TUFF)
Atlanta, USA

Mr. Byrne is currently the President and Chief Executive Officer of The University Financing Foundation (TUFF), a national 501(c)(3) private operating foundation whose mission is to assist institutions of education and research in obtaining facilities and equipment at below market cost.

ATLANTA INNOVATION ECOSYSTEM

An important challenge for Atlanta was the fact it was quite geographically divided, notably by the Interstate 85/75 highway, which cuts through the city. The main university campus was to be found in one location and opposite it, across the highway, was real estate whose potential was underused. And downtown Atlanta was also separated from these two locations. The result was that it was difficult for people to travel between disconnected parts of the city.

In the Atlanta ecosystem, creating connections literally started with the construction of a bridge. By creating a new bridge that facilitated travel for pedestrians and cars wishing to cross the highway, the city was able to open up development of what is now known as the Technology Square. What started out as a 500,000 dollar facelift turned into a 12 million dollar expansion project.

When you bring people together, good things happen.

The catalyst for this development came from Georgia Tech as the university promised to buy and develop land on the other side of the highway if the state built a new bridge. This first spark marked the beginning of the Atlanta innovation ecosystem as we know it today. Around the new university buildings, other abandoned buildings were refurbished to create office space, residential homes, and locations that gather research, academia and business under one roof.

The Technology Square in Atlanta is now home to numerous research centers, university buildings, innovation companies, venture capital companies and other participants. The strength of the Atlanta innovation ecosystem can really be summed up by the word *"density"*. When you bring people together, good things happen. And the Technology Square is exactly that: a location the promotes a high density of innovation actors.

ECOSYSTEM SPEAKER

DAVID TOH

Director and CTO of NTUitive Singapore

David Toh is Director and Chief Technology Officer at NTUitive, a subsidiary of the Nanyang Technological University of Singapore. NTUitive is responsible for commercializing the university's scientific research and incubating startups.

COMMERCIALIZATION STRATEGY AND CHALLENGES FROM LAB PROTOTYPE TO STARTUP

NTU is the country's second largest university and the world's biggest engineering school. With 33,500 students, and 3,850 faculty and staff, it is a research intensive, interdisciplinary university. NTUitive was created to manage the university's startups and joint venture assets with greater flexibility. As there is an important gap between university research and commercialization, NTUitive helps overcome this challenge by facilitating links with industry, access to funding, support for startups and other initiatives.

NTUitive helps analyze how fundamental research can be applied to product development and also lowers the risk of development by facilitating access to funding. One innovative initiative by NTUitive is to focus on a business approach to licensing. This translates to several key strategies: streamlining the licensing process to make it easier for businesses, simplifying contracts, offering royalty-free licenses for non-exclusive agreements, and implementing a pay scale for royalties based on turnover.

An individual-level measure has been to change the tenor system so that both paper publications and startup initiatives count towards a faculty member's career.

Singapore's small size is also an important challenge for bridging the commercialization gap. The country's market cannot commercialize all new knowledge produced by researchers in Singapore. To be profitable, the results of fundamental research have to be exported. The response to this challenge has been to increase connections between Singaporean universities and international companies.

Many other initiatives have been launched to foster an innovation ecosystem in which research can be transferred to market. The ecosystem provides support for startups and SMEs through training and networking (soft infrastructure initiatives), and facilities (hard infrastructure). Another approach to encourage commercialization has been the Singapore-MIT alliance, which brings MIT professors to Singapore to help commercialize research. The NTU Strategic Research Innovation Fund was launched with a 10 million dollar endowment to support the best faculty spinoffs.

An individual-level measure has been to change the tenor system so that both paper publications and startup initiatives count towards a faculty member's career. The results of these varied measures can be seen in the key figures for 2017/2018: 74 licenses, 30 startups, 15 faculty spinoffs, 356 technology invention disclosures, 2.5 million dollars worth of Proof of Concept commercialization grants, and more than 5,000 students engaged in hackathons, bootcamps and workshops.

ECOSYSTEM SPEAKER

JOHAN MERLEVEDE

Director of MindGate Innovation Ecosystem
Leuven, Belgium

Johan Merlevede is the Managing Director of Leuven MindGate, a joint initiative by various Leuven actors to fuel economic and societal development. He previously worked for Sanoma Learning as well as having had a 20 year career in the ICT industry.

