



IASP2021
VIRTUAL

Beyond disruptions and resets:

The resilience of innovation ecosystems



Knowledge sharing in virtual times

38th IASP World Conference on Science Parks and Areas of Innovation



International Association of Science Parks
and Areas of Innovation

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FOREWORD

People come together 'to weather the storm'

The last year has shown us the extraordinary capacity of innovation ecosystems around the world to cope with a crisis, and to go from strength to strength even under the most challenging of circumstances.

That's why our 38th World Conference chose to focus on "Beyond disruptions and resets: the resilience of innovation ecosystems", allowing us to take an in-depth look at the theme of resilience as our community came together for a second virtual World Conference on September 28-29.

Global experts and practitioners explored the ways science parks and areas of innovation have continued to support their communities, companies and entrepreneurs during the pandemic, the increase in collaborations, and how people came together to weather the storm.

Opened by IASP Chairman Paul Krutko (USA), the event saw multidisciplinary speakers share their perspectives on the value of innovation and how it happens; corporate innovation and collaboration with startups, and how innovation ecosystems can be the bridge that connects them and helps them work successfully together.

But we didn't only look back at what our innovation communities have already

done: we also talked about what's to come in the future and how the unprecedented times we are living through will shape the world of work in general and our industry in particular in the times ahead.

Panels discussed the changing face of community building in a digital world, and we welcomed resident companies who went into detail about the value of locating their businesses in science/technology parks (STPs) or areas of innovation (AOIs), underlining the fact that in-person interactions and quality spaces where entrepreneurs and knowledge workers can convene remain as important as ever.

With a fast-paced networking carousel, book presentations and a digital magician to provide the social aspects every community needs to feel connected, IASP 2021 Virtual offered condensed knowledge-sharing to a global audience.

On the following pages you can read more about all the multidisciplinary discussions and the key topics that we explored, helping you stay on top of all the latest trends in science park and area of innovation management around the world.

Ebba Lund
IASP CEO

“The **unprecedented** times we are living through will **shape** the world of work in general and our industry in particular in the times ahead



Ebba Lund, CEO of IASP



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* Conference moderator:
Kjell Lutz,
Masters in Moderation,
The Netherlands

We're working towards deadlines set by the planet



Darja Isaksson, Director General of Sweden's innovation agency, Vinnova

Sweden's population of just 10 million would rank only as a major metropolitan area in the largest countries, but its reputation as a global centre of innovation has long outweighed its size.

From the 1740s, when Anders Celsius conceived the Centigrade temperature scale, to the 1950s, when Nils Bohlin designed the three-point safety belt and Rune Elmqvist created the first pacemaker, its collective achievements earned international acclaim.

Into the 21st century, and Sweden's status as a global source of innovation was maintained when Adam Dunkels discovered how to interconnect smart objects, and Markus Persson brought pleasure to millions of gaming devotees via his Minecraft video concept.

As the topic of the opening session of IASP Virtual 2021 was how innovation might accelerate societal change, there was no better qualified candidate as keynote speaker than Darja Isaksson, Director General of Sweden's innovation agency, Vinnova.

Noted for her passionate presentations, she held the audience's attention via their screens around the world right from her opening remark.

"There is no more important topic

to discuss right now than innovation, because at this point (for ourselves and for the planet) it is an existential issue," said Isaksson.

"If there's anything we learn from the pandemic that we're still living through,

it's that the biggest challenges of our time are global, complex and really urgent.

"We're seeing serious vulnerabilities in the way we've organised global value chains related to everything from food and pharmaceuticals to electronics and raw materials, and how we manage resources, planetary and human.

"We have also seen inadequacies in how we prepare, prepare for and act in crisis, and we also have to acknowledge that the current innovation system and paradigm, in which we were all trained, has to change."

The audience's focus intensified as Isaksson bluntly reminded everyone that radical change was required – and that it had to happen now.

"Business as usual is just not enough. We are working right now with responsibilities of various kinds. We are a generation working towards hard deadlines, and those deadlines are set by the planet," she said.

"It cares very little for our risk appetite for our innovation capacity, or our willingness to invest and cannot be negotiated with.

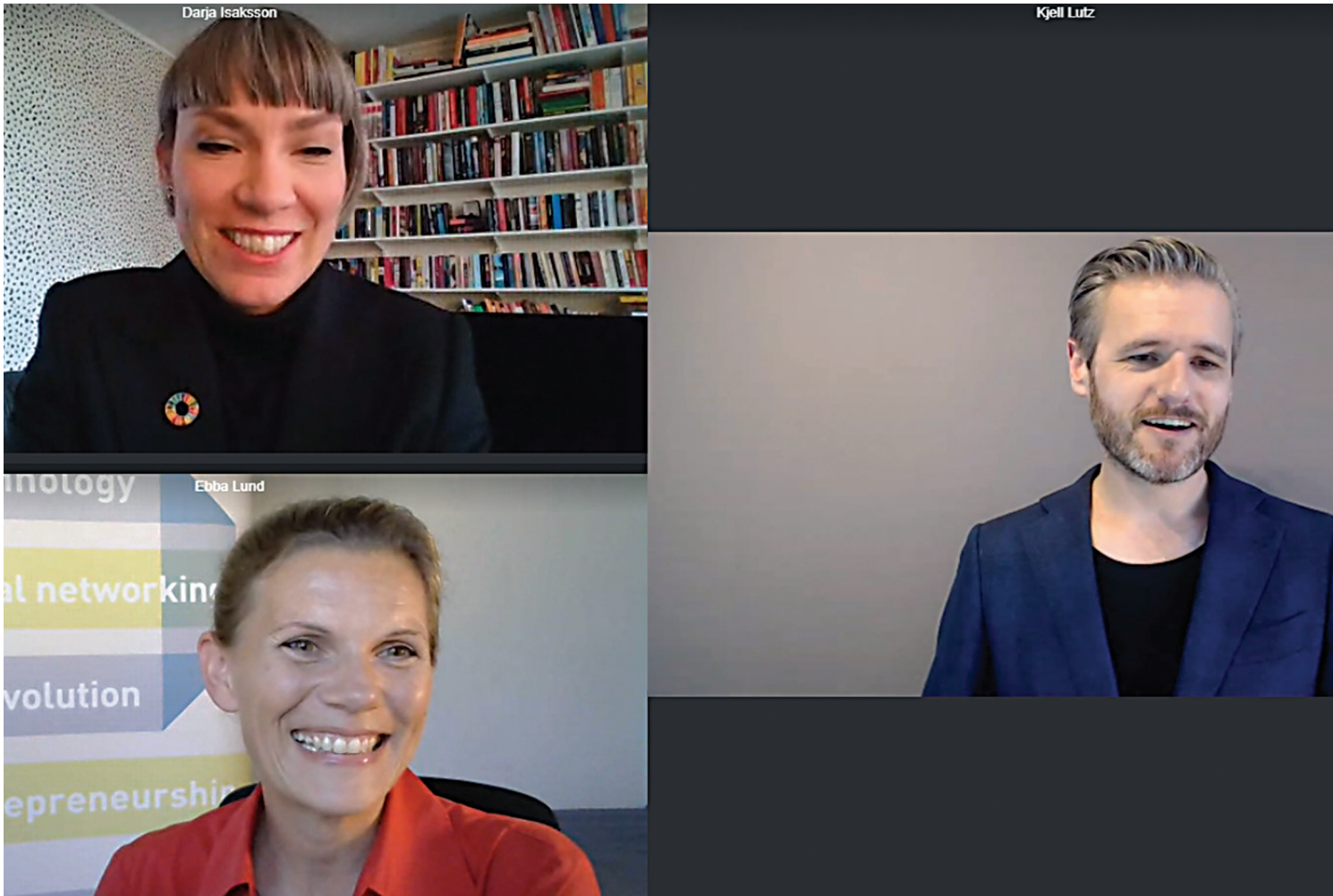
"We simply have to transform our society now to function within planetary boundaries and in a socially sustainable way. And on that journey, we are already living in what scientists call the decisive decade. The 'make it or break it' decade.

"Not for the planet. It will be fine without us (in time). but for the future of human society.

"We should now know that we are the last generation in human society with the opportunity to transform every sector, every value chain, every city and every consumption pattern into something sustainable.

"And if we succeed – or as I prefer to say, when we succeed – our children will thrive in a world that's better than the one we're leaving behind."

Isaksson's carefully crafted message of a looming apocalypse clearly struck home with delegates from science parks and areas of innovation, and it was easy to understand why the business magazine Veckans Affärer, astutely identified her as one of Sweden's most



influential opinionmakers back in 2016.

Veckans later became a casualty of the digitalisation of publishing, but Isaksson will hopefully be here for decades to come, as her commitment to change will be sorely needed, not least to motivate and encourage others.

She identified four key sectors which can drive change into society.

- Energy:
"We must accelerate the transformation of our energy systems to become fossil free, and able to manage a previously unheard-of level of complexity.
"This is not just a matter of investment into physical and digital infrastructure. It will require new solutions for storage, innovative adoption of AI - and more. Behaviours must also change because policy shifts and technical solutions aren't enough in themselves."
- Mobility:
"We have already begun transforming our mobility systems to become fossil-free, which requires a new generation of vehicles and other modes of transport, but again, such technology fixes will not

We simply have to transform our society now to function within planetary boundaries and in a socially sustainable way

be sufficient in isolation.

"Truly sustainable mobility must be built on business models which genuinely reward the optimisation of both goods and people. We must also aim for systems which deliver positive health outcomes in our societies.

"Collaboration between, for instance, engineers and city planners will have to reach a new level, and such issues as building codes, infrastructure planning models and greater data sharing will be

crucial influences of change."

- Food:
"Our current food systems are neither sustainable, healthy or resilient, and must be redesigned to become regenerative for both people and the planet.
"We need greater innovation and research into new food types and methods of production, but also into the business models and incentives which shape our behaviour and influence our culture, preferences and purchasing habits."
- Health:
"The world is grateful that the pursuit of knowledge and innovative technology has enabled healthcare providers to save more lives in such a short period than ever before.
"We witness daily the rapid application of new technologies which promise even more amazing future outcomes, but equally, innovations are also required, not only in medicine and technology, but in models for risk and



AI-enabled robot designed in Sweden

We're working towards deadlines set by the planet



revenue sharing.

"We need new and radical policy frameworks too, and only by combining all these elements effectively and productively can we deliver the health equity urgently required for society to prosper."

Sweden has long embraced dialogue and consensus, but it's also a nation which places high value on ethics.

In 2007, it underlined its commitment to the cause of public transparency by becoming the first country to establish a Council on Ethics to monitor its national pension funds, so it was no surprise to hear Isaksson address such issues.

"We must involve the right stakeholders to address perspectives of importance outside technology and business, such as behaviour, ethics and policy," she said.

