

GREG CLARK
MIKE BLACKMAN
BRUCE KATZ
ANA MAIQUES
TONI MASSANÉS
HILA OREN
RÉMI PARMENTIER
SISON PUJOL
GUAYENTE SANMARTÍN
LUIS SERRANO
MARIA TSAVACHIDIS
ANDREU VEÀ
VÍCTOR VIÑUALES
IN CONVERSATION WITH
SARA SANS

reBARCELONA

reBARCELONA

reTHINKING the CITY of the FUTURE





**Ajuntament
de Barcelona**

reBarcelona
reThinking the city of the future

- 7 Introduction —Sara Sans
- 12 Barcelona in the world**
- 15 The role of cities —BRUCE KATZ
- 22 Ambition and outreach —MIKE BLACKMAN
- 30 The gastronomic brand —TONI MASSANÉS
- 38 Innovative talent**
- 43 The challenge of scaling up —ANA MAIQUES
- 46 Design as a driving force —SISÓN PUJOL
- 53 Connected innovation —ANDREU VEÀ
- 60 Knowledge and growth**
- 63 Cutting-edge scientific research —LUIS SERRANO
- 74 A change of paradigm —GUAYENTE SANMARTÍN
- 82 Urban space in transformation**
- 85 Smart mobility —MARIA TSAVACHIDIS
- 95 Meeting point —HILA OREN
- 104 Sustainability and economy**
- 107 The necessary change —VÍCTOR VIÑUALES
- 123 Blue militancy —RÉMI PARMENTIER
- 130 Epilogue**
- 133 Barcelona: reactivation and reinvention
of the restless city —GREG CLARK
- 152 Barcelona Green Deal 2030

Introduction

—Sara Sans

With humanity keeping a watchful eye on a virus, and most of the population locked in their homes while another small (large) part ensured that essential health, social care, and supply services continued to operate, the world took on new dimensions. The devastating impact of the pandemic reverberated at all levels, leaving a shocking scenario and an unexpected opportunity to rethink the world and ourselves as people.

The React Barcelona conference contributes to this analysis and reflection by outlining future goals aligned with sustainability and people's well-being. Professionals and experts from various fields gathered in a first edition that had to be held online as the wave took hold. They did it again in 2022, with a second edition when the tsunami had started to subside and in-person attendance began to prevail. The third and last edition is being held with the pandemic reasonably under control.

The bitter-sweet days of lockdown are long gone and almost forgotten for some. Others are still dealing with the after-effects of Covid-19. Some thought that many things would change and the world would get better. Others lament not only the return of obstinate realities but also a kind of boomerang effect.

Cities, understood as systems constantly adapting to local and global changes, set the pace and chart the course. A course that results from a balance between transformative and conservative forces that require roadmaps. And the more clearly defined and widely shared, the better.

The Barcelona 2030 Agenda lays the groundwork for achieving the United Nations' seventeen Sustainable Development Goals (SDGs), which call for "cities and human settlements to be made inclusive, safe, resilient, and sustainable."

The local world and cities play a critical role in the 2030 Agenda. It is no coincidence that cities are home to 50% of the world's population and account for 70% of global CO2 emissions. Cities are home to poverty

and unemployment and at the same time are places of innovation where opportunities are generated. And it is here that the unquestionable goal of achieving more sustainable development will be decided.

The Barcelona Green Deal, the city's implementation of this roadmap, includes 38 measures, including urban transformations, aimed at revitalising strategic areas of economic activity and creating new ones in various city sectors. Therefore, three major urban nodes are established by remodelling La Sagrera, Sants station and Glòries. And the Besós, Montjuïc, Zona Franca and the Fira, together with the revamped 22@ are earmarked as areas for the new reindustrialisation.

So, cities face new challenges in urban design and transformation. And, because current problems have both a local and global dimension, solutions must be approached from both perspectives. It is for this reason that the React conference has brought together experts who have been trained or are developing their careers in the city and voices from outside the city. Both perspectives will be critical in developing and testing future solutions that work locally and have a global impact.

This publication is neither a proposal index nor a survival guide. Its value lies precisely in bringing together some of these perspectives and reflections, which examine aspects of a Barcelona in transition from very different perspectives.

Twelve experts from various fields reflect on their perceptions of the city and offer their viewpoints on its strengths and weaknesses. Some were born in Barcelona, while others chose to live there. Some have settled in the city, while others visit it regularly.

The order of the chapters is not fixed. After all, the commitment to innovation, creativity, technology, and sustainability is multifaceted and impacts all areas. The first chapter is an approach to the perception of the city that combines the outside view of Barcelona with how its people project themselves in the world.

North American urban planner **Bruce Katz**, an expert in advising cities all over the world, refers to the “new disorder” caused by the global crisis scenario—the pandemic, but also the war in Ukraine and the climate emergency—and to the definitive role of cities in resolving global challenges. Katz prescribes pragmatism, mainstreaming and collaboration.

In this first chapter, **Mike Blackman**, CEO of Integrated System Europe (ISE), explains why he relocated the world's largest audiovisual fair, which had previously been held in Amsterdam. He declares his love for the city, which he sees as proactive rather than reactive. His dedication has significantly boosted Barcelona's international profile, multiplying the ‘effect’ of John Hoffman's Mobile World Congress or of Grant Dalton, executive director of America's Cup, which will be held in the city next year.

From a different angle, the gastronome **Toni Massanés**, the director of Fundació Alícia and one of the architects of the constructive revolution led by El Bulli that positioned Barcelona and Catalonia on the world stage, reflects on the potential and importance of gastronomy, the ultimate expression of a country's landscape and culture. And it demonstrates the significance of food management in relation to the territory, to research, the economy, health, and, in short, people's quality of life.

In the second chapter, three voices speak out on innovation, digital talent and the creative industry. **Ana Maiques'** entrepreneurial career as the director of Neuroelectrics, a company founded in Barcelona in 2011 with a Boston office, exemplifies the tenacity and commitment to innovation as a tool for entrepreneurship. **Sisón Pujol**, who specialises in providing design solutions to propel small and medium-sized businesses forward in the market, has been taking the pulse of the sector for thirty years and recognises and vindicates Barcelona's creative DNA. Finally, this section includes the journey and thoughts of another unique entrepreneur, **Andreu Veà**. Telecommunications engineer, Internet pioneer, innovator, creative,

and, most importantly, a link between people, ideas, companies, and the market.

Luis Serrano and **Guayente Sanmartín** discuss the role of science and technology in the third chapter. Serrano, director of the Centre for Genomic Regulation (CGR), advocates for increased public funding so that research can make a decisive leap forward in the country and become a driving force in the economy. Serrano emphasises initiatives such as Ciutadella's future Mercat del Peix as a future hub for scientific and technological innovation. Guayente Sanmartin, one of the leading executives at the multi-national HP, where she has developed her professional career, views Barcelona as an organisation and is eager to define the sectors in which the city wishes to invest in order to grow and position itself in the world. Hers is focused on health and tourism.

Maria Tsavachidis, CEO of the European Institute of Innovation and Technology (EIT), addresses one of the main challenges in the fourth chapter, on urban space and its inevitable transformation: how to implement a new mobility system to reduce pollution and improve the quality of life of citizens in cities that are more designed for cars than for people. The new urban landscape design includes superblocks and a change in the use of major roads to boost the use of public transport, bicycles and scooters. **Hila Oren**, an expert in marketing and branding, specialised in public spaces and founder of Tel Aviv Global, champions the role of squares and outdoor spaces as meeting points in cities and talks about how to make cities more efficient and how to adapt them to the needs of older people.

The green economy and Barcelona's commitment to the blue economy are discussed in the fifth chapter. Sociologist **Víctor Viñuales**, co-founder and director of the Fundación Ecología y Desarrollo and a specialist in sustainability, human development, and international cooperation, defends the action being taken to address the climate crisis in an inspiring talk in which he calls for multi-leadership to address the management of

this global emergency. Viñuales insists that the climate emergency should no longer be seen as a concern but as an occupation in capital letters. "We must shift the scale to provoke and effect more rapid change. We are colonising the future," he warns.

Rémi Parmentier, veteran activist and historic leader of Greenpeace, has been active for twenty years in the Varda Group, of which he is co-founder and director, and through which he advises governments and administrations on sustainable development, environmental policy and, above all, marine policy. He was one of the driving forces behind the Global Ocean Commission and defends Barcelona's potential to consolidate its position as a point of reference for the blue economy in the Mediterranean while at the same time drawing attention to and proclaiming "zero tolerance" of bluewashing.

Twelve views conceived from the city and towards the city. Twelve readings of a Barcelona that everyone recognizes as privileged and of which they identify strengths and potential. In the final section, the expert in cities and metropolitan policies, **Greg Clark**, provides his reflection on a Barcelona that he considers restless and at the same time intentional; connected to the world and innovative. This Londoner, also the founder of the Business of Cities and who has advised more than 300 cities and 40 governments, sets the challenge of discovering what a city does best face to face and in a physical location. Now and here.