INFRASTRUCTURE TO TRANSLATE RESEARCH INTO BUSINESS

While the City of Leuven is rather small with a population of only 100,000, it counts a leading hospital, approximately 200 spinoffs and 55,000 students during the week. The Leuven innovation ecosystem has a strong record of translating research into business. One well know example includes Samsonite's use of an innovative material developed in Leuven. The ecosystem is built around three pillars: high tech (CMOS, sensors, cyber security, innovative materials, autonomous driving...), health (drug discovery, virology, medical devices...) and creativity (app design and development, media, arts...).

The ecosystem includes infrastructures such as the Gasthuisberg Health Sciences Campus with excellent research abilities and infrastructure, the Arenberg University Campus with its fablab, and the Arenberg Research Park with clusters for ICT and biotech, an open campus for mechatronics, and a startup campus. One initial mistake that can be noted for the Arenberg Research Park was the lack of connection with other parts of the ecosystem. If you forgot your lunch, you had to drive 40 minutes. In response, the construction of an open campus building has been launched to meet the needs of park users and facilitate interactions.

A key aspect of the Leuven innovation ecosystem is the focus on cross-fertilization between health, high tech and creativity. The Leuven MindGate initiative serves to encourage connections between research and business by bring together government actors, companies and knowledge institutes. As such, the organization is quite small with only six employees. However, its strength comes from 300 plus members whose support enables MindGate to promote the Leuven ecosystem at an international level, in particular in terms of high tech, health and creativity. In addition, MindGate fosters interactions between members by organizing activities such as workshops, networking events, and sessions to share knowledge, best practices and experiences.

Leuven's success in attracting international actors can be greatly explained by the ecosystem's collaborative approach to international promotion.

Leuven's success in attracting international actors can be greatly explained by the ecosystem's collaborative approach to international promotion. This includes collaboration between local actors as well as with other regions to promote the general attractiveness of Europe. The result has translated to numerous international, interdisciplinary interactions, a favorable environment for startups, and an attractive location to draw international talent.

ROUNDTABLE

TOMORROW'S INFRASTRUCTURES TO SPEED-UP INNOVATION TRANSFER: WHAT DOES THE FUTURE LOOK LIKE?

Moderator: **ANJANA AHUJA** Freelance journalist and contributing writer for the Financial Times
Panelists: **CHARLES W. WESSNER** Professor of Global Innovation Policy, Georgetown University (USA) | **GIANCARLO CARATI** Head of Unit, Joint Research Center, European Commission | **JEAN-FRANÇOIS DELEPAU** Chairman and CEO, Sofradir-ULIS (France) | **BENOÎT HILBERT** CEO of Air Liquide Advanced Technologies (France) | **TRAVIS HUNTER** MIT Sloan Global Programs (USA)

Q What indicators can help evaluate the efficiency of an ecosystem's transfer of innovation?

"On a macro level, you can analyze concrete results in terms of patents, licensing or other general indicators. But on a micro level you have to judge 'soft' KPIs by understanding how each program impacts at a local level. You can also look at factors such as time to maturity. A good way to shorten time to maturity is to create labs and platforms that are shared by research and business. Including engineers early on in the development process can save time as well."

"It's also important to be careful when judging speed. If you want fast, then you have to do simple software, apps, etc. Other types of innovation can take significant time. You have to take into consideration what kind of activity you're evaluating."

"There are factors such building close relationships or sharing research infrastructures that are essential to successfully transfer innovation. To speed up the process, you have to identify bottlenecks and develop strategies to overcome them."

Q Developing new infrastructures can require immense commitments in terms of funding and policy. Do you necessarily have to start out big?

"You can start out light. As you create value, follow up is essential. You have to plan mechanisms that enable you to follow through and encourage larger actions. You also need the ability to reboot and start again if something doesn't work."

"Certain critical resources will be more easily accessible if there is shared leadership."

Q How do you encourage a collaborative approach?

"It's important to have a macro and micro level approach. Develop widespread support for areas you excel in. In other areas, develop localized support such as funding for early stage projects so they can grow and garner widespread support."

"Open innovation centers enable students, professors, companies and other actors to mix and match. This type of support can be achieved through a combination of physical and virtual locations."