"We're all learning as we go and need to consider how we educate the next generation of leaders, but also how we help and reskill people already in the workplace so everyone can help to

drive change into all aspects of society.

"Equally, when we look at potential solutions and innovations, we must think about the choices we make in relation to the data we use, and about what wider perspectives we wish to adopt."

Isaksson reflected on the pace of change and its impact on individuals.

"Sometimes, we all need to take a breath, look at what has been achieved in the last two years, and dwell on our experiences. Painful as these challenges have been, they've also created massive opportunities for many people to live happier, healthier and better lives.

"If those reasons aren't enough to want to change how society works, we should be motivated by the realisation that this transformation also represents the biggest opportunity for value creation since the first industrial revolution.

"Competitiveness in this decade and the ones to come will lie in our ability to offer solutions which accelerate this transformation. Many business leaders now agree, and institutions increasingly direct their investments to prioritise

impact and resilience."

As the founder of two successful digital agencies, Isaksson understands first-hand the crucial importance of collaboration as a catalyst for change.

"Many innovations which can really make a difference will come from deep-tech companies, who need sources of capital willing to take on risks for longer than usual, matchmaking to find their first customers and open innovation infrastructures.

"They will also need help to maximise their access to global networks and markets, and access knowledge from experienced and established entrepreneurs.

"Perhaps even more importantly, we all need to help different disciplines and sectors work more effectively together, and a core element is sharing common goals and missions.

"We must support policymakers in gaining insight from our innovation ecosystems, so they can make more informed decisions about legislation, removing barriers to innovation and ways in which to stimulate public demand."

Long before the end of Isaksson's eloquent tour-de-force, a forest of thumbs-up could be seen, with delegates taking to the chat to register their agreement.

However, she reminded her audience that science parks and innovation districts had an important role in delivering change.

"We're not regulators, nor do we change norms in society, but we do operate in the middle ground between research, business and the public sector.

"How we lead, what spaces we provide, what culture we nurture, what questions we ask, and what conversations we convene are all very important.

"We all need to think about ways in which our community can create fruitful learning and productive collaboration across divides of perspectives and disciplines, to show incubators and innovation hubs at their very best."



The world's first portable DJ mixing system for use on smart phones was developed in Sweden

ANCHORING INNOVATION

THE EXTERNAL PERSPECTIVE



Transformation essential to becoming sustainable

The topic of how best to anchor innovation provoked an engaging debate which ranged from digital exclusion and technological inclusion, to sustainable development goals and the quadruple helix.

Julian David, the CEO of techUK, got the session underway by offering an overview of how innovation should be regarded.

"For me, it's not just about improving things, it's about improving people's lives, improving the economy and improving the way we address the major challenges which face us. Essentially, about looking after our planet.

"I also believe we always have to see innovation as a global issue. Obviously, my particular focus is the UK, but it's something which will impact everyone's lives around the globe."

Dr McLean Sibanda, from South Africa,

and a regional MD of Bigen Global, was very much in accord with such an international perspective.

"Societies evolve because of innovation, and as Julian says, it has to be cross-cutting. Innovation is everywhere in our lives, whether at work or home. If you have a problem, you innovate.

"At the business level, for instance, innovation is typically about such core issues as how to grow revenues, how to have a real impact on your customers, how you retain them in the face of competition and how you reduce the cost of goods.

"However, at the technological level, I think we should adopt a broader and more inclusive definition of innovation, which recognises that it can come from anywhere -- as we saw during the pandemic -- and continue to see with

the emergence and identification of other variants."

Dr Jan Breiting, a senior project manager at Bertelsmann Stiftung, agreed with the previous speakers, but also found favour with Darja Isaksson's wide-ranging philosophy from the conference's opening session.

"It is about improving and a means to improve economic competitiveness, but it's also about societal progress, and about transforming both our societies and our economies to become sustainable.

"We have to include discussions around which tools, instruments and policies might help us to overcome all the big challenges, and here the question is what tools our community



Transformation essential to becoming sustainable



can use.

"I believe that science parks, innovation districts and any other similar structure which facilitates collaboration and participation can bring different sectors and different stakeholders together, first to identify the problem and then to find tailor-made solutions.

"Right now, I think we also need to integrate the perspectives of civil society to make sure we can steer innovation towards goals which are socially desirable."

His comment brought Dr Sibanda back into the conversation, to agree, and to suggest that the concept of a 'triple helix' had become outdated.

"I think we should be talking about the quadruple helix because so often in the past society has been left in the margins. For me, you cannot innovate without actually knowing what society requires.

"We're living in a time where markets are essentially being dictated to by their customers, and whether you are a government official, an entrepreneur or working for a non-profit it is very important to listen to what society is saying, what its needs are and what challenges it faces."

"I think we started looking at the ethics around innovation four or five years ago, but there's no doubt that the debate has intensified over the last two years," said David.

"I think we also need to bear in mind that although we in the tech industry are very fond of talking about disrupting a particular sector or niche, that it doesn't feel so good when disruption happens to you.

"For instance, a lot of people said

“The outcomes are much better if everyone works **together**, but that hasn't taken away all the other **human influences** and populist interests which stop us working together



Dr Jan Breiting, a senior project manager at Bertelsmann Stiftung

everyone was in this together, but it obviously hasn't worked out that way. Some countries are taking boosters, whilst large parts haven't yet received any vaccines.

"We've seen, and continue to see, that the outcomes are much better if everyone works together, but that hasn't taken away all the other human influences and populist interests which stop us working together."

"Absolutely. I think this remains one of the biggest challenges," said Dr Sibanda. "As the president of South

Africa has said repeatedly, no-one is safe until everyone is safe.

"There are huge issues about how we might transfer technology, even if it's just for the period of the pandemic, and also around how we then boost innovation capacity in different areas of the world."

David was clearly in accord and suggested that the point raised by Dr Sibanda was a key challenge facing science parks and innovation districts.

"Quite clearly, you need centres of excellence, but we also really need to reach out beyond our individual campus, beyond a particular place and beyond the country where we are based, and to see a much bigger picture.

"Just as the pandemic revealed some good practice, but also examples of where people and institutions were clinging to old ideas and ways, then if we are now going to seriously tackle climate change, we will all have to think and act more broadly.

"We shouldn't have needed the discussions before, during and after COP26 to make us realise that the people who have the money, the resources and the innovations need to provide them to the people who don't."

Dr Breiting was in general agreement, although he pointed out that the logic of societal problem-solving faced the logic of market forces.

"It's tricky. On the one hand, of course, we need the creative forces of the market to focus on start-ups in order to develop hi-tech solutions to our problems, but at the same time, we have to talk about how we can distribute resources more equitably and make them more widely accessible.

"I think for us as policy-makers, this is one of our largest challenges. We have to look at both aspects, and to try to resolve the inherent conflicts of the different stakeholders."

The discussions then moved on to consider issues around digital exclusion, which David believed had been highlighted during the pandemic.

"It's now clearly seen that many



people are missing out, and I don't think the scale of the challenge was previously realised. Many people here, particularly if you look at education provision, don't have access to the digital tools they require," he said.



Julian David, the CEO of techUK

Dr Breiting revealed that in Germany, many people within the political and policy-making communities were focused on defining what the state and society wanted, and what targets might be set to help achieve those goals.

"We talk a lot about mission orientation, with regard to climate change and also about making society more resilient should there be another global pandemic," he admitted.

"The big question is how to define our goals. Yes, we say that innovation should serve not only economic, but also societal purposes, but then what is the goal we are aiming for?

"We need to come to shared understandings, and then need mechanisms to achieve our goals, but of course we need to actively involve all the other stakeholders to play a role in innovation."

Dr Sibanda then returned to a previous comment by David about the difference between invention and innovation.

"He's right of course, because innovation is just an idea, whereas an invention is being used in the marketplace, and for it to make that journey there has to be a policy landscape in place which enables things to happen.

"I think we also need to look at innovations in a different way. They shouldn't be just about profit; they

should also be about doing good."

"I think scientists and innovators need leadership on these issues, and leadership with purpose," suggested David.

"We got vaccines so quickly because the government wanted them, and the people wanted them, and the two elements need to be joined up on policies."

Dr Breiting highlighted examples of research projects in Sweden which were established according to the sustainable development goals (SDGs) of the United Nations.

"I found it an interesting approach, because a science park or area of innovation which aimed to foster sustainability would usually need to define or build a target framework on its own, which could be very complex.

"However, these instances show that such an institution could use the SDGs as a framework for their work. It was very powerful and inspiring, and the orientation of the framework is also internationally understood."

David contributed an intriguing coda to the discussions by pointing out that innovation didn't have to be large-scale.

"It's a long time since the Japanese pioneered the concept of achieving progress by small steps, and the idea of incremental innovation is just as valid and relevant today." ■

Unique insight into how IASP members coped in difficult times

One of the key elements in IASP's focus on knowledge sharing has long been the association's triennial global survey.

Based on data shared by IASP members in 42 countries worldwide, it paints an up-to-the-minute picture of science parks and areas of innovation around the world, providing an overview of the science park (STP) and area of innovation industry (AOI) and all its latest trends. The survey offers unique insights into how innovation ecosystems continue to evolve even during the pandemic, and how they coped during the pandemic and the disruption it caused to daily life.

That's why even though full analysis won't be complete until 2022, IASP CEO Ebba Lund wanted to share a preview of some of the data from the latest Global Survey at IASP Virtual. "As this data has been collected during the pandemic, it gives us a really unique picture of how innovation hubs have managed in difficult times," she said.

Although the pandemic presented huge challenges to almost every sector in every country around the world, this survey provides hope, showing the many ways in which IASP members have adapted to the circumstances, and highlighting their optimism for the future.

One of the findings from this year's survey was the range in ages of STP/AOIs in the IASP network, with members having a relatively balanced distribution. 28% were founded more than 25 years ago, 37% between 11 and 25 years ago and the remainder having been created in the last 10 years.

"One of the aspects that really adds more wealth to our network is the fact that we have veteran STP/AOIs coexisting with new STP/AOIs.

"This is enriching for both, as the older projects can see what newer ones are doing, whilst the new projects can learn from all the accumulated knowledge that we have within our network."

Lund also emphasised the urban location of respondents. "We can

see that 83% are stating that they are located in cities of varying sizes whilst we only have 17% who are not based in the city. This urban element is something that we knew but this is a confirmation of STP/AOIs being an urban phenomenon."

"This alliance between STP/AOIs and cities is a topic that we have been emphasising over the past few years", Lund noted. "But although location is important, so is what our members do and what they host. Here we have seen some interesting changes since the last survey in 2018.

"Electronics and computer science have dropped out of our members' most hosted industries, and we have now seen the energy and AI sectors enter the list". Lund is keeping a close eye on these developments to allow her to adapt IASP's services to best suit its members.