ReBarcelona rethinks the city that is emerging and the one that could be, and points out civil, economic and also cultural virtues to place Barcelona in the league of global capitals.



BARCELONA IN THE WORLD

BRUCE KATZ
MIKE BLACKMAN
TONI MASSANÉS

The role of cities —Bruce Katz

The urban policy expert Bruce Katz specialises in advising and helping cities. He came to Barcelona for the first time in 2009 to give talks at ESADE on the impact and role of cities within the context of the global economic crisis. He has since returned several times, especially when things are not going as well as they could.

Barcelona Global went in search of him in 2017, when the Catalan political crisis was cropping up. In 2021, when the worst of the pandemic was over, he responded to the City Council's request to participate in the first REACT conference. He came back the next year, when the war in Ukraine was already draining Europe. He defines himself as an interdisciplinary urban policy expert and upholds cities' potential to solve the problems posed by global challenges, to such an extent that he has classified himself as an 'urban optimist'.

To carve a niche for himself in the crisis scenario of what has come to be known as the 'new world disorder', he prescribes pragmatism, transversality, cooperation and action-orientation. He founded and is the director of the Nowak Metro Finance Lab at Drexel University (Philadelphia), a centre specialising in financial innovation in cities and metropolitan

areas; he is a visiting professor at the London School of Economics and the co-author of several books, which have positioned him as a point of reference and advisor to governments and local and metropolitan leaders. He has worked for the Clinton and Obama administrations and was the vice-president and director of the metropolitan policy programme at the Brookings Institutions, one of the most influential think tanks in the world, for over 20 years.

His ‘new world disorder’ has been caused by the multiple crises stemming from the COVID pandemic, the geopolitical reshuffling—one of whose rawest and closest expressions is the war in Ukraine—and especially the climate emergency. Katz claims that in view of these different crises, cities are the best positioned spaces to make their mark. They are able to mobilise resources and make headway on innovative financing sources and instruments, reindustrialisation processes and the relocation of advanced industries.

—Barcelona is an electric city with a very unique personality.

Bruce Katz thinks that Barcelona is ‘an electric, incredibly beautiful city with a prime location like few cities have’. He claims that Barcelona ‘has a very unique personality; perhaps it is difficult to define but when you’re there, you know that you’re in Barcelona, not in Berlin or London or New York. It’s Barcelona. Plus, it’s an addictive city.’

But so many qualities also have their counterparts, with their advantages and downsides: ‘Obviously this affects tourism; if it’s a well-located city that offers culture, has spectacular architecture and good food and is welcoming to visitors, people want to go there’. He says that this character of Barcelona ‘is definitely a strength and has to be protected.

Cities are competing globally and there are many players. If you keep this personality you’re more likely to be successful.’

—22@ has been a globally significant move.

One of the pieces of Barcelona that Bruce Katz has found to be genuine from the very start was the 22@ district, which he claims to fervently admire. ‘From the very start, we noticed that 22@ was a globally significant move, and we tried to see how it could be implemented in other parts of the world’, he says. Indeed, in this urban expert’s opinion, these districts with a specific purpose have emerged as the new spatial geography of innovation.

‘Barcelona was the first city to name a district that sought to focus on innovation. There was a purpose.’ In one of his books, where he devoted a chapter to innovation districts around the world, he attributes their genesis to the city of Barcelona.

Collaborative leadership

Katz argues that innovation districts—where academic institutions, corporate R&D, new companies and support organisations coexist in mixed-used communities that promote creativity—require a new level of enlightened leadership which collaborates in order to compete by working on all fronts and exploring all possibilities. ‘22@ literally invented the term “innovation district” and played an essential role in deciphering the theory behind the growth of these areas that shape the economy’, he says.

Bruce Katz believes that the evolution of the 22@ district has also proven cities’ power to recover spaces for new purposes. ‘Tracking the 22@ district is still essential in the evolution of innovation districts in the United States and beyond’, he stresses.

The fact is that, 20 years after the creation of this tech district, which was founded in 2000 and has earned a name for itself as an international model of urban regeneration—a process not bereft of the debates that characterise Barcelona itself—22@ has taken a leap forward to rethink itself, to establish the actions needed to maintain its dynamism and appeal in the upcoming years. The ‘Repensem 22@’ process, promoted by the City Council and involving representatives of the public, the business community, universities, urban planning experts such as Bruce Katz, and the authorities, culminated in new urban planning regulations designed precisely to promote a mix of uses. Thus, in addition to better protecting the industrial heritage and creating green hubs, the amount of land meant for housing was increased, going from 10% to 30% of the built area. In contrast, office space has dropped from 90% to 70%.

To drive this new period and guarantee implementation of the plan, in late 2020, the 22@ Office was launched, a management tool which is also a unique venue for attending to companies and citizens in the economic and urban design spheres. The office also works to attract, promote and boost entrepreneurship projects related to the development of the zone.

—A city is first and foremost for its residents.

‘The purpose of a city, what its managers have to consider, is: Whom is it for? And a city is first and foremost for its residents. Tourism is great, global investments are wonderful, but the purpose of a city is for the people living there to have a high quality of life,’ Katz asserts.

Based on this assertion that a city is for its inhabitants, he believes that tourism ‘has to be managed once you have it; you can raise tourist taxes in order to reinvest it... There are many possibilities, especially with the new technologies. Citizens

also profit from tourist activity by renting flats and selling services. The important thing is that at the end of the day there is a balance between what you get and what it costs you to get it; it has to be worth it.’

In this urban expert’s opinion, the key is for cities to be economically diversified. ‘Barcelona has tourism, but it has found that it has to diversify its economy more, either by promoting 22@ or by focusing on a blue economy or another type of innovative industry, and I think it’s doing this and doing it well’.

—Barcelona is among the group of pioneering cities in Europe.

‘The Barcelona brand is already being associated with the tech industry, not only with tourism and fun. The purpose is serious and I think that in Europe, Barcelona is among the group of cities that are leading this focus on innovative industry.’

An expert in urban analysis and diagnosis, Bruce Katz relates Barcelona to Tel Aviv, ‘which is also an attractive, magnetic city, although in a very different way. Tel Aviv is more chaotic than Barcelona, but it has an entrepreneurial culture and a very powerful culture of startups; it’s a place where people innovate. They are two different cities in many respects, but they are similar in this sense,’ he says.

The ‘new world disorder’ that Bruce Katz preaches was driven not only by COVID, ‘which led us to see how far globalisation had reached’, he says, but also the war in Ukraine, ‘which has changed the economic structure of the West’, and by the climate emergency. ‘I think that we’re in a decade of transition and that there’s no way we’re going back to the old normal. We’re not quite sure where we’re

heading, but we do know that cities are going to lead these changes. It is a fascinating period, and even though cities are quite set in their physical structures, in the way they are, in how people get around... their management has to include a more global vision; the city's economy has to be analysed and data have to be used.'

Are cities going to shrink? 'That depends. San Francisco's population is dropping, but those people are going somewhere... For countries that are stable, it's wise to have a good distribution of strong cities, and for the cities to be in a strong metropolitan network. Large cities are here to stay. I think the change is going to affect medium-sized cities more.'

This expert claims that even though cities' objectives may be the same, 'there are different ways of reaching them, because each city has its own industrial legacy, its own universities, which may be more or less innovative. Barcelona's situation is different than Madrid's and Bilbao's, and each of them should set their own strategy in order to reach their own objectives.'

—Each city should be the best version of itself.

'What's clear is that striving to become the new Silicon Valley makes no sense. No one is going to become it. Each city should be the best version of itself, and that's what they should strive for. That should be the objective.' So what is the best version of Barcelona? 'The point of departure is very strong... it's one of the most attractive cities in the world; it's magnetic. The question is: can it be more entrepreneurial? Can it have more industry? Now's the time to think about it.'

Regarding the lessons learned during the pandemic, Bruce Katz says that we are still readjusting.

'There have been so many different experiences... Some people didn't have to worry much and gained time for themselves and their families, while other workers were stressed to the utmost. There have been many experiences that depend on many factors, but structurally I think that we've questioned the purpose of certain parts of cities. The pandemic has been disruptive. We've seen that people don't have to go to the office every day; actually, they don't want to. And I think that despite individual experiences, the economy has changed and the issue is figuring out how we adapt, because we're not going back to "normal".'

In the opinion of Bruce Katz, who considers himself an 'urban optimist', a city is a mood and a convergence of complicities. And more prosperity can be generated based on this web of mutual trust. He maintains that divisions impoverish, not only in a city, but also in networks of cities.

Ambition and outreach

—Mike Blackman

The general manager of Integrated Systems Europe (ISE), the largest audiovisual show in the world for professionals, arrived in Barcelona on 17 August. Mike Blackman had been in the city before, but always for work. The first time, back in 1991, he came to give a talk on Macintosh computers at the Palau de Congressos. But in the summer of 2017, he came with his family on a cruise ship. That same day, the Rambles turned into the a nightmare setting.