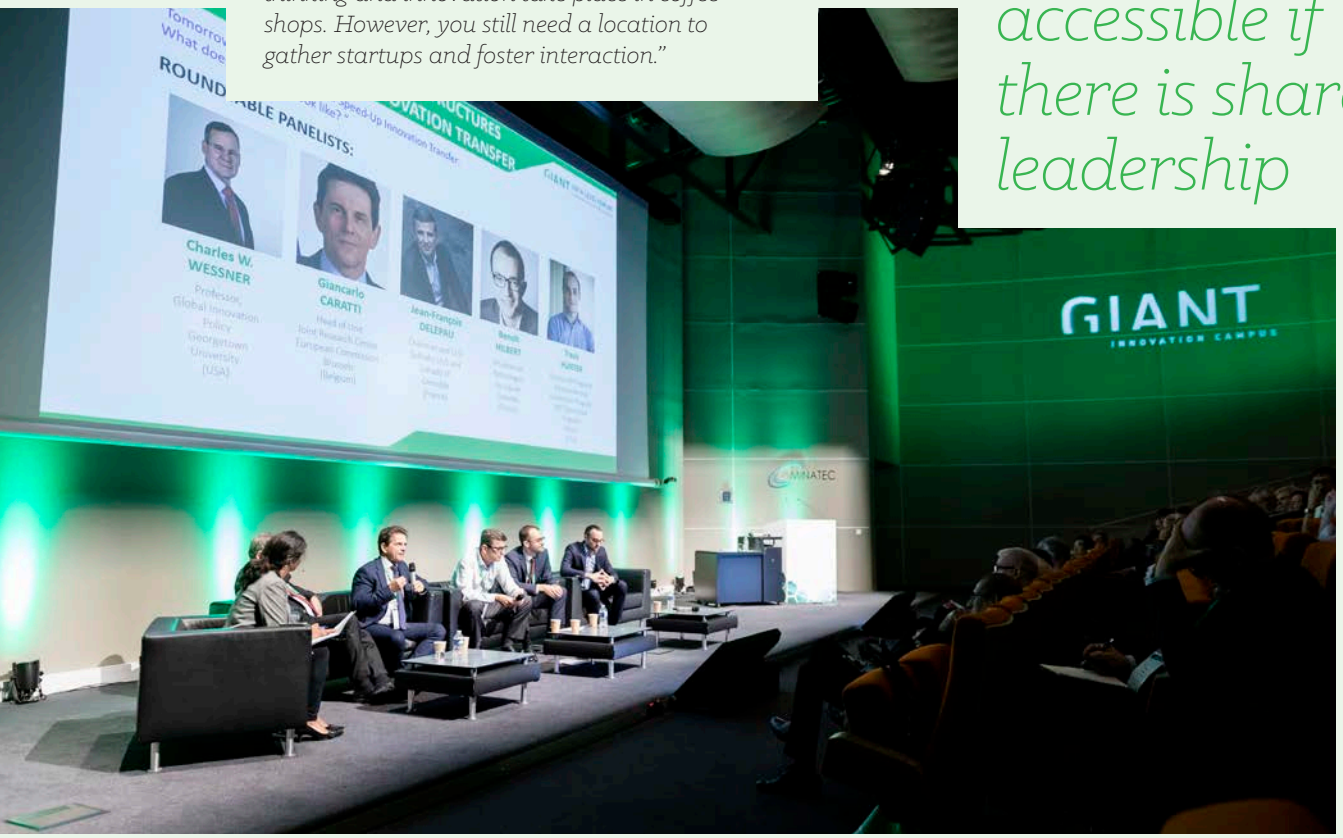
Q ***We have seen that a favorable startup environment is key for innovation ecosystems. How do you provide support for them?***

"MIT took the approach of creating funding to help startups survive the 'valley of death' between initial and venture capital. This can sometimes be a very long period that can only be managed with external support."

Q ***Are science parks outmoded?***

"There are different types of science parks. Some are just real estate deals. Others, the good ones, create an interesting biodiversity that boosts innovation. But times are definitely changing. We often hear now that creative thinking and innovation take place in coffee shops. However, you still need a location to gather startups and foster interaction."

Critical resources will be more easily accessible if there is shared leadership



GUEST STAR

INSTITUT PAUL BOCUSE

The Institut Paul Bocuse is a showcase for French know-how and etiquette in the realm of culinary arts and hospitality. Historically presided by founder, Paul Bocuse, and Chairman of the Board of Directors, Gérard Pélisson, the Institut Paul Bocuse welcomes 1,000 students from 50 countries thanks to six international campuses. The school offers excellence in training for hospitality, food services and culinary arts management.