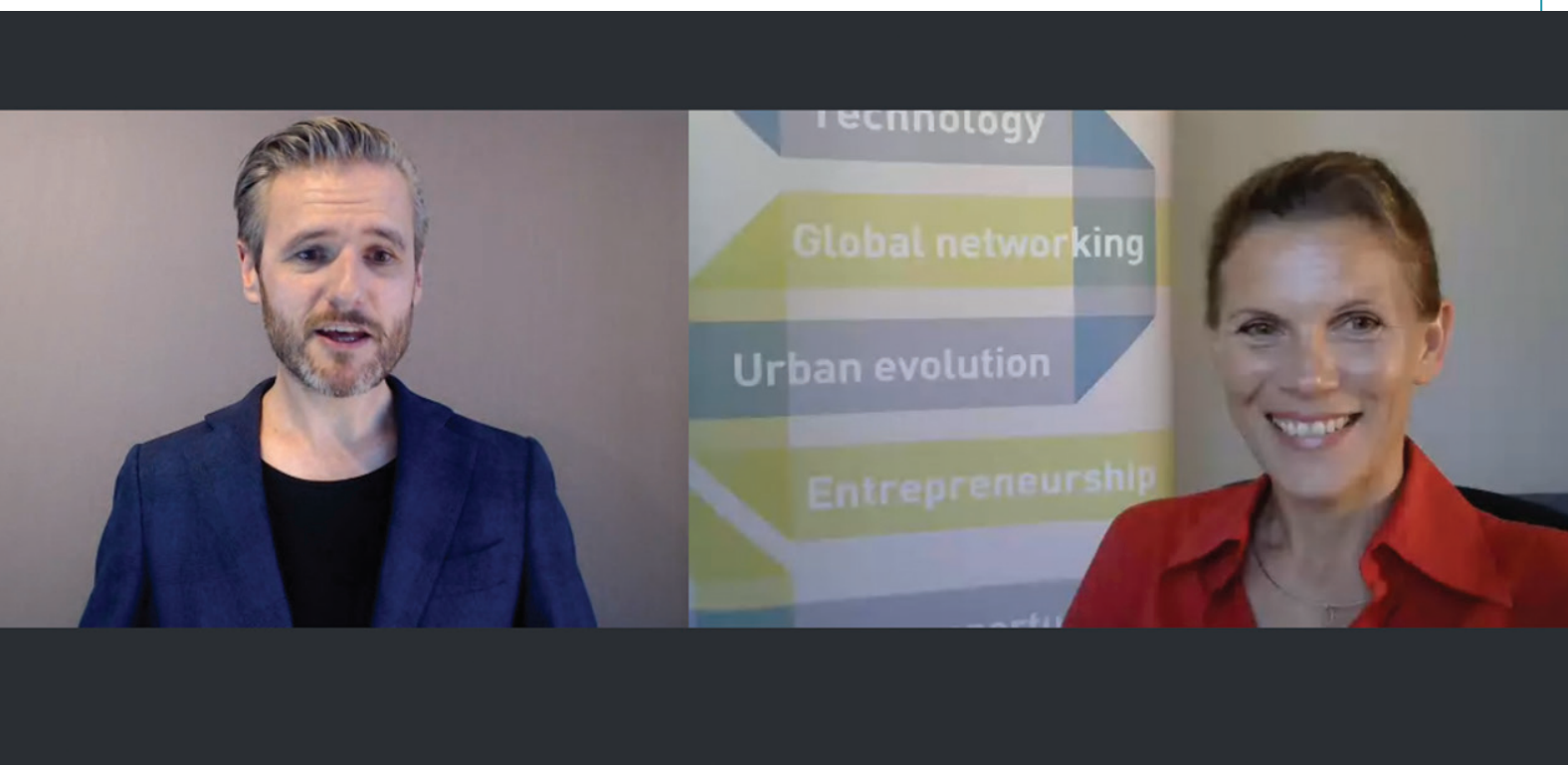
"These are really relevant changes, and something we will look at in more depth at our 2022 World Conference in Seville, with the main theme of green and digital change."

The survey also looked at the most important success factors for STP/AOIs. "The analysis of this question offers interesting insights, with the image and prestige of the innovation hub remaining at first position in this list. This has been the case also over the last few years and is really valuable for resident companies."

"The importance of location has changed, however. It used to be second place in this list and this year has dropped to sixth."

For Lund, changes to working patterns brought about by the Covid-19 pandemic are clearly responsible for this decline. "Although we can say it's still a really important factor it's now viewed in a different way. All of a sudden we had to work in new ways – remotely – and the significance of location is counterbalanced by other aspects."

"At the same time, working from home probably also brought people to realise that working together and



Session moderator Kjell Lutz and IASP CEO Ebba Lund

being in networks are not just exclusively linked to physical proximity.

"We've seen local networking, alliances with universities, links to other institutions and collaboration with other residents have actually been reinforced. However I would not be surprised if the relative importance of location once again rises once we get back to normal working patterns."

This belief in a return to normal working patterns is reinforced by the survey's findings, according to Lund.

"We asked about the demand for office space, and 65% of respondents do not expect their companies to reduce office space requirements as a result of the pandemic," she said.

"It seems that precisely after many months of remote working, entrepreneurs look forward to fully using these joint spaces and connection points to share knowledge and ideas

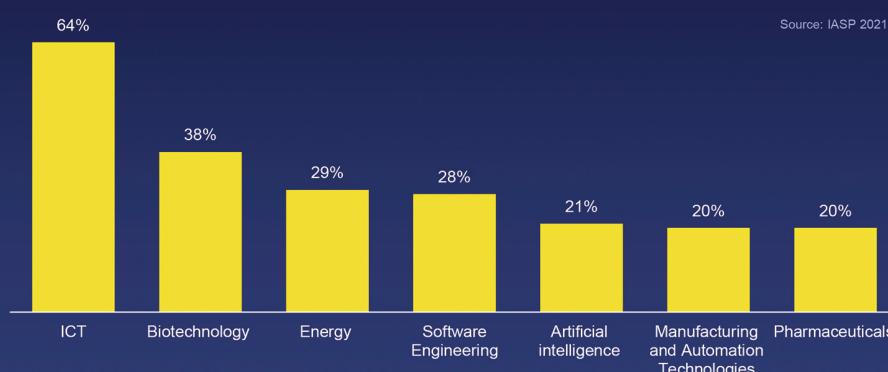
directly, just like all of us in our network."

Along with a trend of working from home, the pandemic also brought with it a global financial impact that Lund stresses the STP/AOI industry hasn't been

immune from. "50% of respondents have seen a financial impact and another 16% expect to see one," she said.

"Nevertheless, the impact seems to be

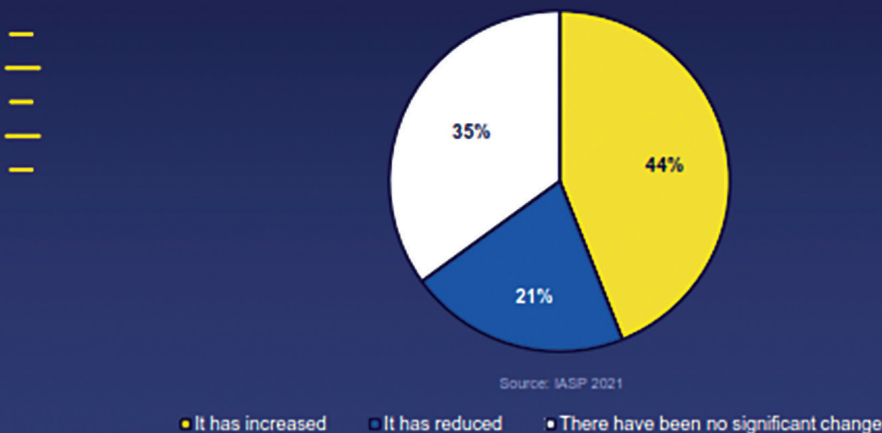
03 Main technology sectors present in STPs/AOIs



Source: IASP 2021



07 Variation in the number of resident companies in STPs/AOIs over the last 12 months



Source: IASP 2021



It has increased It has reduced There have been no significant changes

Unique insights into how our members coped in difficult times



less dramatic than what was expected at the beginning of the pandemic.

Further analysis of this data shows that only 11% of respondents were affected heavily and 27% moderately, figures Lund views with cautious optimism.

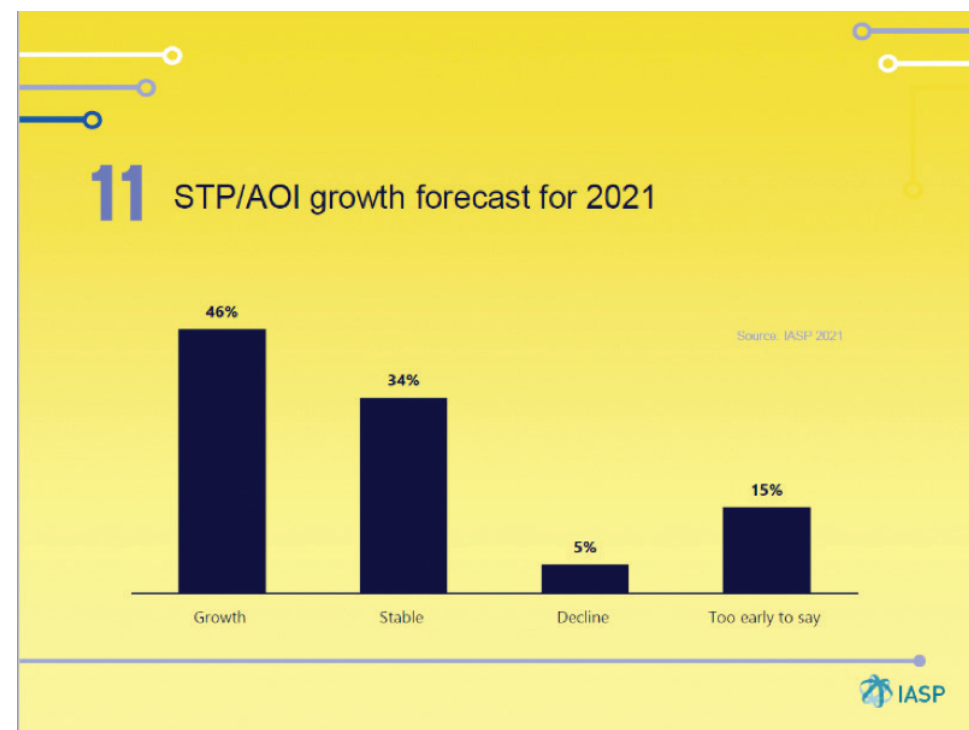
"With a phenomenon as global and vast as the pandemic there would always be a financial impact, but all in all, it seems that our members have navigated through the storm relatively well."