The terrorist attack on 17 August marked the Blackman family's visit here. 'We found out as we were entering the port. My family was terrified but I thought that we shouldn't just stay on the boat. I convinced them that the police and authorities were doing their jobs,' Mike Blackman explains. So they disembarked the next day.

They decided to travel around the city while avoiding the Rambles. The taxi driver who stopped became an ad-hoc but effective guide for the entire day. 'He took us to the Sagrada Família and Casa Batlló, and we

drove along Passeig de Gràcia... He even suggested a restaurant. He conveyed his passion for the city,' Blackman recalls. Barcelona worked its magic. The city showed its best face, the same city that years later he would choose as the venue of the ISE. This show, which has an ambitious growth agenda, makes Barcelona the capital of the global audiovisual industry (AI) at least one week of the year.

Born in Guyana and raised and educated in London since he was six, Blackman started his career at the company that publishes the *Financial Times* and grew up in the world of consumer computer publications. Work led him to Munich, where he lives, and he founded the ISE in 2002. Barcelona seduced him, and he has made a decisive contribution to projecting the city around the world, just as John Hoffman, the organiser of the Mobile World Congress, the world's largest such congress, and Grant Dalton, the executive director of the America's Cup, have done. In the America's Cup, the Barcelona brand weighed so heavily that the city has been included in the competition's official logo for the first time in the history of this mythical event.

—Barcelona is increasingly international and open; its main asset is people.

'The city is growing, and its main asset is people. When I came here for the first time in 1991, you were lost if you didn't speak Spanish. Now it's a much more international and open city. Barcelona is a modern city with the Fira, a modern trade fair venue,' Blackman says.

To him the Fira exemplifies the city's transformation. 'At first there were only the venues on Montjuïc, which are lovely and have their charm but are old and do not provide what a tech event requires. The biggest attraction was seeing how the city went

from facilities more than 100 years old to some of the most modern in Europe. That is a reflection of how the city has changed,' asserts the general manager of the ISE.

The 2022 figures for Fira Barcelona and the forecasts for 2023 reflect the venue's consolidation and importance in the city's economy and international outreach. After the fraught years of the pandemic and the forced cancellation of activities, in 2022 more than 250 events were held in the venues on Montjuïc, Gran Via and CCIB, including trade fairs, conferences and other events. The Mobile World Congress opened the calendar and accounted for 20% of its invoicing—211 million in 2022—followed by other major fairs like Alimentaria, the ISE and the Seafood Expo Global. Fira Barcelona has also stepped up its activity abroad by co-organising events in Mexico, Brazil, Argentina and the United States.

Before setting his event in Barcelona, Mike Blackman was at almost all the editions of the Mobile World Congress (which moved permanently to the city in 2006). 'Barcelona is ambitious, and the politicians are pushing to make technology an important sector, and this is encouraging. Proof of that is what Hoffman has done with the MWC. You can see not only an entire city but the entire government of Catalonia involved behind that event.'

From Amsterdam to Barcelona

'The first time I met with the heads of Fira, when the ISE's headquarters was still in Amsterdam, I told them that one day it would be the largest event they'd host, and they told me that everyone said the same thing. We grew in Amsterdam until becoming the largest event in Holland', says Blackman. He confesses that he was always looking at other cities because he knew from the start that the Dutch city did not have enough room to accommodate its potential for growth.

'Amsterdam was an ideal city with loads of charisma and a good atmosphere. We looked at all the possibilities and visited lots of buildings, but they weren't large enough. We had to install tents, but they're not the best option in northern Europe in the winter. And we needed to grow,' he states.

The process of choosing another venue for the ISE began with a long list of cities. Michael Blackman and his team looked all over Europe. They were searching for a city that could meet several requirements. First, it had to allow the show to grow within a minimum timeframe of ten years. Secondly, it had to have enough affordable hotels. Third, it had to be accessible and have enough flights. The list grew shorter. It was difficult to compete with Amsterdam. They looked at London, Frankfurt, Milan...

—We had to move to a city with charisma, and in that Barcelona is unique.

'We considered many cities. The space for the event in London wasn't big enough; Milan was large but didn't have hotels nearby; Paris had large venues but the hotels didn't fit what we needed,' explains Blackman. They also asked their clients, both exhibitors and visitors, what they thought a good venue should have. And the responses always revolved around reasonable hotel prices, ease of reaching it and of getting around in the city, good restaurants, places to see... and the language. 'And based on these criteria, the Barcelona option was always among the top-ranked. And there was another thing. When you look at cities in Europe, Amsterdam has charisma. If we had to move, it had to be to another city with charisma... and in that Barcelona was unique.'

The decision was made. The ISE's move was announced in 2019, and the first edition was held in Barcelona in 2020. 'We were not wrong. When people come, they

leave wanting to come back. In terms of hosting, the city is great, and the price-quality ratio and variety of options are also very good. You've got it all: the top restaurants and much more affordable prices than what you would pay for the same thing in New York, London or Paris.'

The tech industry

He acknowledges that the tech industry in Barcelona is not as powerful as it is in other European cities.

'The industry is now concentrated in northern Europe and the United Kingdom. The IT market and industry are now in the UK, Germany, France and Italy. We could rank Spain eighth in Europe.'

However, he believes that Catalonia is headed in the direction that Bavaria was when the government of that German region provided incentives for the tech industry to relocate there and large companies like Microsoft and Apple decided to move to Munich.

Unlike other events, which travel around the world, Blackman's choice is firm: Barcelona. And indeed, one of his objectives is to fix the place and date in the minds of exhibitors and visitors. Barcelona and the last week of January. **'We've tracked the people who completed the entire registration process but didn't come. At first they accounted for 15%, and the main reason they told us was that they had too much work or were ill. We want to be the most important event on their calendar. We want the last week in January to be blacked out for professionals in this sector. We want them all in Barcelona, and the more things happen that week, the better.'**

The pandemic thwarted Blackman's ambitious launch plans in the city, and the first edition could not be launched as grandly as planned. They had hired 17,000 square metres of space but had to downsize the event. And the ISE hasn't really shown what it is (15,000 square metres) and the ambitious growth it has planned for the upcoming years until this year.

In its most recent edition (2023), this audiovisual show gained ground as the new major conference held at Fira Barcelona. It closed with more than 58,000 participants from 155 countries, thus exceeding expectations and illustrating its potential by reserving more space—this year there were six pavilions to accommodate more than 1,000 exhibitors—for the next edition.

The new scene

In addition to the pandemic directly impacting the show, the ISE is also a barometer of the changes that it wrought at all levels and on a global scale. The audiovisual industry has been particularly involved in these changes.

—Everyone has gotten used to talking onscreen.

'There are two significant things that have changed with COVID. One is remote working,' says Blackman. **'Companies have questioned whether they really need to have people at the office all day long, and technology is playing a crucial role in this. My team, which has always been scattered around different cities, Amsterdam, Munich, London and Malta—now joined by the Barcelona office and a permanent five-person team here—was already holding weekly video conferences, but how many people had heard of Zoom or Teams before the pandemic? Now everyone is used to seeing each other and talking on video.'**

So what about the second change? **'We see it in retail. Amazon exploded during the pandemic. People have gotten used to shopping online, and shops have to change if they want to continue attracting customers. Shopping shouldn't be a chore; it should be an experience. Shopping should be synonymous with having fun, and technology affords many possi-**

bilities: ways of displaying your products on screens, virtual reality... I've seen car dealerships that have just a single model and project the different colours and accessories onto it.'

Blackman is convinced that in two years many fashion retailers will be using augmented reality and that customers won't have to try on the clothing. A mirror will scan the customer, take their measurements, project one model on them, then another one and another one... And then the purchase is sent directly to their home. Real-estate companies, too, can offer their customers tours of flats without leaving the office. 'A whole world of possibilities is opened', stresses Blackman.

'The pandemic has brought about many changes. Internet has become an indispensable tool, and higher-quality screens are becoming more and more necessary. COVID has really accelerated technological innovation. The ISE is a catalyst of all this development, and Barcelona, with its port and its location, can be the main gateway of this entire industry in southern Europe.'

Regarding the city, Blackman expresses reservations on only one issue: safety. 'I know that more work is needed to improve safety. Pickpockets have to be contained because it's an issue that people talk about and that Barcelona's competitors use to detract from the city's image. And that's a shame because the city is so incredible.'

To materialise Barcelona's potential, Blackman suggests creating incentives—including tax incentives—to attract large tech companies and foster a broad business ecosystem. At the same time, he highlights the city's strong points, like its ability to attract talent and the role and influence of organisations like Barcelona Global, 'which doesn't exist in other cities, at least not on this level'.