WWW.INSTITUTPAULBOCUSE.COM

During the second lunch at the High Level Forum, delegates had the opportunity to discover innovation from another sector. This year, the forum invited guest speaker Dr. Agnes Giboreau from the Institut Paul Bocuse, where she is Director of the Institute's Research Center.

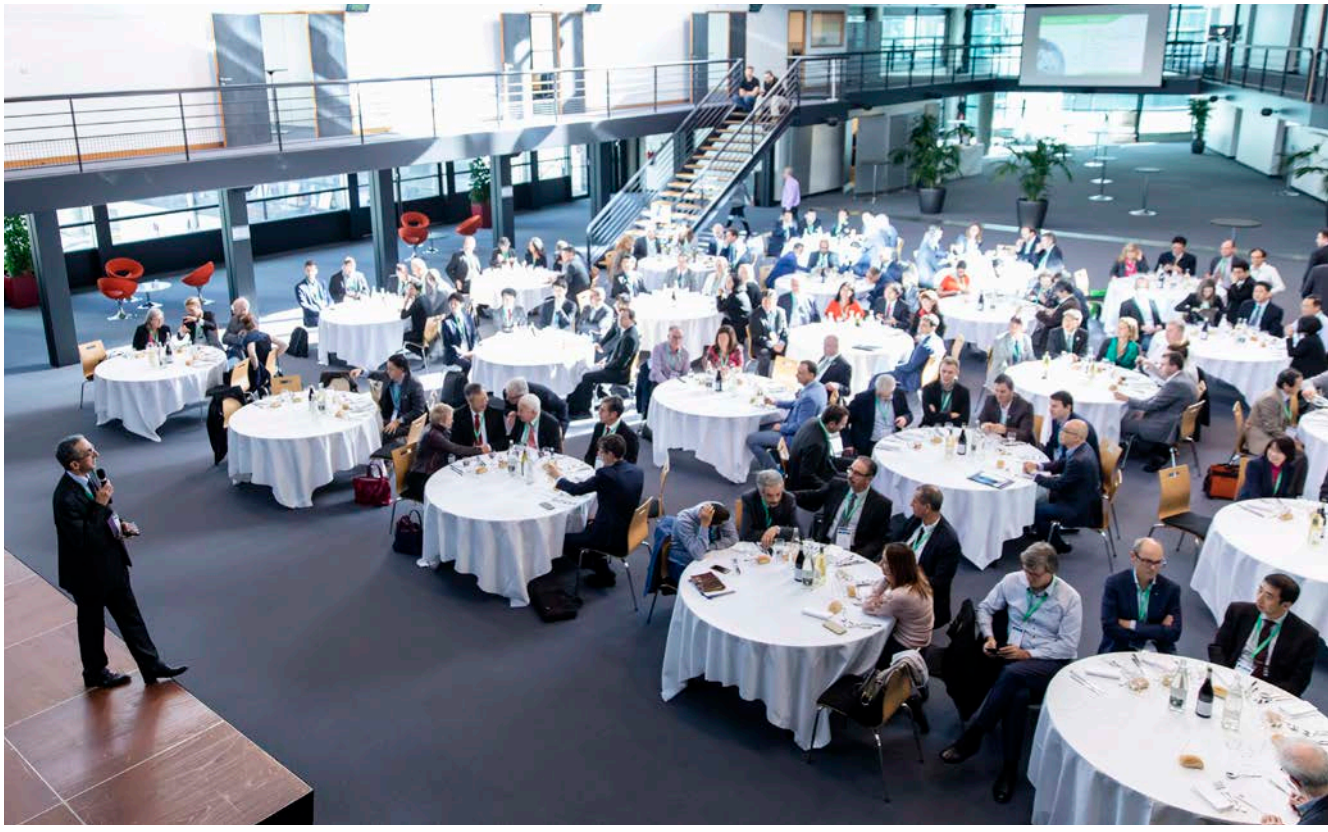
With its focus on culinary arts and hospitality, the Institut Paul Bocuse is a unique school at the heart of French gastronomy. The school's 1,000 students from around the world have the opportunity to participate in various programs from vocational training to management training thanks to a bachelor's and master's degree delivered in collaboration with a management school. In addition, the school offers a doctoral program in partnership with a university that enables participants to focus on research related to the culinary arts and hospitality.