"The variation of resident companies is also interesting because we can see that 44% of STP/AOIs have increased the number of resident companies, with 21% seeing a reduction. So whilst the financial impact has not been too big, we've seen an impact that is actually more on the positive side. Whether this is due to virtual tenants, or also conventional companies suddenly finding more value in being part of an innovation community, will be fine-tuned by us at IASP."

A clear picture of which companies have taken the biggest economic blow emerges from the data too.

"We can see that smaller companies, startups and SMEs are the residents in our members' communities that have suffered a heavier impact," Lund explained, with 57% of SMEs and 50% of startups suffering an economic impact.

"Whilst these companies have had really difficult times, we can say that



within a community like ours they have certainly not been alone. The value of the STP/AOI setting to support your entrepreneurial journey and inspire is obvious."

This support is highlighted in a pivot STP/AOI management teams have made, with 44% having more contact with their residents than before the pandemic. Lund views this as a huge advantage for both IASP members and their companies. "Networks in STP/AOIs have been reactivated, which is a very

positive feature", she said.

The IASP chief executive went on to emphasise her optimism for the future of the STP/AOI sector.

"Of course our industry will be reflecting and getting ready for changes, so we wanted to ask our members about their expectations for the future. I'm really pleased to share that overall, our industry and people in our network are expecting growth," she said.

With 95% of members not expecting to decline over the coming years and 44% predicting growth, it's an optimism based on solid data.

"This report from IASP presents a panorama that notwithstanding the crisis we are in, can be seen positively", Lund said.

"I also think it really serves the story of resilience that we are touching on in this conference regarding how our members have managed the crisis."

The complete IASP Global Survey 2021 report will be published in early 2022 ■

“We’ve seen local **networking**, **alliances** with universities, links to other institutions and **collaboration** with other residents have actually been reinforced, and I would not be surprised if this will change the picture once we get back to a normal pattern of work

Worldwide crisis sparks risky strategies

Catastrophe is always a catalyst for radical change and the pandemic stimulated growth throughout the international science park community, although inevitably there were casualties.

Albert Wong, CEO of Hong Kong Science & Technology Parks Corporation, admitted some tenants had failed to survive the multiple challenges of the last two years, but said the current number had swelled by some 20% from the pre-pandemic figure and had now passed the 1,000 mark.

"The number speaks for itself, and it's also been particularly interesting to see how many tech companies have been taking new approaches," he said

"I believe they thought they hadn't anything to lose, so they might as well start trying something slightly more risky.

It was also notable how many different innovations came forward from tenants.

"We saw new ideas, especially in robotics and rapid-testing diagnostics, because the pandemic challenged people to think if their previous assumptions were still correct and if there were new approaches and strategies.

"In Hong Kong, partly because of the new conditions and partly because of government policies, we saw people become more daring. Now I think we have to really encourage this mindset."

Lena Miranda, CEO of Linköping Science Park in Sweden, said the pandemic had strengthened the feeling of community because people were facing shared challenges, and working from home had also acted as a 'fast forward' for digitalisation.

"We saw industries transforming their models because they had to stay competitive, which meant a lot of innovative thinking from new companies and established ones.

"As Albert experienced in Hong Kong, we saw many politicians and civil servants become more pragmatic about policies and regulation, because, for instance, new supplies and different materials were required in hospitals.

"New solutions were needed for society, and as that awareness spread across all sectors, there was a greater sense of belonging and togetherness."

Gavin Poole, CEO of the London-based science and technology campus, Here East, said the concept of 'pivoting' had increasingly been used during the pandemic.

"We saw a lot of tenants suddenly change tack in what they were trying to do with their products or services," he recalled.

"Our ecosystem has



Albert Wong, CEO of Hong Kong Science & Technology Parks Corporation

been built around technology and the creative industries, and during the early stages of the pandemic, there was huge demand which impacted all the companies, whether they were relatively new or well-established.

"Inevitably, they needed more space to allow them to grow, and the results have been quite remarkable in terms of real estate. Over the last financial year we let more than 15,000 sq metres which is the second largest annual total we've ever achieved.

"We went into the pandemic with around 120 companies and now we're at more than 170, but I think the most important element is the political dimension.

"There's a new feeling about how our economy can bounce back, not just nationally, but also internationally and there's a much greater emphasis on how we can forge these new networks.

"Ourselves, the start-ups and large



Linköping Science Park, Sweden



Worldwide crisis sparks risky strategies



businesses on our campus, and our university partners are absolutely inundated with requests from our government and those overseas about ways in which we can provide support and provide access into our ecosystem.

"In September, we hosted a Treasury Connect tech conference led by UK Chancellor Rishi Sunak, and spent a day online talking about growth and opportunities, and as Lena and Albert have found, there was a new appetite for risk.

"People were doing things which they probably didn't have the opportunity to do before the pandemic, but they'd had time and space to think, and also to re-set their personal ambitions, before deciding what they would do for the future."

Poole said the dramatic expansion of the Here East campus had also generated significant benefits for the area's community.

"We were able to establish new social enterprises, charities and programmes

in the east of London, which had a colossal impact. At one point, for example, we were providing food to more than 10,000 households.

"We were working with young people struggling to gain access to high-quality education and providing computer resources for them and the wider community.

"We had the financial firepower because the demand for real estate was so huge, and although the campus has global significance, and many of our companies have international reach, we had an impact at the hyperlocal level, as we were supporting the community literally on our doorstep."

Miranda echoed Poole's comments on the crucial importance of local engagement, and also reminded the audience of Darja Isaksson's suggestion that the world had entered the 'make it or break it' decade.

"We need to identify new solutions and actually address global challenges together. Not one country by itself, not one science park by itself, or one company acting alone. When we come together, we can find really great

solutions to make real change.

"I believe the three most important ways in which innovation ecosystems can contribute are to study and identify the goals which will most benefit society, to build the deep-tech platforms to underpin the changes which will be required and to scale the best solutions on a global basis.

"Those elements provide the focus and direction for our science park, and in Sweden, we are also trying to connect our different innovation ecosystems to one another. We are such a small country that we need to work together and to build the horizontal links and organisations."

Her comments brought immediate approval from Wong, who said working in such a dense and compact environment as Hong Kong had persuaded his team to re-evaluate their approach to crisis management.

"We are a community of around 16,000 people in 4 million sq ft of space, so we needed to understand precisely what was best to do when, for example, a single case of infection was identified in one building

"Do you evacuate, or stop everyone from coming back in? You could have done that in early 2020, but as the pandemic stretched on, you can't keep doing so.

"We set up a new crisis management structure, with multiple different levels, digitised the whole structure and then practised how everything would work for four, five and six months. Because Hong Kong is relatively small, we then copied that system to the wider society.

"Government incentives were also very important in encouraging people to try new things, not just here of course, but in many countries, and we mustn't forget how important that support was.

"As Gavin says about pivoting, we all need to encourage companies to find new ways to do things which they've never previously dreamed about.

"It's also a time when we separate the real survivors from those who are trying to survive, but need our support. As an example, when there was a shortage of face masks, we built a clean room within four weeks and began manufacturing



Gavin Poole, CEO of Here East, UK

them within six weeks.

"There are things we did not previously think we could do, or imagine that we would have to, and I think that's a message which will now last long into the future."

The speakers were then asked what they considered the biggest single change brought about by the challenges of the pandemic; operational, cultural or financial.

Miranda mischievously decided to choose all three.

"The cultural change is really important at the leadership level, but you need to also challenge yourself at the operational level, particularly as innovation environments and science parks, and of course, we need a strong financial situation to survive."

Poole identified leadership, not least as he spent many years at a senior level in the Royal Air Force and then at the Ministry of Defence.

"As soon as the pandemic got hold, it was about crisis management and for me, although it might sound awful, as an ex-military man, it was a fun exercise to go through.

"What I think it led to was new ways of working, and particularly thinking about how we would work for the future,

which impacts on the way you develop culturally, and how your organisation evolves culturally. I'd definitely say leadership first, but operational culture is a very close second.

"Maintaining a team ethos was a challenge, especially during the first few months, and also maintaining it during the pandemic when new members join. Also, it was working out how to keep the team together, even though we were working apart."

"One of the ongoing challenges is around providing tenants with cloud access. We are at a crossroads, and whilst some companies use service providers based in the West, others choose organisations based in China," said Wong.

"We're now working with real estate companies and property developers in Hong Kong who are really getting into the cloud and using virtual environments and digital platforms.

"The use of cloud services is exploding, and in many different sectors, so it will be interesting to see how that evolves and what new applications come forward. As I said, Hong Kong is in a very special place with regard to such technologies." ■



Here East, London

Turning difficulties into innovation opportunities

What does resilience really mean to an innovation ecosystem?

As well as in-depth panel discussions, IASP members from around the world shared brief thoughts on the topic in a series of high-impact videos that were shown during IASP Virtual.

One key idea that emerged is the ability to be flexible and adapt to the situation. It was already a prerequisite for a successful innovation ecosystem to be able to "perceive and adjust quickly", to quote Herbert Chen, incoming International President of IASP and COO of TusPark, China. Or as Renat Batyrov (Technopark Skolkovo, Russia) puts it: "Innovators are that kind of people. They try to view any crisis as an opportunity."

From Atlanpole in France, Jean-François Balducchi agreed, highlighting residents' ability to turn difficulties into innovation opportunities.

Others emphasised the ability to remain focused on the key task at hand and keep working creatively and innovatively.

"We've been able to define resilience at Konza by ensuring that we embrace the dynamic environment that is science and innovation, and we keep our eyes on the goal, which is to make lives better by providing solutions to everyday problems through technology, research and innovation," says Stella Muhoro from Konza Technopolis in Kenya.

Or as Qiang Xu, (ZGC Science Park, China) put it: "The people of a science park share one goal: to work together to make a better future."

Science parks and areas of innovation

Don't stop. Adapt, but keep up the pace. Don't cancel. Reset and continue



Jean-François Balducchi, Managing Director of Atlanpole

are constantly evolving in order to remain ahead of the curve, and when Covid-19 hit many were well prepared for the transition to remote work. One example comes from Milano Innovation District – MIND (Italy), as Igor De Biasio explained: "We reacted very well and very quickly. Digitalisation was a process already ongoing, and we adapted to the situation with a stronger focus on results."

Grant Bourhill (Surrey Research Park, UK) emphasised the sector-specific impact of the pandemic too, pointing out: "A specific strength for coming through the pandemic was the strength of our health companies and also having the hospital on our doorstep, and that really helped us to drive new innovation into the marketplace."

This was also true for IKP Knowledge Park, where Deepanwita Chattapadhyay highlighted the park's life science focus and location in India's Genome Valley.