—*Barcelona is more proactive than reactive.*

Faced with the difficult task of summarising Barcelona in a few words, Blackman only takes a few seconds: 'It's a city that offers opportunities, that is clearly geared towards the future and is ambitious. The ISE got its start in Geneva, which was a great place, but it wasn't the ideal venue for a European event. We looked at many cities, and the authorities in Amsterdam didn't help us much, especially at first. But in Barcelona it was different. From the very start, Fira, the mayor and all the organisations came to tell us how they could help. I had the sense that the city wanted us here and wanted us to be successful. We hadn't seen that in other cities to that degree. Unlike other cities, Barcelona is more proactive than reactive, which is what the majority are like.'

The gastronomic brand

—Toni Massanés

It doesn't matter who answers. It doesn't matter what field they work in or where they come from. One thing always stands out when talking about Barcelona and its strengths. And that thing is food. The city's image, international fame and especially quality of life have a great deal to do with a sector whose full importance and potential isn't acknowledged.

However, someone who is crusading for this, and has been for decades, is Toni Massanés. This gastronomist directs the Fundació Alícia, a research centre on cuisine, a laboratory of responsible food that is working to ensure that we all eat better. Based on scientific rigour, Massanés promotes healthy, sustainable, delicious food. He does so from the Fundació Alícia, as well as by writing books and articles, overseeing studies, participating in scientific committees and conferences and lecturing all over the world.

A convinced El Bulli fan, he participated in that wave that surpassed gastronomy and changed everything. Here and abroad as well. His broad view and knowledge of the world add value to the more local traditional cuisine that he himself has inventoried.

At the REACT conference, he posited the possibilities of this sector for a city like Barcelona.

'Food is universal, and restaurants are one of Barcelona's leading industries. If we add food, it's even more important', says Massanés, who supports the El Bulli phenomenon and the Forum de la Gastronomia, 'which was crucial in positioning Barcelona's image in 2005, when it had no three-star restaurants. How did we do it? We took advantage of the potential of El Bulli, Celler de Can Roca and others. They were all outside the city in the strict sense, but they positioned Barcelona in the world.'

The role of cities and the concentration of people in that centre and its metropolitan area has substantially changed the food system. 'In the past, we lived much closer to many of the things we ate. It's true that never have all of them been nearby; for example, we have a great culinary tradition with codfish but it's not from nearby. But people were more scattered around the land. Now we all live jammed together, but we all eat and have to understand that our lives are heavily conditioned by it.'

—The economic burden of food has been divided by three while housing has multiplied by three.

Massanés bemoans the fact that 'this rich, careless image of our food' prevails, because food has, among other things, direct consequences on our health, on diabetes and obesity. People complain that food is expensive, but food is very cheap compared to our standard of living! Over the past 50 years, the economic burden of food on families' real budgets has been divided by three, while housing has multiplied by three,' he reflects.

The United Nations Food and Agriculture Organization (FAO), which works to improve food security, has warned that in order to be sustainable, cities have to have a food region, a connected and resilient system around them. 'From the standpoint of the food supply, Barcelona is still perceived as a place where this system exists. Because we live in a varied country, we have very clear richness and diversity.'

—The product is the landscape nearby and the landscape is the product further away.

'The landscape and the product are the same. The product is the landscape nearby and the landscape is the product further away. We have a varied country, and that's wonderful. It's great not only for our gastronomy and food, which we are told is the healthiest in the world, but also for the planet's biodiversity and therefore, it's an asset worth preserving,' Massanés stresses.

This is why he highlights Barcelona's responsibility: 'it should capitalise on its status and generate and design the future, including this reality. The city's vision of modernity should also include how we manage the food system.'

—We cope with sudden breakdowns, but we don't perceive the slow ones.

'If we aren't tackling issues related to the food system and sustainability, it's because they're undergoing a slow breakdown. We cope with sudden breakdowns. The pandemic comes. Speed is of the essence, and everything is shut

down from one day to the next. The problem was analysed and we found that many things could close, but not the food system. We cope with quick disasters and sudden breakdowns, but we don't perceive the slow ones. It's a problem.'

'What's wrong? Sustainability is something left for later, and the problem is that priorities always come before things left for later', says Massanés, who draws a parallel with fossil fuels: 'We know that we have to stop using them, but the war in Ukraine starts and we bring them back and open coal mines because it's a priority, because we have to save today. And we'll think about tomorrow.'

Essencial values

He believes that the pandemic did allow for a reckoning with essential values that well-being may have ignored, but that the focus was on technology; digitalisation accelerated, a new economy and artificial intelligence were advocated... And yet, from the food standpoint, no new long-term policies or strategies were suggested. 'The idea of always growing and supporting that on a new tech economy isn't bad, but it can be dangerous'.

For 2030, Massanés suggests bringing indicators on the planet's health and the problems that directly affect our society to the fore, like the explosion in diabetes in Spain and the problem of child obesity. And in parallel, he advocates showcasing and working on realities like those in the Bloomberg Healthiest Country index, which state that Spain is the healthiest country on the planet.

'We're healthy because we have a universal healthcare system that is a gem and we eat great because the Mediterranean diet is quite varied, even though we adore loads of things from other parts of the world. Self-esteem played a prime role in the El Bulli revolution, which turned cooking into

a multicentric cultural revolution. ElBulli signalled a paradigm shift. It made us change the way we think. Prominent scientists admit it. And this meant that in the eyes of the world, we were in a prime position from the standpoint of both health and what we offered. Everyone wanted to come here.'

—Self-esteem played a prime role in the elBulli revolution; it was a paradigm shift.

He associates self-esteem with what is local. 'We shouldn't make restaurants for tourists; they have to exist, but they should not be our flagships. Restaurants should be for the people who live in the place. If we make a new Olympic Port now and Barcelona residents don't go there, it won't be successful. When we go somewhere, we want to eat what they eat there. Monuments are great, but they can't explain where you are the way food can.'

The gastronomic experience

Nor can digitalisation, screens or augmented reality, which enable us to discover so many things, compete with the sense of eating a great *escudella* or a spherical olive. 'It's not the same! Food is experience, and Barcelona can play in the big leagues of global food capitals. It has talent, plenty of talented chefs, and the more restaurants that open and more varied they are, the better. We may not be an aeronautic power, although we do lots in that field, but we are a food power. Indeed we are! People from elsewhere say so! We should take advantage of it!' he says emphatically.

—Culture is always linked to whether or not we love ourselves.

Toni Massanés admirably mentions the high self-esteem and value that other countries like France and Italy confer on their products. In addition to being part of their personality, they really believe that their food is the best in the world and that it's the best they can offer. Their indisputable flagship. They associate it with their identity, and with pleasure. 'That's culture. Culture is always linked to whether or not we love ourselves... When we love ourselves, we're on a total high and when we don't we're low. Here, we also have a kind of provincial self-fandom...', he bemoans.

The local and the universal, the creative and the regional have to feed each other. 'We have to identify and see our value. We can't create one prestigious food system for the people who come here and another one for us. What the neighbourhood shop represents socially is very important. No matter how many large chain stores there are, the existence of the "tienda del barrio" is fundamental. And it's good to have those stores, but we don't have to see ourselves reflected in them, or in the chains of pizzerias or pasta shops... What makes us good, rich, healthy and sustainable are our products, being familiar with them, fussing over them, caring for them, cooking them, consuming them...'

And having come this far, there's one more step: 'Because we're good, healthy and sustainable, because we are a referent in gastronomy, let's think about what the world needs for the future. What are we good at so we can offer it to the world? Let's make this one of the keys of development. Let's create synergies in Barcelona.'

His suggestion is how to use technology and knowledge to develop, for example, more personalised health management and to encourage the creation of companies and startups around this entire sector. This scenario could include anything from the clinical studies promoted by some hospitals like the Hospital Clínic to universities and research centres, and he cites Predimed (Prevention with the Mediterranean Diet) as an example, a multicentric nutritional clinical trial for the primary prevention of cardiovascular diseases.

In the same field, the Fundació Alicia has promoted studies to develop alternative proteins and initiatives like the *Eat Well During Cancer Treatment*, a pioneering website created with the participation of oncologists, nutritionists and research and hospital-based healthcare professionals, as well as the Catalan Oncology Institute.

—Basic research efforts should end up affecting the neighbourhood shop.

‘We are good at research and we are leaders in generating new knowledge, although sometimes we fail at knowledge transfer. We are partnering with several companies that work in development in the Basque Country because there they receive all sorts of assistance. We have the best universities in Spain in terms of health and technology; we have the Universitat de Barcelona (UB), the Universitat Politècnica de Catalunya (UPC), the University of Girona (UdG) in tourism, the Universitat Autònoma de Barcelona (UAB) in food technology, IRTA, Hospital Clínic, Can Ruti... and we’re not taking advantage of them. All these extremely important basic research efforts should end up affecting the neighbourhood shop.’