While the school's innovative pedagogy includes the world's first bachelor's and master's degrees in collaboration with a management school, innovation is also at the heart of the Institute's research center, where researchers focus on five levels of scientific research: socio-cultural, behavioral, cognitive, physiological and applied. An innovation group also focuses on products and services for buying food and beverages.

The Institute's chefs collaborate with partners looking to develop cooking equipment. They offer feedback at various stages from design to the final product. A living lab enables researchers to carry out live experiences with customers and investigate how various factors can impact issues such as food choice (vegetarian or meat), food waste or nutritional value. Such concrete studies and experiments enable the Research Center to produce new knowledge for the culinary arts and support the Institute's mission to encourage tasty and healthy eating habits.

The school's innovative pedagogy includes the world's first bachelor's and master's degrees in collaboration with a management school.

PAUL INSTITUT BOCUSE



High Level Forum
GOVERNANCE

The High Level Forum represents a growing community of innovation ecosystems in which the active participation of member delegations is essential. As a result, this seventh edition once again offered delegations the opportunity to discuss the forum's strategy, organization and governance. The key figure of this year's meeting was without a doubt the fact that the forum has tripled in size since its start in 2012 (growing from 11 countries to 33).

The governance meeting began with a presentation of the current High Level Forum vision: To be recognized as the international forum for leading innovation ecosystems. As well as the forum's mission: To promote innovation through collaboration between leading innovation ecosystems in order to provide added value for ecosystems and humanity.

Following the decision in 2016 to create an executive committee, this year's meeting on governance was the opportunity to present the current committee members. The committee was set up in early 2017 and includes seven members. Alain Astier, the forum coordinator, highlighted the fact that the committee has been very active. Committee members took part in six teleconference meetings since the 2017 forum.

THE EXECUTIVE COMMITTEE: WHAT'S NEW?

The committee set a minimum 3-person rule for new delegations in order to encourage a good mix of research, industry and government. The committee encouraged the creation of an enriched forum program (ALL-IN workshops, conference dinner, HLF award, and ecosystem networking day). Committee members were active in seeking out new, high quality innovation ecosystems and finding valuable speakers for this year's forum. The executive committee also validated the 2019 forum theme and location.

QUESTIONS FOR THE FUTURE

After presenting the work carried out over the past year, the committee offered several questions for participating members to consider:

1. Should the committee recruit one or two new members to account for the growing size of the forum's international community?
2. Should a registration fee be implemented to help cover increasing forum costs?
3. Could regional forum coordinators be an effective means to promote the forum?
4. Should the committee attempt to reconnect with ecosystems that no longer participate?
5. The forum has traditionally been held in Grenoble every other year. Should this format continue for the 2020 forum, or should the committee explore other locations?

Following a participant's question concerning KPIs for the forum, Alain Astier shared that this year's forum took a first step by implementing a satisfaction survey in order to gather more precise feedback. Another delegation commented on the increasing number of industry participants and the fact this was a positive evolution. It was noted that receiving feedback from this year's industry delegates could be useful to better understand the expectations of future industry participants. Finally, the question of providing a means to share best practices after the forum was addressed and everyone agreed upon the importance of finding an effective solution to share success stories and best practices.

2018 High Level Forum
CONCLUSION

INFRASTRUCTURES: A MAJOR CHALLENGE FOR RESEARCH, INDUSTRY, ACADEMIA AND GOVERNMENT

Once again, the 2018 forum hosted representatives from research, industry, academia and government. A warm welcome by local actors kicked off an intense and innovative forum. This year's closing speech was delivered by Patrick Levy, president of Université Grenoble Alpes.

PATRICK LEVY

President
Université Grenoble Alpes

The seventh edition of the High Level Forum was extremely active and lively. I would like to extend a special thanks to all of those who made this event happen, and in particular the GIANT organizing team. Every aspect of the forum, from the coffee breaks and dinners to the ALL-IN workshops was inspiring.

In summarizing this year's forum, we can definitely all agree on one fact: the challenge of infrastructure is massive. Building new 'hard' infrastructures is difficult both in terms of financing and garnering the required support to ensure a project's success. However, as important as this challenge is, we also focused greatly on the topic of 'soft' infrastructures such as our local community's effort to create a unifying framework that will enable our schools and universities to join forces. Although more discussion is needed to thoroughly define soft infrastructures, we can agree that in the future, such frameworks will be just as important, if not more so, than hard infrastructures.