For companies in other sectors facing unprecedented challenges during the pandemic, STPs and AOIs were there

to support them and help them stay in business in hard times.

Part of this help was financial: Paul Krutko, CEO of Ann Arbor Spark (USA), described \$16 million in new grant funding that was allocated to 2700 small businesses, while Natail Stefanov (Sofia Technopark, Bulgaria) mentioned flexible solutions for rent payments, as well as providing infrastructure and equipment for remote work.

At Isfahan Technology Town (Iran), President Jafar Ghaisar took the approach of marketing their resident companies' high tech products to neighbouring countries, leading to a 7x increase of exports since the previous year.

Maintaining a sense of community even when people couldn't meet in person was another key pillar of the support innovation ecosystems offered to their resident companies.

For Jernej Pintar (Technology Park Ljubljana, Slovenia), maintaining a community environment during a crisis is the very definition of resilience, a sentiment echoed by Alcino Pascoal of Madan Parque in Portugal.

Others agreed: Jorge Arosemena (Ciudad del Saber, Panama) emphasised the importance of this strong sense of community between companies and the park. Similarly, Felipe Romera described how Málaga Tech Park in Spain formed a Crisis Committee made up of the park management team and the companies to promote and foster new links within the tech park community. Events that used to bring people together physically were moved online – Christine Lilichkina (Kalibr Technopark, Russia) mentioned this as crucial, while Technology Park Heidelberg (Germany) hosted hybrid events where teams could connect to others around the world.

CEO André Domin underlined the value of this sense of community in making a successful innovation ecosystem: "If you want to go fast, go alone. If you want to go far, go with others", he said, quoting the well-known African proverb.

Indeed, many IASP members had impressive success stories to share from



Stella Muhoro, Chief Manager Business Dev & Innovation at Konza Technopolis

the pandemic period.

A key feature of innovators is their ability to turn a crisis into an opportunity

for development, and that is exactly what many STP and AOI resident companies managed to do.

Ali Motametzadegan (Mazandaran Science and Technology Park, Iran), highlighted a startup who developed a product that met with considerable success.

"One of our youngest startups produced a remote-control working platform during the first six months of the year, their income increased 10 times thanks to this product," he said.

From PIIT Monterrey (Mexico), Jaime Parada shared a similar example, with the development of a new product in order to combat the spread of Covid.

The current situation is certainly a unique opportunity for companies to pivot and review their operating models, an approach taken by those at Tecnopuc in Brazil.

"What we have learned, was actually that we have to leave behind the linear way of working – companies can be onsite, they can be remote or they can be both, depending on their needs," explained Flavia Fiorin.

So how would IASP's global members sum up their response to times of crisis?

Tom Palenius (Turku Science Park, Finland) says: "Keep it simple, rely on your strengths, but don't get stuck with

your predefined agenda or plans. React quickly."

It's a sentiment shared by Tord Hermansson from Lindholmen Science Park in Sweden: "Don't stop. Adapt, but keep up the pace. Don't cancel. Reset and continue."

The value of an overarching philosophy to cope with crisis was further highlighted by Melike Nazan Eroglu (Mersin Technopark, Turkey). "Resilience takes practice, and now is an excellent time to do just that. Going into freefall does not help anyone, so we should accept the things that we have no control over and think creatively about how we can adapt the window of change," she said.

The last word goes to Lamiae Benmakhlof of Technopark Morocco, where their approach was "Strengthening synergies between strategic partners, companies, academics, researchers and the public sector, and spreading innovative spirit and encouraging community initiatives involving young talents."

In other words, the core mission of innovation ecosystems around the world is precisely what kept them going through times of crisis, now and in the future. ■

Corporates need to learn the start-up language

Start-ups pioneered the evolution of a myriad of new business models during the pandemic, so as new strains of the virus continue to develop around the world, it'll be intriguing to see what more established corporates can learn from their disruptive strategies.

Challenges created by the rapid spread of new variants will surely see more companies create clusters of innovation around themselves, either by making strategic investments in the newcomers or acquiring them outright.

Inevitably though, there will be clashes of culture, mindset and even language as such different forms of enterprise come together.

Two speakers, with impressive track records in devising and delivering strategic partnerships between large organisations and start-ups, offered their thoughts about the challenges and opportunities ahead in the latest wave of open innovation.

Craig Haney, partner at Canada's 1000 Days Out, readily admitted that big corporates had much to gain from establishing relationships with their smaller brethren.

"They can certainly learn a lot from these agile start-ups, and I think one of the very first things they must do is to realise how to learn, and to understand the opportunities which are there for them to discover new things.

"Start-ups are particularly good at

Start-ups are particularly good at making mistakes, but then learning from them, **pivoting quickly**, not worrying about the fallacy of sunk costs



Agustin Moro Cañada, global head of partnerships at Telefonica Open Innovation

making mistakes, but then learning from them, pivoting quickly, not worrying about the fallacy of sunk costs and then driving toward what their customers want.

"Probably the biggest lesson for big organisations is to adopt a very positive mindset about engagement with start-ups, and not to imagine they have all the answers by virtue of their experience and scale."

Agustin Moro Cañada, global head of partnerships at Telefonica Open Innovation, agreed and went even further.

"I'd say that at times we in big organisations have to un-learn when working with start-ups. It's about both corporate culture and corporate mindset, and we speak different languages.

"Before you can work with start-ups, let alone establish commercial agreements with start-ups, big organisations need to speak their language and understand their very specific needs and expectations.

"It's something which the corporates need to work on, and commit to, even before starting to think about ways in which they can achieve open innovation."

Haney wondered aloud as to whether such a need for change made it a good idea for large companies to invest in, or acquire, start-ups.

"For sure, and my experience with Telefonica has shown why we should embrace open innovation. Back in the early 2000s, the telco industry was disrupted by new players using our connectivity and infrastructure to launch new digital businesses which clients were demanding," recalled Moro.

"We had to adapt and reinvent our business in a very short period, and it wasn't enough just to rely on our internal R&D, so we started investing in start-ups and have built up a very solid portfolio.

"Telefonica has invested in more than 500 companies, of which roughly 50% have commercial agreements with us and we're bringing them around 450m euros in combined revenue. We've learned a lot and changed many aspects of our culture and operations to make our collective achievements possible."

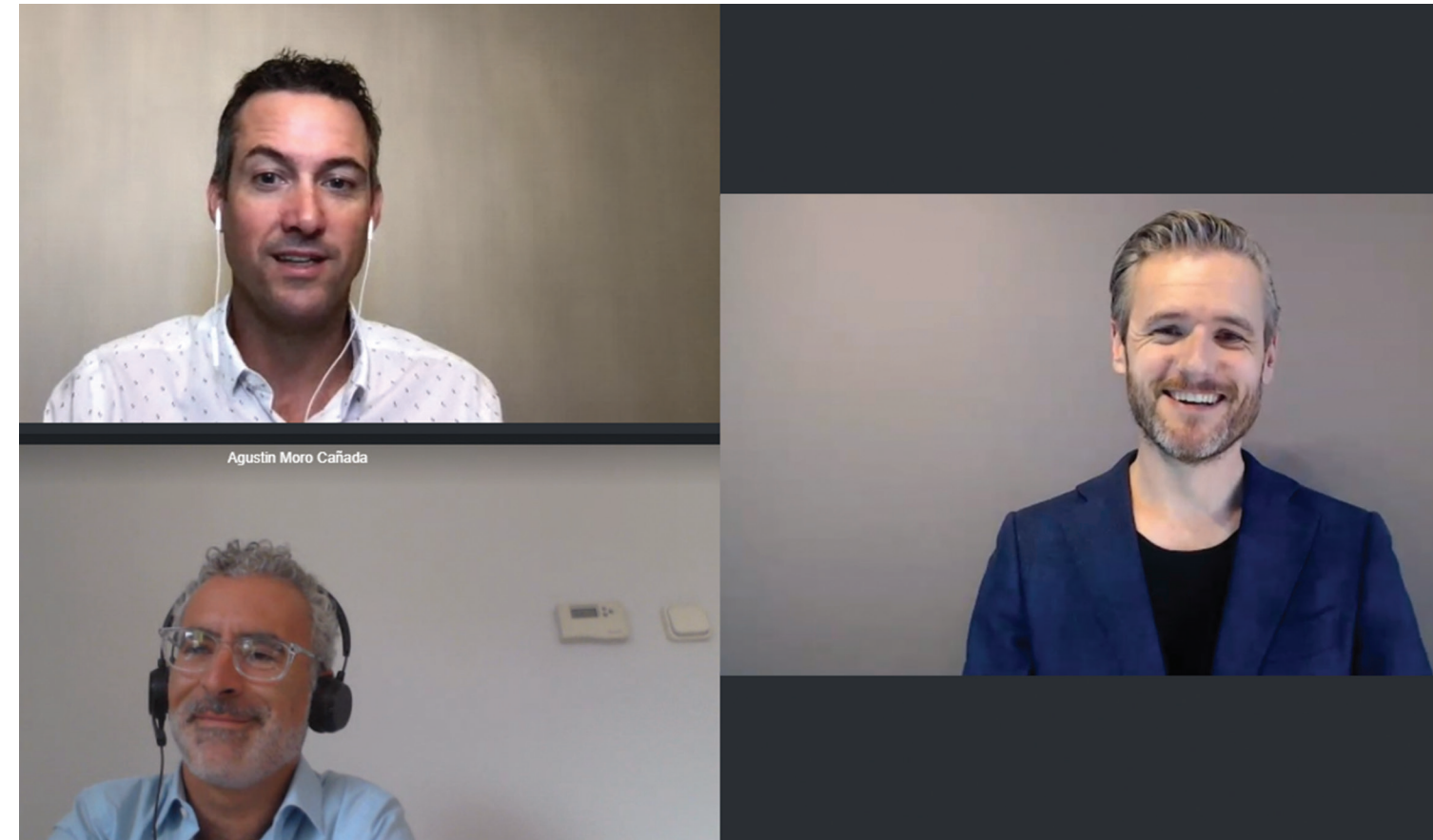
He noted that the full commitment of a company's executive management team was required to deliver such positive outcomes, and that the same mindset also needed to be adopted by its legal and procurement teams.

"Support right from the top is the first dimension, but the second is about changing your processes to dovetail with the needs and requirements of the start-ups.

"Everyone has to realise that you can not take 60 days or 90 days to make payments to such enterprises, because they are fragile and need that financing to stay alive.

"Equally, company lawyers can't spend three months to approve an investment or sign a commercial agreement.

"The third and equally important dimension which must change is your technology, because big corporations usually have a monolithic approach to platforms and systems.



"However, if you want to engage effectively with third parties, you have to open up your technological operations, give them tech support and make them understand how to plug their solutions into your technology.