Another focal point is to champion ‘the smart city and the elder-friendly city. Many people in Barcelona live alone and want to be autonomous; we have to invent the future for them, for their health and wellbeing. The city needs it, and so does the world.’

Getting back to restaurants, and considering them a cultural industry, an interpretation centre or even an art gallery showcasing the culture of a place, its environment and its landscape, the power of transformation is vast. ‘When you travel, you know where you are by the food. Everything is connected: health, sustainability, pleasure, flavour, good taste, whether we find one thing or another appetising... The only way biological and cultural evolution have given us, what has made us human, and the only chance to survive is not to separate future, sustainability and pleasure.’

‘We have managed to be the ones who best join these concepts. We have to take advantage of artificial intelligence systems, blockchain technology and the life sciences, and then a world of possibilities opens to us. We are the ones who are the best positioned to work on this, and experts in smart cities, visitors and tourists are thrilled to come to Barcelona to see how well people live here.’

ANA MAIQUES
SISÓN PUJOL
ANDREU VEÀ



INNOVATIVE
TALENT

The latest X-ray of Barcelona's digital ecosystem confirms the consolidation of this sector and the growing prestige of the city as the largest innovation hub in southern Europe, with more than 1,000 startups established in the city and the presence of technology centres of foreign multinationals.

This is reflected in the *Tech hubs overview report*, produced by the Mobile World Capital Foundation, in collaboration with Barcelona City Council and the Generalitat de Catalunya, and presented last February. The study counts a total of 96 foreign companies that have chosen to set up a digital centre in Catalonia, 99% of them in the metropolitan area of Barcelona, which accounts for 78% of the total. Among the prominent hubs are those of Microsoft, Google, Intel, Pepsico and Sanofi.

Arrivals have soared over the past five years, including during the pandemic. Since 2018, the number of hubs has been more than doubled. Almost eight out of ten companies are physically established in Barcelona city, 46% of which are located in the 22@ technology district.

Access to international talent and the availability of local professionals, the digital and entrepreneurial ecosystem, costs and taxation are the reasons that have led these companies to set up in the city. According to the promoters of the report, in this field Barcelona competes at the same level as Madrid and Lisbon and a little behind Paris and London, and companies invest an average of €6.3 million to open their hub in the city. By country, the majority come from the United States, Germany and France.

More than 65% of these companies belong to three sectors: gaming (32%), industrial solutions (21%) and health (13%). By 2022, the Barcelona hub had a team of 160 people. In fact, the size of the centres has increased in recent years and currently almost 40% of the hubs have more than 100 people on their staff.

The economic impact generated annually by this ecosystem is over €1.4 billion and the forecast is optimistic, with the authors of the report estimating that it will exceed €2 billion by 2025.

Three entrepreneurs from different sectors and perspectives recount their experience and the challenges Barcelona faces in scaling up innovation and diversifying a local economy that is heavily based on the service sector.

The challenge of scaling up —Ana Maiques

In 2010, Ana Maiques was nominated by IESE as one of the most influential entrepreneurs under the age of 40 in Spain. A year later, along with Giulio Ruffini, she founded Neuroelectrics in Barcelona, developing technology to treat neurological diseases. They have created a medical device in the design of a cap with electrodes that can monitor electrical activity of the brain. Each electrode generates an electrical pulse capable of causing a non-invasive and very precise neuronal stimulation designed to reduce epileptic seizures, improve depression or improve the quality of life of Alzheimer's patients.

Maiques' entrepreneurial career began much earlier, in 2001, when Starlab, the Belgian company where she worked, went bankrupt and together with Ruffini decided to buy its subsidiary in Catalonia. He, a physicist and mathematician, contributed scientific research. She, an economist, provided the market knowledge and the necessary financing to bring the application of this science to the real world.

Between Barcelona and Boston

Although created in Barcelona, Neuroelectrics, which now sells in more than 45 countries, opened another office in Boston in 2014, the year in which Maiques

received the third prize from the European Union for Innovative Women. Since then, this entrepreneur has come and gone. She lives between Boston and Barcelona and knows the business and entrepreneurial ecosystems of both cities well.

‘Barcelona has a very good quality of life and attracts a lot of talent from all over Europe because people want to live in the city,’ says Maiques. This businesswoman believes that ‘we have very good universities at a technical level, very powerful, there is scientific talent and a very creative DNA... We are very good at publishing; what we lack are top-level projects, at an international level of companies that scale up and attract talent from abroad but to stay, so that they are projects that compete at a global level with the large Asian and American companies.’

And in Boston? ‘There are companies there that are leaders in their sector, that have received very large financing. We should try to be more attractive in this aspect; we should understand that the fact that there are big projects and big companies that scale up is very important, we should be more *tech friendly* and more *business friendly*.’

Maiques insists that this creativity lacks funding for companies to grow, ‘we also lack international culture, we lack English, we lack *business development* tools. We lack international scale.’ And she highlights the work carried out by cities such as Lisbon, ‘which have made tax efforts to attract and retain talent and it has worked for them.’

On the evolution of Barcelona, ‘in some things we have improved because we do have some companies that are competing globally, very innovative... And I think there are sectors that are growing a lot in Barcelona, but if we compare ourselves with cities like Paris or Boston or even Lisbon, I think we need to make a much firmer and clearer commitment as a city. Gastronomy and quality of life are all very well, but we must also attract more talent and more companies and do the things we know

how to do. We continue to fail to make Barcelona visible in the world beyond the quality of life. We haven’t got out of this discourse.’

—All sectors have the capacity for growth, but you have to be firmly committed to one.

The health sector, which she knows well, is where she believes the city is well positioned, although she also believes that the area related to renewable energies has a lot of potential. ‘All sectors have the capacity for growth, the issue is which one you commit to. You have to commit firmly to one, without forgetting the others, and I think we have a lot of potential in the world of health, renewable energies and the agrofood industry,’ Maiques concludes.

This businesswoman defines entrepreneurship on the basis of three concepts: a vision (a good idea), being brilliant (because there are many people competing) and believing in the project. And the difference between success and failure lies in the good execution of that brilliant idea.

With Neurolectrics, she travels all over the world and if there is a city where she believes Barcelona can be set, she cites Paris as a good example: ‘Macron’s initiative to position France in the Escale Up Europe is encouraging; it comes from the obsession to ensure that in Europe there are more unicorns and more companies that compete globally. The Americans do it very well, in Catalonia we are learning and there are cities in Spain that have made a giant effort. Valencia has changed a lot, Malaga has done the same in the technological world, Madrid...’

Design as a driving force

—Sisón Pujol

Sisón Pujol specialises in providing design solutions that contribute innovatively to business growth. Specialising in small and medium-sized companies, she has been keeping her finger on the pulse of the sector for 30 years through the management of design, communication and marketing. She recognises Barcelona's creative DNA, its light, its gastronomy, its history, its culture... **'You would have to come with all your senses closed to not to get an experience from it. We are a positive, beautiful city, with a good climate,'** she says. She declares herself to be proudly from Barcelona, but adopted. She lays down her origins from the very first minute. She is from Camprodón.

'The Barcelona brand is resilient because the city is vibrant. It can go through higher or lower moments but it leaves no one indifferent, it is easy to establish an emotional bond with it,' says Pujol. She has been president of the Association of Art Directors and Graphic Designers, a consultant for ACCIÓ and a member of the Design Cluster, promoted and energised by the Barcelona Centre de Disseny (BCD) [Barcelona Design Centre].

—Despite having its problems, Barcelona fills your spirit, just like New York.

She compares this emotional bond that characterises Barcelona with that of other cities. **'For me Barcelona has a parallel with New York, a city that although it has its problems and you see them and identify them, it is still a city that fills your spirit.'**

Despite the criticism, she does not believe that Barcelona is in decline, **'but because it is so lively and emotional, everything that has happened in recent years has affected it. Society is going through times and the city, just like people or families, try to adapt to the changes. We are living through a paradigm shift and that affects us. I would rather say that Barcelona is a wounded city that has things to improve but that continues to be attractive and is moving forward.'**

She declares herself in favour of constructive criticism **'and I am the first to say that Barcelona is dirty, but that is not the only thing that determines the city. What determines the city is that it is lively and vibrant, that it appeals to your senses, through its gastronomy, its architecture, its climate, its music, its cultural offerings, its traditions... It is a city that is open to everyone.'**

—Barcelona sets trends but we don't believe it; it's part of our character.

Does it set trends? **'We mark them, but we don't believe it. It's part of our character to always see the glass as half empty, like the Barcelona fans who are winning and still suffering. Barcelona sets trends and there are many young people who are doing very well. Sometimes we let ourselves get carried away by a current of negativism that subtracts more than it adds.'**

She sees design as an engine of competitiveness. Her studio, Nomon Design, is a branding agency specialising in small and medium-sized companies to which she provides a comprehensive service, 'very focused on growth related to design tools. The graphic designer has many aspects and our purpose is to make businesses grow. They are small family businesses, which is where I come from, with limited resources and that often need to approach innovation or creativity; they need growth consultancy. Designers can adapt methodologies and criteria to different sizes of companies and help them to put themselves on the map, to be competitive, to go out into the world.'