In analyzing and sharing about our ecosystems, it was evident that each system has a unique mix of characteristics such as niche markets, startups or living labs. And each ecosystem faces challenges in attracting and keeping the talent it needs to ensure innovation. Other factors essential to an ecosystem include the participation of major companies as well as the creation of a physical location that can enable all players to mix, mingle and collaborate. Diversity is essential to creating a collaborative vision.

Storytelling was highlighted as one particular difficulty common to many of us. As we transition towards smart cities and greater high tech innovation, communicating efficiently with local audiences is a critical task. By improving storytelling and integrating ethical and societal considerations, we can avoid the risks of an 'egosystem' and encourage the active participation of our citizens.

While this only covers a fraction of our many discussions, we can conclude this year's forum with the certainty that it is a unique event with fundamental added value for our innovation ecosystems.

THANK YOU FOR YOUR PARTICIPATION IN THE 2018 HIGH LEVEL FORUM.

GIANT | HIGH LEVEL FORUM
Leading Innovation Ecosystems

ARE YOU READY FOR THE

2019 High Level Forum

IN LUND, SWEDEN?

As with every year, the 2018 forum concluded with an invitation from next year's forum host. In 2019, the High Level Forum will take place **from Oct. 13th to 16th in Lund, Sweden.**

AND THE 2019 HIGH LEVEL FORUM THEME IS...

Sustainable Innovations in a World of Data

In Lund, Sweden, next year's delegations will partake in a lively discussion of strategies and perspectives on areas related to big data, artificial intelligence, machine learning, cybersecurity and other data management topics.

The Forum will be held in the City of Lund, which is home to key ecosystem players such as the Ideon Science Park, Lund University, Medicon Village and the Science Village Scandinavia. The local ecosystem specializes in areas such as Life Sciences, Smart Cities, Future Transportation and Smart Materials. The European Spallation Source also offers international researchers access to what will be the world's most powerful pulsed neutron source.

MIA ROLF

CEO of Ideon Science Park
Lund, Sweden

INTERVIEW

LUND READY TO HOST THE 2019 HIGH LEVEL FORUM

We speak with Mia Rolf, CEO of the Ideon Science Park in Lund, Sweden. As Lund prepares to host the High Level Forum in 2019, she shares with us the Swedish perspective on the forum and its community of ecosystems.

Q Why does your ecosystem participate in the High Level Forum?

We have actively become engaged in the High Level Forum for several reasons. The forum is a unique opportunity to meet an international community of innovation ecosystems. It is very interesting to share experiences with delegations from around the world. This enables us to benchmark our efforts and progress. Each time I participate, I learn a lot from speaking with people during the networking activities and workshops. Finally, the forum is an efficient means to quickly connect with actors from around the globe.

Q What did you appreciate about this year's forum?

While the high-level speeches continue to be an important part of the event, I appreciated the fact we are moving from presentation towards interaction. The new workshops and networking activities provided more opportunity for discussion with international counterparts. Another positive aspect is that the forum is still small enough for me to meet and talk with all the various delegations in only a couple of days. It is an informal yet well-prepared event. By changing the theme year after year, we are able to cover the wide spectrum of issues that affect our ecosystems.

Q Next year's theme will focus on data. What is your perspective on the theme and how is it a good fit for Lund?

Almost everything is becoming digitalized. Many things are connected, directly or through the internet. As a result, how we store and share data in a secure and open way has become an important subject of discussion. Trying to harmonize our approaches in various ecosystems around the world is a real challenge, but it will facilitate access and exchange at an international level. Data and its challenges is a theme that is definitely a hot topic and requested by participants.

We will be able to explore data management from two angles: First, how we can help organizations store and share data in a safe manner. And second, we can consider data in terms of benchmarking. With the digital transformation of our ecosystems, what new data is available and how can we capitalize on it?

Lund has been involved in IT and IoT development for 35 years. Some of our largest companies focus on the transfer of data. And a variety of actors are moving into new sectors such as automated and connected cars. The theme is definitely at the heart of our ecosystem.

SEE YOU NEXT YEAR IN LUND, SWEDEN!

GIANT | HIGH LEVEL FORUM

Leading Innovation Ecosystems

hlf-giant-grenoble.org

VILLE DE GRENOBLE

GIANT INNOVATION CAMPUS

GRENOBLE ALPES MÉTROPOLE