"All three dimensions need to be



Craig Haney, partner at 1000 Days Out

considered, fully understood and in place in order to work with start-ups and to make the magic happen."

Haney agreed that strategic awareness was crucial, but also addressed the issue of corporate engagement with a start-up from the latter's perspective.

"I think immediate empathy is also important. You might have a company with 20 or 30 people, and the first major client they have is the size of Telefonica.

"Understandably, they're so excited because they've invested all their time and money into winning the contract, but then it doesn't work out.

"The analogy I often use is that a start-up is like a small fishing boat, and if the crew land a whale, it might sink them.

"It's really important for large organisations to be aware of the impact that will have on the small enterprise, and I see a really key role here for science parks and innovation districts.

"They're well aware of the issues from both perspectives, so they need to help educate the big corporates to realise how easy it is to do business with the start-up, but also to see what frameworks they need to put into place, so everyone understands what they're getting into.

"In the desire to achieve great outcomes via an open innovation

strategy, the large organisations must always take the perspective of the start-up into account, when developing systems, processes and platforms, and drawing up legal agreements and suchlike."

"I couldn't agree more," said Moro. "At Telefonica, we say these new relationships are like elephants trying to dance with gazelles, they must avoid stepping on their toes.

"Understanding the potential fragility of a new partner is crucial, and to take the point slightly further, I believe that corporations are not the best first client for a small start-up, as both parties need to understand where their own sweet spot lies.

"When we adopted an open innovation strategy and began investing in start-ups, we were looking to identify either very disruptive business models or cool technology that was really new.

"However, if they were still validating their model, or their tech was only at the prototype stage, there were many times when they tried to make it work and devoted all their resources to trying to make the magic happen, but it didn't.

"We then realised that we had to adapt our approach and look for more



Corporates need to learn the start-up language



mature start-ups that were in a growth phase, which also had two or three people who could take on dedicated roles working with Telefonica.

"At the same time, they also needed to have the capacity, so members of their core team were still developing products, looking for routes to market and finding other clients. Getting that balance right was as important for them as for us."

An audience member then took the discussion in another intriguing direction

In the desire to achieve **great outcomes** via an open innovation strategy, the large organisations must always take the **perspective** of the start-up into account

by asking what the greatest challenge was facing a corporate considering collaboration with a start-up.

"That is a great question. For me, it's about defining what success will look like before the relationship begins, how it might evolve, what the end point will be and how will success ultimately be defined," said Haney.

"Often, at least in my experience, it's not generally what is coming from the corporate boardroom or the finance department. In one instance, it might be learning something really important. In another, it might be investing in technology or setting up a new open infrastructure.

"However, the definitions of success might be very different when you're entering a relationship with a more mature start-up, where the focus is more likely to be on integration and commercial agreements, rather than about trying to understand and define the new technology involved.

"Saying all that, when is the correct time for a big company to invest in, or acquire, a start-up? As Agustin said, it is crucial that the CEO and other people at the top really buy into the strategy and are constantly supportive.

"There will be people within their own organisation who will not like the new relationship, as it will disrupt some of them as much as it will disrupt their business model.

"I think it will always help if an organisation has previously worked with accelerators or incubators, to identify elements of best practice, and also to note key fundamentals about such engagement to help the process move ahead as smoothly as possible." ■



Pandemic creates a catalyst for change

Helping start-ups survive the unprecedented disruption caused by the pandemic became a major challenge for science parks and areas of innovation.

A session devoted to learning how such issues were addressed offered insights from executive leaders from Spain, the US and India.

Josep Piqué, CEO of Spain's La Salle Technova Barcelona said the global health crisis had acted as an innovation accelerator.

"The digital revolution had obviously begun before Covid, but the pace of adoption increased dramatically for everyone.

"However, I think Covid offered a particular opportunity for start-ups to reveal their capacity to pivot, change their strategy and business model, find new customers and develop new ideas.

"The challenges they overcame enabled them to demonstrate to the big corporations that they were still capable of delivering innovations and of acting as disruptors.

"Their achievements also underlined the importance of open innovation, as we needed to see and understand what the start-ups were doing, and what they required, so we could connect them with the established actors in their industry."

Carol Stewart, associate vice-president at Tech Parks Arizona, said Covid had been the catalyst for a dramatic increase in the number and scope of start-ups at her locations.

"There were very few start-ups when I came here, and in the summer of 2019, we brought in a new executive director to take charge of our incubator.

"Six months later of course Covid hit every country, but within the first 18 months, we had 60 start-ups in our programme which was remarkable, and now we've got a similar number in the industry."



Pandemic creates a catalyst for change



pipeline which are being groomed to enter it.

"Equally, it's great to see they're not all in one particular sector. We're seeing agri-tech enterprises coming forward, we're seeing biosciences and we're seeing life sciences.

"We opened a second incubator to focus purely on life sciences, and now across all the start-ups, half are coming out of our university and half from the state's technology community, which again is great to see."

Jitendra Sharma, the founding MD and CEO of Andhra Pradesh MedTech Zone, recalled the multiple challenges his city had faced, even before his team considered how their start-ups could best be encouraged and supported.

"We had national lockdowns, of course, but we also had three cyclones, a major gas leak from a chemical factory and many areas here had to be evacuated.

"However, we weren't deflected or distracted from our work because we are a medical technology zone, and there were huge demands for the products and services being created and manufactured by our start-ups and larger companies.

"We produced more than 100,000 N95 masks, more than 120 ventilators and 800 oxygen concentrators. For a long time, our innovators had been pushing their technologies into society, but now the market was pulling the innovations.

"We became a national focal-point for Covid-related supplies, and our start-ups began to grow at quite remarkable speed because they had market access of which they could only previously have dreamed."

Sharma was asked what he thought the big corporates and large organisations should learn from the achievements of his zone's start-ups.

"I am certain Carol and Josep will agree that the most important element of start-ups is their flexibility. They are at a stage when they haven't yet been tied down by bureaucratic procedures.

"I think the lesson for now and the



Josep Piqué, CEO of Spain's La Salle Technova Barcelona

future is for companies to still think of themselves as start-ups, even as they grow in size and scale. Retaining their original flexibility is crucial.

"The large companies, and even the multinationals, should also have learned that they can not do everything by themselves.

"For instance, a huge company which makes oxygen concentrators and ventilators actually couldn't make the oxygen sensors which go inside those products.

"That's a very valuable lesson for start-ups, to realise that it's not necessary for them to make a finished product, as they can still find a place in the value chain by making an important element, such as the little sensors.

"If the one thing which Covid has taught everyone it's that there should always be cross-learning between the start-ups and the large companies and vice versa."

Another questioner asked if large

companies should now adopt the start-up mentality and begin problem-solving on a daily basis.

"Absolutely," replied Piqué. "Large organisations couldn't bring all their staff into offices, so had to deploy smaller teams working at multiple places, and the outcome was a large number of innovative solutions.

"Companies realised that smaller and more agile R&D teams could deliver exceptional results, but of course, all their competitors made the same realisation.

"Their challenge now is how to connect with the new waves of innovation coming from start-ups. I see a crucial role for science parks here, to help create new ecosystems around companies and help innovative entrepreneurs move from the local dimension to the international.

"We have to 'read the room' on a global scale to identify which companies and organisations have the most successful tech-focused business models, and how we connect them with our start-ups to allow them to scale.

"As Jitendra rightly says, the large companies and the big corporations are very good at scaling themselves, but much less good at making discoveries."

"Just to add to what Josep mentioned, we need to remember that as we race towards innovation, there's a danger that what gets compromised by the speed is the absence of systems and structures to protect intellectual property (IP) rights," said Sharma.

"Again, I think this is where science parks and innovation districts can play a very important role, because whilst they're encouraging start-ups to grow at pace, they also guard every enterprise and make certain their IP is fully safeguarded.

"I think we can also help in other crucial areas, such as component procurement, supply chain logistics, regulatory clearances and the acquisition of raw materials.

"Even at the administrative levels, science parks can have a huge contribution to making life easier for their start-ups and other tenants."

"For sure. We're like the 'sandbox'



AMTZ Aerial View

where everybody comes to play together. Whether it's about connecting start-ups to the university, or connecting them to the large corporations, it's crucial that we create those water-cooler moments for everyone," agreed Stewart.

"We have such giants as IBM and Raytheon who rub elbows with enterprises employing just one or two people, and always have to create platforms so they all make connections on a regular basis.

"I realise many people in this session are too young to know what a rolodex is, but we facilitate those introductions from our rolodex, whether that's through an international network such as the IASP, a national or state network, or a local community.

"At the same time though, we have to create real start-ups because it's very easy to fall into the trap of giving them too much protection.

"They need to have some skin in the game, so we make them pay rent because eventually they're going to have to grow up and take their own space. There's also a little programme fee which they have to pay.

"If they're going to use one of our wet labs or a dry lab, then they have to pay for that again. We're not asking the market rate, but we are training them to become real companies.

"We also focus them on them

moving away from research grants and really going after some real money. They need, and we need, to be accountable, so we set them up with mentors and serial entrepreneurs and the start-ups report to them on a quarterly basis.

"Again, we're training them to become real and scalable companies,



Carol Stewart, associate vice-president at Tech Parks Arizona

and I think it's really important that you don't fall into the trap of just having the same 20 companies in our incubator for the next decade."

"I fully agree with you and Josep. I'd also add that helping tenants reach innovative markets is another key responsibility which parks should endeavour to achieve," said Sharma.

"In our sector, whenever a product is very expensive and the need is locational, that's the time when a product could become a service and innovative launches can help start-ups reach markets in different and better ways.

"A small example is the oxygen concentrators we produce. They're 1,000 dollars, so very expensive for many people, especially when you need them for five or even ten days.

"Then a start-up makes an app, partners with Uber and ships hundreds of these devices to patients' homes for a few days, and it costs just five dollars a day for people to receive effective pain management.

"Helping start-ups create markets by innovative and non-traditional means is a very important role for science parks. It's all about the power of effective convergence. Bringing people together and watching them succeed is also very satisfying." ■

Digital push kindles the evolution of team-work

Disruption to traditional workplace models fast became a feature of life during Covid and returned with a vengeance as new variants ripped through economies worldwide..

Some considered remote working an unexpected 'bonus' of lockdown, whilst others missed the social engagement and professional interaction, and most commentators assessed the value of working from home according to their own political preferences.

To gain insight into how disruption impacted science parks and innovation districts, and what lessons might be learned by the radical changes, three external observers were asked for their thoughts.

Léan Doody, who leads Arup's integrated cities and planning network in Europe, suggested that the most visible change was the many different locations from which people could now work.

"I'm at home, but could be in the office. I went to a conference the other day, and someone gave a talk from a train. You could see them moving and the background changing, and that's the best version of remote working I've seen. You can now be anywhere, but still make a contribution.