A common language

She is convinced that Barcelona is an ambitious city. 'We are fortunate that little by little the success stories of companies that are working are becoming an example for others. There are many companies to help, which can make the leap. Those of us who are providing this service, all the creative industries and companies, of which there are many, small and medium-sized, in Barcelona and the surrounding business fabric, must work to find a common language,' she says.

'Creativity and business must be aligned. They must find that common plane; there is no need to name everything in English. Not all innovation has to be technological; it can also be creative. We have to be genuine and empathetic because there are many opportunities and they are not being taken advantage of.'

—We tend to be quite selective; the middle ground doesn't work.

'There is value in what is at the extremes; it is the middle ground that is not going to work. If you make a very globalised, very standardised product

that is of very high quality and has an extraordinary price and an extraordinary utility, this has to work. A product that is genuine, emotional and linked to the territory can also work. But if you are in the middle, if you are neither one thing nor the other... you have a challenge on your hands. People tend to be quite selective. When I want to go out for a quick menu, I know what I'm looking for, and when I'm looking for experience I look for experience.'

As emerging sectors in Barcelona, Sisón Pujol is clearly committed to creative innovation. 'For everything that has to do with creativity, architects, interior designers, industrial designers, graphic designers, fashion designers... All this industry, this network of creative people who, for whatever reason, decide to develop their careers in Barcelona, must be cultivated and pushed, because in this aspect we are really good and very unique. There are countries with a greater capacity for technology and innovation. There are Nordic countries with a very good and perfect design. In addition to that, because knowledge can be acquired, we have the spark that comes from the place where we were born. It sounds like a cliché but it is true. We are cheerful.'

—Creative resources help companies to be more competitive and to grow.

The strategy should therefore focus on boosting the connection between the creative and productive facets. 'There is quite a lot at institution level. There are associations and the creativity here is well recognised, but perhaps companies are not yet able to it. Perhaps what I would ask both our collective and the institutions is that they help companies to use these creative resources, which will help them to be more competitive and to grow.'

In fact, in the second edition of REACT, Sisón Pujol and Salvi Plaja (president of the Industrial Design Association of the Promotion of Arts and Design, ADI-FAD) moderated a round table on the role of design in the economic development of Barcelona, in which this gap between the thriving ecosystem in creative industries and the outsourcing of this service by many companies was addressed. They addressed why for many companies design is still seen as an expense rather than an investment and thus the impact of the creative industries on the overall fabric of industry ends up being very low.

Making a difference

Business has always been about efficiency, while design has always been about difference; producing difference efficiently is therefore the key to Sisón Pujol's success. **'It is good to promote design and creativity, but we must also contribute to normalising it. Those who work in creativity must be integrated into companies and give it the importance it deserves,'** Pujol insists. **'We have to overcome some clichés... Many designers only think of working in a studio when there are many companies where they could grow professionally.'**

In terms of training, Pujol considers that the offer is good. **'Perhaps we are generating expectations that cannot be fulfilled, but it is true that the training on offer is very attractive and that is why students from other countries also come here. They come to Barcelona because it is an attractive, vibrant city... a complete experience for any young student. With a good offer of design schools and also business schools. It's a very good mix. The question we have to ask ourselves is whether these students leave their talent here.'**

Mobility here also plays its part. **'There is a good business fabric around Barcelona with companies that are already hiring design but sometimes it**

is difficult to recruit talent that wants to work in these companies. Many are in the metropolitan area of Barcelona or in industrial estates and here there is also a problem of mobility. Young people move around by bicycle, by public transport... How do they get there? Here we should also ask ourselves how we can help these companies so that this talent can get around.' So that they can commute and still have a competitive salary.

'Wages are determined by the market... but between the time you lose in transport, the lack of quality of life, the difficulty to reconcile work and family life... this makes people think twice. I know that there are companies with a good product and the capacity to export that can't find people.'

The creative industries account for more than 13% of jobs in Barcelona, according to data from the City Council. In addition to design, artistic production and exhibition, crafts, the audiovisual and multimedia labour market, the cultural industry and the media make up this extensive world. Hence the wide range of professional profiles. And despite its diversification and extension throughout the city, 22@ has become an area particularly dense in companies dedicated to these creative industries.

The innovative geography

The Disseny Hub Barcelona (DHUB), based in Plaça de les Glòries, has been designated as a hub for the creative fields in Barcelona and at the same time a meeting place for the cultural, business and training worlds linked to the sector. Other hubs are in gestation, such as the Urban Tech Hub, a centre designed to generate ideas in the field of urban planning and architecture, which will be installed in the former La Sibèria ice factory, and the Ideal Centre d'Arts Digitals, which will extend the Palo Alto project for innovation in the creative industries.

The transformation of the historic Post Office building into a new centre of economic activity, with companies, entrepreneurs and training on demand, is another of the commitments to the future. Three public institutions are involved in the project, christened New Post Barcelona: Correos [postal service], Barcelona City Council and the Consorci de la Zona Franca de Barcelona (CZFB) as financial partner and in charge of its operation.

The ambitious transformation of the building will involve an investment of €53 million by the CZFB. The aim, in addition to bringing together three worlds in the same space—business, academia, startups and young people looking for jobs—, is for this activity to radiate in a neighbourhood that is severely dependent on tourism and to lay the foundations for turning Via Laietana into another hub of innovation.

Connected innovation

—Andreu Veà

He hasn't lived in Barcelona for 20 years, but every month Andreu Veà returns to the city. This restless telecommunications engineer has many fronts open. His unique technological profile, innovative, creative and, above all, a connector of people (although also a connector of ideas with companies and a connector of companies with the market), has led him to lead and materialise numerous projects. He is an Internet pioneer, an entrepreneur in the Telecommunications sector, was president of the Spanish chapter of the Internet Society and Digital Champion for Spain at the end of 2014, that is, ambassador of the Digital Agenda of the European Union.

His professional activity started coinciding with the first steps of the Internet sector in its popularisation and domestic access stage. He was a founding member of Asertel (the fourth largest Internet provider in Spain) and later directed the Internet strategy of Retevisión-Auna when the market was liberalised and Telefónica's monopoly ended. In 1999 Andreu Veà also created, promoted and was vice-president of the Catalunya Neutral Internet Exchange Point (CATNIX), an initiative that would later be extended to Galicia (GALNIX).

The origin of the Internet

In 2002, he received his doctorate in telecommunications with a thesis on the creation of the Internet, which earned him the respect and friendship of Vinton Cerf, considered the father of the Internet, and from whose hand Veà landed at Stanford University.

He swapped the management of Retevisión for Stanford, where he created the platform *Who is Who in the Internet World*, a continuous and sustained work that led in 2013 to his book *Cómo creamos Internet* [how we created the Internet], with recorded interviews with more than 350 professionals involved in its creation.

Throughout these years, Andreu Veà has shared his professional activity with teaching, giving classes at the La Salle School of Engineering in the Masters in Electronic Commerce and the Masters in Advanced Telecommunications Networks and Services.

He collaborates with Futura Networks, organises the Campus-Party Tech Festival, gives conferences all over the world, and advises public and private organisations.

Once in California, he contributed to the launch and implementation of Spanish technology-based companies in Silicon Valley and in 2008 he created the Interesting People community (IP), a group of highly qualified professionals of different specialties and nationalities who share an interest and concern for innovation.. The different divisions of the ‘warriors’ that Veà captains, 14 in total, were born from IP, and among them, the CovidWarriors.

—If you put interesting people together, interesting things happen.

‘If you put interesting people together, interesting things happen. If you do it in a sustained way over time, then explosive things happen,’ says Andreu Veà. And this is IP.

Stanford turned his life around. In a way it was a new beginning ‘without a job and in one of the most expensive cities in the world... I had to invent things and I started to bring in young Catalan entrepreneurs... I rented them a room in my house and put them in contact with Silicon Valley companies. I offered myself to COPCA, which would later become ACCIÓ. At first I acted as a kind of goodwill ambassador... And things started to grow. I took more than 600 companies, what would now be startups, 12 of which have set up there,’ says Veà.

IP philosophy

Once a year, until the pandemic prevented it, Veà brings together the hard core of IP at a *calçotada* [Catalan tradition where they eat a type of green onion] in a farmhouse near the Camp de Tarragona high-speed train station, in what has become the group’s main social, recreational and inspirational event. A sort of disruptive party where talents and ideas come to the surface and where projects that are now significant realities have also been launched.

‘Around 250 people come from 98 cities in five continents. Some come from Stanford, others from Harvard, London, Murcia... There are people who would like to be there but aren’t, and I don’t let politicians in either...’ Veà admits.