"In general terms, the pace of digitalisation has obviously increased

Everyone and every organisation is focused on increased levels of **flexibility**, but **creating** new forms of office and work environments will not be simple



Léan Doody, of Arup's integrated cities and planning network in Europe

dramatically, as has the use of digital tools we're now using to make everything work. I think we're still working through the different platforms and deciding which best suits us.

"I think there's also a new appreciation of the value of being in the same space, even though the things that we will do when together in the future will be different."

Daria Tataj, founder and CEO of Tataj Innovation, agreed, but took the thought further by suggesting that there has been a fundamental change in the previous distinctions between employers and employees – and between innovators and entrepreneurs.

"Our research shows very clearly that this shift has created a cascade of new business models and working patterns.

"One of the most fascinating aspects is the move away from team-working and even changes in how we define a team. Workplace disruption meant that business leaders were suddenly not able to use all their natural means of control.

"There are challenges around communication and collaboration, around making sure everyone is aligned on your strategy when you don't see each other so much.

"Previously, there were so many opportunities to meet, share knowledge and clarify issues, within your own organisation and with other organisations, often because of random interactions.

"Now, all of these aspects require a little bit of thinking and a little bit of process and of structuring for them to occur.

"For me, the real benefit of this digitalisation push is that we can design better workplaces and better organisations, and around values which have much more meaning and sense than simply speed and profit."

"I agree," said Arup's Doody. "There is a need for both new management methods, the opportunity to design different ways of working together, and I also think there is potentially increased access to talent, particularly via remote working.

"Saying that of course, your talent has increased opportunities for working. I think we all need to recognise, and to make explicit, that all this is a new thing. We are all going to be in a transition phase for months and perhaps years.

"As you say, we need to highlight what is happening and to consciously design how we will use physical space and digital space, and how best to make the two work together. For the companies who can crack that issue that will be a big moment."

Idoia de Paz, managing partner in the corporate learning solutions arm of Spain's ESADE institution, pointed out that the design of physical workplaces to meet the new ways of working represented a significant and ongoing challenge.

"There are, of course, different potential solutions in terms of places, collaborations and every aspect of digital working. Equally, everyone and every organisation is focused on increased levels of flexibility, but creating new forms of office and work environments will not be simple.



Daria Tataj, founder and CEO of Tataj Innovation

"The biggest challenge for a company which wishes to attract new talent is to create somewhere they will want to be, when they aren't working remotely.

"You cannot achieve everything the company or organisation will require from your home, in a cafe or in any other remote location,

"The issue isn't about the future availability of space. We're still talking about between seven and 10 metres per person, so the same in terms of dimensions as before the pandemic, but now people want the space to deliver a different (and evolving) kind of work model."

Tataj agreed that more thought had to be given to the interface between physical and digital space which would be required in the post-pandemic era.

"We all see the shift towards the digital workplace and the digital ecosystem, but the physical space will always be important because humans are social animals.

"At the same time, companies need to really consider how digital technologies are impacting their organisational structures, how they need to adapt their lines of control and reporting, and how they will look to implement their strategies and their

strategic thinking.

"Leaders need to use this time of rapid digitalisation to embrace the enormous opportunities, most obviously by building their digital presence and identity, but also by adding a deeper layer showing the alignment between their personal purpose, their team purpose and their professional purpose.

"Each time they express their beliefs or support others in digital ecosystems, within organisational networks or open platforms, such as Twitter, LinkedIn and others, their equity as a leader increases."

"Different digital tools and platforms do have much to offer, to reach wider audiences and new innovation partners around the world, but it is still important to have physical interaction," said Doody.

"Many people in some countries have been stuck at home for month after month. I think they want some excitement, and there's only so much excitement you can get online.

"For me, the interplay between a workplace and its city, or a science park and its urban space, and the built environment around an office is so important.

"I think it all contributes to the innovation, the productivity and just the enjoyment of work, but equally, I think it's important for companies and organisations to understand what they're trying to achieve, and how best to do it."

"Absolutely," said de Paz. "I am very comfortable working at home, I know how to execute everything I have planned and can focus to do when alone, but when I have to create things and to innovate, I need to be with others.

"Of course, I can do that at home with the technology as a facilitator, but I need to see others and to work with others. If not, I could be in another company with others who have different experiences. I need the presence of others." ■

We all see the shift towards the **digital workplace** and the digital ecosystem, but at the same time the physical space will always be **important** because humans are social animals



Idoia de Paz, managing partner in the corporate learning solutions arm of Spain's ESADE institution

The balance between slackers and workaholics

Having discovered how a trio of external observers viewed issues around workplace disruption in science parks and areas of innovation, it was time to hear from three insiders.

Herbert Chen, IASP's incoming international president and the vice-president of China's largest science and technology location, TusPark, was joined by Mai Louise Agerskov, CEO of Denmark's INCUBA, and Jernej Pintar, CEO and head of the tech community, at Slovenia's Technology Park Ljubljana.

The latter began the session with an intriguing observation about his experiences during the two years of lockdown and remote working.

"The main change was that many tenant companies initially reported an increase in productivity by many of their employees, which was rather puzzling," said Pintar.

"It seemed that when people who had work as their top value were based at home, they worked even harder than previously. The rest became slackers, started hiding behind others and over

time, they worked less and less.

"The increased productivity continued for maybe six months, but then the top performers had worked so much that they began burning out and productivity started falling. Alongside that, the individuals who had given the most also had less loyalty in the company which employed them.

"As leaders, we really need to take care of both groups. We must persuade the slackers to do more and reassure the ones who went into overdrive that they need to cool down, to stop, take a holiday and learn to relax."

Chen was then asked how demand for space at TusPark had changed during Covid and explained that it had continued to increase despite the enforced restrictions of the pandemic.

"We also saw demand for a different type of space, often because people no longer had their own desk or personal zone.

"We had to increase, for instance, the cafe space because people wanted to meet and talk to each other and

engage with each other."

"Yes. We have the same challenge and are more cramped than ever before, even though we're building 22,000 sq metres of new space for tech companies," said Agerskov.

"However, I think it's still too soon to conclude what the new normal will be. In terms of events, we're seeing a return to how things used to be, although the arrival of new Covid variants might well reverse that trend again.

"I agree, productivity is a major issue. Some people say you can be efficient and productive working from home, but many managers from our companies are telling us the opposite.

"They are finding it challenging to balance the need for both execution and innovation, and say innovation is much harder when staff work remotely.

"It also difficult for start-ups to make plans that will last for months, so they constantly need to realign their teams and reallocate their resources."

"If you're lucky, the top people in your company are the best performers in implementation and in innovation. The leader of my office is such a person, he's a crazy guy who always seems to have 100 balls in the air," said Pintar.

"My role is to try to catch as many as possible, and then pass 80 of them onto the science park and leave him with the rest. I think that's a constant challenge for leaders, as is understanding what drives every member of your core team.

"What is most important when they work from home? Should you give them even more respect? More money? More time to spend with their family - or would they prefer more technology and gadgets?

"From the time when remote working became widespread, it was much harder to really know what your team members wanted."

Chen shared Agerskov's view that it was too soon to decide how the post-pandemic workplace might look.

"It's been almost two years, but planning for a new form of science park community and environment is a long-term project. You have to be thinking very carefully about the new demands and also the pressures of the ongoing



pandemic.

"You also have to be aware that during a period of radical change, the nature of the facilities and space you provide will have to reflect those changes."

"Absolutely," said Agerskov. "I also think that when many companies and organisations were working from home it forced us to become more systematic about building communities.

"We've talked about it for years of course, but when the traditional workplace touch-points and opportunities for casual engagement suddenly weren't there, we had to really make sure that those elements were embedded into our CRM systems.

"It's been very healthy for us all to consider if we are spending time on the right demands, and if we should focus more resources on community building, when the random discussions and meetings we used to have were no longer there."

The dream I have is that our science parks could become branded as **technology hubs**, so we'd be a pure hub of communities and the interaction between us would be amazing

Pintar wasn't convinced though and admitted that the concept of community building was a concept which he considered to be flawed.

"Everywhere in the world and everyone in the world thinks they have a community, but I believe that in reality, so few science parks or innovation districts have one. It devastates me, but I think in general people are just fascinated by the technology and the real estate.

"Sadly, we know that many tenants simply see us as providers of infrastructure and administration support, although we all wish it was different. It would be great to be perceived as a technological hub-stack or an avant-garde tech community.

"The dream I have is that our science parks could become branded as technology hubs, so we'd be a pure hub of communities and the interaction between us would be amazing.

"Can you imagine what could

happen if we bring the top community builder from each of our parks to the same location, take time to let them become good friends, and then sent them back? It'd be like a generator which was creating the future."

Chen focused on the ever-more pressing need to create pathways and environments to bring people closer together.

"The challenge during the pandemic was how to know companies and individuals better, because so often the connections were only via digital platforms. The mutual understandings were only 2D when we all need them to be 3D.

"Individual workplaces and the wider science park communities need to come closer, and we need to find ways of deepening the connections."

"I think from the perspective of start-ups that it will also be important to think carefully about what physical surroundings we place them in," suggested Agerskov.

"They want to get the right investors on board and attract the right talent, and aesthetics is an element of their growth strategy. I think when the new normal does eventually come that there'll be even more focus on where companies are placed." ■



INCUBA, Denmark

Partnerships and interactions key to success of fledgling firms

It's always a tough baptism for start-ups during their early years, but those spawned during the pandemic and under Covid restrictions faced unprecedented challenges.

To gain insight into how such fledgling enterprises fared, and what support they received from other tenants and management at their science parks, two were invited to share their experiences of the last two years.

Both were asked to begin by offering a concise insight into themselves and their start-up.

Siddharth Tiwari, CEO of Berlin-based start-up, Tiwari Scientific Instruments, said he had graduated in space engineering from Milan's famed Politecnico.

"I worked on a number of interesting space projects, including the InSight Mission to Mars, and then started my company in 2019.

"We are supported by the European Space Agency (ESA) and specialise in 3D printing of metals and ceramics which we have developed in collaboration with the ESA. We are located in Darmstadt, as well as in the Science and Technology Park Berlin Adlershof in Berlin.

"They've primarily been supporting us by providing office and lab space, as you would expect, but it's been much more. For instance, the park regularly puts us in contact with companies doing things similar to us, or with whom we might enjoy synergies.

"It was important for us to identify a



Siddharth Tiwari, CEO of Tiwari Scientific Instruments

location which could give us not simply the physical space, but also the context and right connections for us to grow."

Sarah Jabir, the grants and partnerships manager of UK-based political consultancy, My Life My Say, said it was an NGO and charity looking to empower youth to participate in democratic processes.

"We are based in the heart of East London, close to the Queen Elizabeth Olympic Park, and our innovation centre is called Plexal, run by Here East.

"There are more than 800 start-ups and social enterprises here, and we collaborate with many of them in an array of different disciplines, from charity work to mental health issues and cyber-security."

"Our park has also been great and supported us in a variety of ways. We partnered with them, and through that relationship they offer all kinds of services.

"One of the core elements of our model is to offer one-on-one leadership consultations, and they advise us how to keep on track with our mission, how we can improve and how we can

look to expand. They also sponsor us, and support many of our events. In November, we held a Common Futures Forum, which was very well attended, not least by national politicians, and the support of Plexal was a tremendous asset.

"We collaborate so well with them that they have become our advisors, our customers and our clients, and we really couldn't have achieved this level of access without them behind us."

Asked what she considered to be the ecosystem's single most important aspect, Jabir identified the healthy working environment.

"I'm sure lots of features you can see here, the ping-pong tables and other stuff, are what you'd see elsewhere, but the difference here is everything is set up to make you feel relaxed. You don't feel the pressure and that fosters a very positive and collaborative spirit.

"At one time, it might have been called a 'work hard and play hard' environment, and although you don't hear that expression much any more, I think it sums up the place very well."

Tiwari thought the greatest benefit of being within the Berlin Adlershof ecosystem was the interaction with nearby tenants.

"Whenever I've had questions about important issues, such as funding programmes or R&D grants, there are companies here which are older than us and which you can very easily approach for advice, contacts and guidance.

"It's extremely useful, for instance, when I am about to have discussions with potential investors, and it's absolutely crucial for me to understand how they will think, how I might value my company and how the investment process is likely to work.

"If anything, the pandemic made such contacts easier and stronger. Regulations, funding procedures and grant programmes have changed very rapidly in the EU, and although I was aware of some changes, we learned much more from our close-knit community of contacts."

Jabir said the My Life My Say team had received equally beneficial



The Plexal Innovation Centre at Here East, UK

guidance from more established companies based in Plexal and the Here East community.

"Everyone here is at a different stage of their start-up process or business cycle, so if you're just beginning and



Sarah Jabir, of My Life My Say

someone is perhaps two or three years down the road, they're the perfect advisor because they can relate very precisely to the issues and challenges you face.

"It's not just corporate guidance either. When the pandemic began, we got so many offers of support and inquiries about our Covid procedures, and if we required assistance, or if we needed more cleaning staff. It made us feel very safe, and it also made us feel valued and supported."

Tiwari said Berlin Adlershof had offered to delay rent payments, to ensure his venture was financially stable, and also provided free Covid tests right from the start of the pandemic.

Both speakers praised the initiatives their landlords rolled out to engage with their enterprises to see if their digital tech and networking requirements were being met.

"I was sceptical at first about the merit of online meetings, but then we were able to successfully meet and engage with potential customers, and the process worked for us," admitted Tiwari.

"Perhaps there has to be more diligence before the online session, but that can't be a bad thing. Another great advantage, especially when you're a small company based in Berlin, has been the ability to save so much on travel and accommodation costs, when

you meet online."

"My advice for anyone who remains sceptical about online meetings and interactions with customers is to broaden their horizons," said Jabir.

"Don't stick just to Zoom. Don't just use Microsoft Teams. People will get fatigue if you use the same technology or the same platform every time.

"You need to put effort in to make the process more interesting. Look at TikTok, for instance, it's not just for teenagers, you can run a lot of networking through it. Look past the conventional platforms and you'll find something which works for you."

However, Jabir did feel her innovation campus could do more for tenants looking to expand overseas.

"They do really well to connect us to potential partners in the UK or overseas, but there's a bit of a disconnect with potential international partners," she said.

"I don't mean it has to be a formal event or conference, it could just be a game show format or a fun night playing bingo.

Tiwari concluded the discussion, by saying he thought Berlin Adlershof had the right balance both in terms of inviting international delegations and of allowing relevant start-ups or companies to present to such events. ■

There are companies here which are older than us and which you can very easily approach for **advice**, contacts and **guidance**

Good leaders have to be great listeners

Sweden's Darja Isaksson had been the inspiration that kicked off two days of intense debate at IASP Virtual 2021, with her powerful analysis of how innovation might drive societal change, and Argentina's Eduardo Braun closed the conference with an equally inspiring presentation.

The wide-ranging topic – "How culture could play a fundamental role in the development of an ecosystem" – gave him the perfect opportunity to display the insights he has acquired over 15 years of in-depth conversations with world leaders of business and politics.

"We've been talking about the resilience in innovation ecosystems, how the physical structures need to be just right, and more importantly, how the right people need to be connected to the right players and the right stakeholders," said Braun.

"The speaker from Arizona highlighted the importance of creating more 'watercooler moments' and she is absolutely correct. We need to foster shared experiences and build communities which are about so much more than simply connecting people.

"Equally, as the speakers from Slovenia and Berlin said, we must develop our network leaders and ensure that matchmaking structures are in place, so entrepreneurs can meet the right financial people, the best researchers and everyone else they must engage

To deliver the outcomes we all desire, the **values** and **behaviours** have to be actually lived, they can't just be buzz-words on a web-site, or on a poster on the wall

with to grow their business.

"To me, all those different elements come together with shared values and behaviours to create what I consider the culture of innovation.

"However, to deliver the outcomes we all desire, the values and behaviours have to be actually lived, they can't just be buzz-words on a web-site, or on a poster on the wall.

Braun accepted that a 'one size fits all' approach to building a culture of innovation would never work, but highlighted two aspects of human attitudes which he considered crucial.

He recalled how Apple's Steve Jobs

had met the legendary film-maker George Lucas, and been overwhelmed by his passion for Pixar, even though he was being forced to sell it to Jobs to guarantee a future for his Lucasfilm company.

"He was blown away by the dream and sense of purpose which Lucas had to create the first computer animated feature film, and hugely impressed that he had persevered for 10 years to achieve his goal," said Braun.

"One lesson Jobs learned from Lucas was that you have to put people before ideas. Relationships matter. Everyone matters. In those films, the catering crews are in the credits. Even babies born during the filming are there too.

"Respect and trust cannot be created by ordering people around, they are qualities which have to be earned, and once they are, they need to be carefully managed, and that applies just as much when you want to create a successful culture of innovation as it did in those film studios.

"A second element which must be included is the ability to accept dissent. You need a lot of self-confidence to start discussions which will include your potential mistakes.

"Lucas encouraged newcomers to work with him on his dreams because he recognised that it was important for people to really open up their minds to different ideas and approaches, rather than just considering issues from the perspective of their own particular speciality.

"He'd realised, and it became the cornerstone of his remarkable achievements and commercial success, that film directors (like elite business leaders, or those at the head of a science park community) have to be great listeners and extremely empathetic.

"These attitudes are so important when you're looking to foster communication within a team, because communication creates connections and connections create trust."

Most members of Braun's international audience appeared to be in tune with his observations, although some may have been wondering how anecdotes



Eduardo Braun, keynote speaker

from Hollywood related to the evolution of leadership teams within science parks and innovation districts.

However, for those not yet fully in synch, the connections were crisply outlined in the next phase of his presentation.

"The same methodology and agile approach applies to any culture, within any sector or any organisation," said Braun.

"You take small steps, encourage people to share their ideas, and always make it clear that you believe in collaboration.

"You have to create a safe space for open discussions, so the ego needs to leave the room and it's equally important not to present your thoughts in an authoritarian manner or tone. Everything is about building confidence and trust.

"Attitudes and emotions fire behaviour, and that's why it's so important to manage them carefully. Different people have different switches, and some will feel fear, anguish, rejection, and frustration if the discussions aren't open, transparent and honest.

"Building a culture of innovation is a

You take small steps, **encourage** people to share their ideas, and always make it clear that you believe in **collaboration**

tremendously powerful tool, but it can't be managed in the same way as other management tools, because it involves people's feelings, people's emotions and people's attitudes.

"You need to design your culture with the right values and behaviours, but you have to take time and you have to recognise that it will also evolve over time.

"If you look at some of the world's most successful companies, Amazon, Apple, Google and Meta, they devote enormous amounts of time, energy and

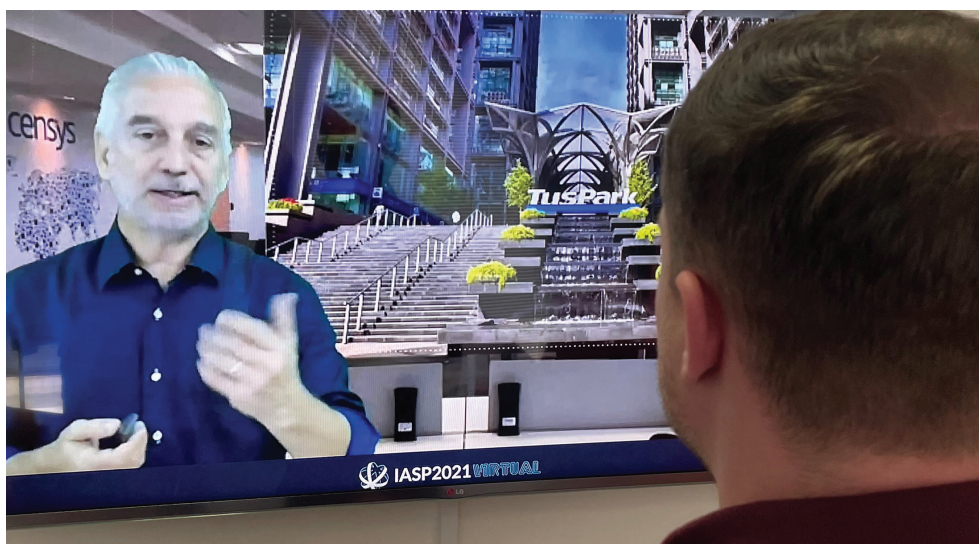
resources to designing, building and then living their cultures, but they won't get it right every time, and their culture will constantly evolve.

"Before, for example, you acquire a start-up, you need to carefully consider how their culture will fit with yours. Will they collaborate or will they challenge the culture? Do you accept dissent, and will their potential challenges help your culture evolve - or inhibit it?

"Culture is at the heart of your brand, and culture has to be aligned with your strategy so that it becomes a very powerful engine to drive your success.

"The first step is always to write down your culture plan, with all the actions that you'll need to take and the connections you'll need to make. Put in your agenda for tomorrow morning."

It was a conclusion that echoed what managers of science parks and areas of innovation have long known: that their work is about people and bringing them together, and the great things they can achieve when they collaborate. The right physical space and facilities are key, but what really ensures the resilience of innovation ecosystems is people and their culture of innovation. ■



SPEAKERS

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Siddarth Tiwari	Tiwari Scientific Instruments (based at Berlin Adlershof)	CEO	Germany
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