From these meetings have come initiatives such as the “stratospheric *calçot*,” which travelled to Palma de Mallorca in a helium balloon or, in the last edition, on 29 February 2020 (at the gates of pandemic lockdown), the project to create a robot to carry out PCR tests.

‘We thought about what we could do about the situation that Covid-19 was causing and then we already saw that robots for PCRs were urgent. Instead, the public administration opted to buy antigen tests, which failed a lot and in many ways... We decided to design machines to robotise a process that is very cumbersome manually,’ explains Veà.

—We decided to create machines to robotise a very cumbersome manual process.

At that last *calçotada*, ‘there were hospital directors, scientists, top researchers, and we promoted a robot production line. Of the first four, two robots were installed in hospitals in Catalonia and two in Madrid. We made them with a kind of 3D printing.’

Andreu Veà had to self-isolate that March 2020, after participating, as a national selector, in the best mobile applications programme of the United Nations. The pandemic was beginning to spread globally and he had met with other professionals from China, Iran and Italy. By the time he came out of self-isolation, he had created and registered the CovidWarriors, a non-profit association made up of professional volunteers, senior managers and patrons from all walks of life united in the fight against Covid-19 with three objectives: to unite volunteers (proactive organisations, entrepreneurial talent, technological initiatives and funding), to connect (with the specific needs detected at a logistical, social health or psychological level) and to accelerate (own or existing initiatives that with technology and the power of the pragmatism of expert multidisciplinary teams amplify the impact against Covid-19).

Recognition

‘Our robots are much cheaper than those of other companies and we give them away to hospitals. I was named Man of Spain in 2020, and I have received 27 awards in the last 30 months. Reality beats fiction. The thing was that some companies in Andalusia gave money to a Catalan—he—who lives in Madrid to hire some people from the Basque Country to make machines to supply hospitals,’ he reflects.

Andreu Veà insists that ‘IP always helps without expecting anything in return. I have always had

an open vision. What do you want, to make money or to make an impact? I wanted impact; if we had patented the robot, we’d still be doing tenders, and we all know how public tenders go.’ Not in vain “Join the fight! Don’t ask for permission, you’ll ask for forgiveness” is one of the group’s mottos.

—If we had patented the robot, we would still be bidding for tenders.

IP is the origin of many things. ‘When I created the CovidWarriors, I made a call on IP and within 24 hours I had 80 people on my side. Very powerful people, engineers, researchers, doctors... most of them women. During the pandemic, as it was a war, we called the Warroom group, and every day at 9.30 a.m. we met, and we did so for 300 days.’

Andreu Veà has specialised in organising a civil society elite to propose solutions. ‘We didn’t organise against, but on a parallel level to the public administration, which is getting knocked out... All the donations I gave to the kitchen, not to the caretaker’s office... Torra called me, but the only politician who made himself available to me was Ayuso’s right-hand man.’

He is convinced that politicians, but above all the system holds back innovation. ‘We have also created the CancerWarriors division and the ClimateWarriors division, because as nothing is being done in Catalonia in terms of renewable energies and neither photovoltaic nor wind power plants are approved and we are in a climate emergency, at least we encourage civil society to help people install panels in their homes,’ he says.

—The administration’s management is based on mistrust.

‘The management of the administration is based on mistrust, which is what the word certificate tells you. We have raised more than €8 million, not one of which was public, and we have given the robots to hospitals free of charge. If installing the first four was hard, then we made 14 more and so 18 hospitals have our machines to do PCR tests,’ adds Andreu Veà. He is now working on the implementation of a sterilising robot, ‘so that a job that now manually takes between 36 and 72 hours is reduced to a few minutes... it’s spectacular. I won’t stop until it is implemented,’ he warns.

From the workshop to the company

On the reality of Barcelona and its innovative pulse, Andreu Veà is critical. ‘But I have said it to everyone and I maintain it: the same thing always happens to us and it has been happening since the Middle Ages. We know how to create workshops but not companies. When a university says they have created 111 startups... In five years there will be two left. We make small companies and the probability of a small company dying is much higher than that of a medium or large company.’

So why don’t we do it? ‘Because we don’t have any money. Well, now there is starting to be venture capital... but here you have to end up mortgaging your house. With the work it takes to raise five million in Barcelona, in Palo Alto you raise twice as much. It is true that we have successful companies, but there are only three or four, such as Wallbox, Holaluz... And in the end they end up going to the Madrid stock exchange to raise money or for someone to buy them. It has always happened.’

He recognises a certain transformation in Barcelona, the effect of 22@ and the attraction of talent, ‘of course, we have a good climate, a brand, we are friendly, we go out at night... But the powerful people who come, then leave, because you have a wealth tax and because they bleed you with taxes, especially in Catalonia. In times of crisis, taxes

should be taken out. I am not an economist, but this is textbook and we are doing it the other way round, in Catalonia and in Spain.’

He is committed to the technology and biology sectors as those with the greatest potential for the city, because he is convinced that we are moving towards a wild transformation in which everything that can be automated will be automated, ‘and we have to take into account the multiplier factor. Wherever you can put information technologies, many things will happen and many things can be solved, in biotechnology, in health... These are sectors with a very large multiplying factor.’

—When the market adopts a project, it is innovation; if not, you have made an invention.

He is convinced that administration and reality ‘work in parallel worlds and the subsidised world is getting bigger and bigger...’ he regrets. And one last observation: ‘Of all those breathing machines that were invented during Covid-19 pandemic... how many are still working? My robots are still working in 18 hospitals in 14 provinces. This is innovation. When the market adopts you, you do innovation. When you make an invention, it is an invention. In Spain and Catalonia we are good at making inventions, but what is innovative is when the market adopts it.’

**KNOWLEDGE
AND GROWTH**

**LUIS SERRANO
GUAYENTE
SANMARTÍN**



Cutting-edge scientific research

—Luis Serrano

Catalonia has picked up speed and found its place in the European science and technology race. The sector has taken a leap over the last few years with the opening of several cutting-edge centres such as the Institute of Photonic Sciences (ICFO), in 2002; the Barcelona Supercomputing Center (BSC), in 2005; the Barcelona Biomedical Research Park, in 2006 and the Alba Synchrotron, in 2010. Four large infrastructures that are now a reality yet keen to grow considerably more.

In addition, a new project was presented a few months ago for building a second synchrotron, the Alba II, in the facilities of the first, in Cerdanyola del Vallès, representing a doubling of the current area and an extra 40,000 square metres. This will help to create a future Alba Science and Technology Park, for setting up enterprises and new research centres connected to the development of medicines, chips and green energies based on this complex particle-accelerator system.

Meanwhile the Barcelona Supercomputing Center is waiting for the arrival of a quantum computer to be integrated into the MareNostrum supercomputer and fully operational by the end of the coming year in the UPC complex. It will be the fastest in Europe, along with two other projects in progress in Finland and Italy.

Another player will soon be entering the scene, besides the big biomedical projects being carried out by Hospital Clínic and Hospital Vall d'Hebron: the Mercat del Peix [former Fish Market], which will be consolidating Ciutadella del Coneixement [Citadel of Knowledge], as a science and research nerve centre in the city. Luis Serrano, the director of the Genome Regulation Centre (CRG) has plenty to say about this latest project.

Founded in 2000, the CRG is an international biomedical research institute of excellence. Its breadth of subjects, approaches and technologies allows its thirty work groups to tackle a wide range of fundamental issues in the life sciences and biomedicine. Its research is divided into four major areas: genetic regulation, mother cells and cancer; cell and developmental biology; bioinformatics and genomics and systems biology. The CRG operates as a non-profit foundation, funded by the Catalan government, the Spanish government and the 'la Caixa' Foundation, and with the Universitat Pompeu Fabra also taking part. The National Centre for Genome Analysis, which carries out DNA sequencing and analysis projects, is also part of the CRG.

Luis Serrano used to head the Structural and Computational Biology Programme at the European Molecular Biology Laboratory (EMBL), in Heidelberg (Germany), when Miguel Beato, the CRG's first director, recruited him as his replacement. Serrano focused his work at the EMBL on protein folding and designing, having been appointed head of the Laboratory Group in 1993 and senior lead researcher in 2003. His career was more than consolidated in

Germany but Beato's offer was about turning the CRG into a world benchmark. **'There was enthusiasm and the possibility of doing new things in Barcelona'**, Luis Serrano stresses. So he opted for Barcelona and today the CRG has succeeded in positioning itself among the best centres worldwide.

—I've always thought Barcelona had to be the Boston of Europe in innovation.

'Barcelona continues to enjoy very large appeal. What I've maybe missed during these last twelve or fifteen years is, from the science point of view, that we've not been able to sell this image of Barcelona from this scientific and industrial perspective. Or we haven't made the most of our potential, bearing in mind the city's appeal and the level of our centres and universities. I've always believed Barcelona had to be the Boston of Europe in innovation', Luis Serrano points out, having come to the city from Heidelberg around the end of 2006 to run the CRG's Systems Biology programme and was appointed director in the middle of 2011.

Serrano reaffirms the city's potential, as reflected in the number of start-ups created over the last few years and research centres up and running. Even so, he maintains that the leap could have been bigger had there been greater investment from the authorities: the Spanish government, the Catalan government and Barcelona City Council.

Although Catalonia has been attracting practically half of the European funds allocated to the Spanish state for scientific research, **'I believe that the Catalan government ought to invest more... We aren't talking about a billion euros, merely putting an extra 50 million euros into the system, which would make the leap spectacular'**, he remarks.

‘That was something certainly done during the harshest periods of the crisis. When the Catalan government kept up its support for research, despite the difficulties, and not everything created during the Andreu Mas-Colell stage was dismantled. But a decisive commitment is now needed. Barcelona has always been a tourist city, of course, that’s undeniable, but bringing out this other side of Barcelona, as a powerhouse for innovation and talent, this is where I believe we have to give it a decisive push’, he maintains.

The cornerstones of this Barcelona of talent are indisputably the hospital and university research centres and the attraction of capital and creation of start-ups, especially dynamic in recent times. **“The last five or six years have seen more start-ups created in Barcelona than in the whole of the rest of the Spanish State”,** he added.

Aware of the need and importance of passing on research results to society, Luis Serrano helped to create Diverdrugs in 1999, in Barcelona, one of the top biotechnology enterprises in the Spanish State. He co-founded Cellzome (in Heidelberg), EnVivo-Pharmaceutical (in Boston) and Triskel Pharmaceuticals (in Dublin) and is a member of the Scientific Advisory Board for Diverdrugs, EnVivoPharmaceutical, Entomed (Strasbourg) and Cellectis (Strasbourg). He also co-founded Pulmobiotics SL, together with Maria Lluch, in 2020, a preclinical company that uses synthetic biology to develop new treatments and vaccines for various types of pulmonary diseases.

Here he stresses the importance of the future Mercat del Peix, given its concentration of biomedicine institutes in a single area. The initiative shows, as few can, how far the institutional agreement can go in promoting science applied to improving people’s living conditions, society and the planet, which are the hallmarks of this project aimed at becoming an international benchmark. It owes its success to a dozen players, including authorities and organisations.

Its promoters are the Universitat Pompeu Fabra (UPF)—whose Ciutadella campus is right next door—, the Barcelona Institute of Science and Technology (BIST), which groups together six public research centres and has private organisations collaborating with it, and the Institute of Evolutionary Biology (IBE), launched by the UPF itself and the Spanish National Research Council (CSIC). Also taking part are Barcelona City Council, the Catalan government, the Pasqual Maragall Foundation and the University of Barcelona (UB) and the Autonomous University of Barcelona (UAB).

The Citadel of Knowledge

The future complex, which is to build where the city’s central fish market used to be—hence the name—had been a BSM municipal-company car park until recently, will occupy an area of 46,000 m² and consist of three buildings, funded with a budget of 104 million euros. Some 1,200 researchers will be working there.

The Mercat del Peix, is the Citadel of Knowledge’s *pièce de résistance*, one of Barcelona City Council’s investments in the future and where, besides science-research infrastructures, renovation work is being carried out on the park’s heritage buildings (the Museu Martorell, the Hivernacle, the Umbracle and the Castell dels Tres Dragons), the Spanish State’s central library, which will be built next to França railway station, and the zoo’s scientific activity.

The Mercat del Peix complex’s largest building will be the BIST, with an area of 24,700 m² for 800 researchers and some seventy research groups at four of the entity’s centres: the Genome Regulation Centre (CRG), the Catalan Institute of Bioengineering (IBEC), the Catalan Institute of Nanoscience and Nanotechnology (ICN2) and the Barcelona Institute of Biomedical Research (IRB Barcelona).

The second block will have an area of 7,300 m² and house the UPF's Research and Innovation Centre for Planetary Well-Being. It will be meeting space for researchers from various areas of science, not just experimental but also social and humanities, who will be carrying out multi-disciplinary projects in planetary health, complex systems and data science, AI, economics and climate-change management, loss of biodiversity and global law and governance.

The Institute of Evolutionary Biology (IBE) will occupy the third building, with an area of 6,500 m². This is a UPF and CSIC centre focusing on research in evolution and biodiversity.

The complex will consist of a first underground level for common services and a second level, with an area of 7,000 m², integrated into the BSM municipal parking network, which will be the first to be conceived as a mobility-services hub. It will have electric-charging points, shared-vehicle rental services, secure bicycle and PMV parking, a parcel-collection area and a goods micro-distribution centre.

—Enterprises need space next to research centres.

'There's something that worries me and I've been saying it from the start, which is, we're going to bring in research centres but without any sites reserved for enterprises, for example. On the one hand, we're saying there's a need for developing the business sector and creating innovative enterprises but, once the spaces have been distributed, there won't be anywhere for start-ups or medium-size enterprises.'

Serrano insists that the logical thing is to create a space in these successful sites, once there's a concentration of research centres, for enterprises linked to those centres. **'If someone now wants to create**

a competitive biomedicine start-up, the money they get from investors won't be enough to buy the facility they need. Which has got to be near to research centres. Even when they're medium sized, boasting a 20-million-euro investment, it's advisable for them to be nearby. And that has to be planned. I believe there are very promising initiatives but they should be coordinated a little better, with involvement from the private and public sectors'. Concentrations create a critical mass and make sites more attractive.

'We've got a golden opportunity and that has to be properly planned. We ought to be clear about the strengths there are at the research and development level and see how we can opt for and attract not just risk capital but also big industries. They should come here not just to sell but to innovate and carry out research and development as well'.

The challenge is to ensure the research being carried out results in enterprises and start-ups not just with five employees **'but also with as many as 200 or 300 and which also attract pharmaceutical enterprises'**.

—If we want enterprise and development, then we're going to have to cut the red-tape.

Another aspect requiring improvement, if we are really aspire to making a quantitative leap in the sector, is the complex bureaucracy the current system entails. **'If the Spanish and the Catalan governments both really want Barcelona or any other area in the State to be super-competitive, they're going to have to return to the model that the entire process of change in research started under in Catalonia, which is over to private foundations, which doesn't mean there's no control over how**

you spend money, but they don't consider you as they do a City Council'.

The system for audits and justification of expenses takes up an excessive and unproductive amount of time for these organisations. **'The system ought to be more flexible and competitive, it shouldn't be that you've got a National Research Plan and ten years later, you're asked to find a taxi ticket, it's not worthwhile, and I believe that whole world is increasingly aware of the problem. If we want to attract enterprises and facilitate development, then we're going to have to cut the red-tape'**.

Serrano is not against the centres' financial control, **'but in other countries, for example, it's done randomly. Centres are innocent, unless proved otherwise, and you're randomly inspected from time to time, up to the last piece of paper, and if you've been dishonest you'll be in trouble, but it's not done every day, as it's not worth it'**.

Another management-related aspect that this researcher questions is the approach of public competitions. **'We managed not to lower the competition limit to 15,000 euros and it's been kept at 50,000 euros, but centres in other countries in our environment don't go in for public competitions unless they're for over 200,000 euros'**, he emphasises.

Further demands

"When I was in Germany and someone created a company, they didn't have to pay taxes on the shares they'd been given as investors, provided they kept them for a certain number of years. Not so here. While we've seen improvements under the new legislation, we're still not at the level of other countries. If we wish to attract big companies, we need to think about how that's to be done, without being unfair to the system, but being attractive to investors too".

—The pandemic has changed the way we work.

Improving the general level of English and making the most of scientific and technological heritage for promoting the city, are other issues with room for improvement. **'Many airports you get to in European cities, besides selling you places to visit, give you other types of information. Here in Barcelona, we can showcase not just the Sagrada Família but also the entrepreneurial city, the other side to the city, so people can find out we've got centres competing on the world level, hospitals conducting pioneering clinical trials, powerful universities and so on. We need to highlight all this so people know about it'**.

The pandemic's impact on the centre run by Luis Serrano, as in so many other places, led, for instance, to the adoption of remote work as a real option for combining with face-to-face work. Another change has been staff mobility. **'We've had to replace administration employees who have changed job. There are people who've reconsidered their lives and this has led to some changes. We may perhaps see this in a few years' time, with young people and their approach to life. There are more and more people of the opinion they're working to live and not living to work'**.

Luis Serrano recognises that researchers are very vocational, **'but it's true that most people in the past who finished their thesis would continue in their field of research and yet 50% of students now fail to pursue a research career once they finish their thesis. They decide to do other things. They think research careers are very long... I do think there's a certain change in people's perceptions regarding how to approach the world'**, he maintains.

It's not an issue causing him concern for now. He believes there has to be support for trained researchers in the country so they can be competitive

‘but there’s nothing wrong with bringing over people from abroad who contribute or with people from here leaving the country to run groups in the USA or Cambridge or wherever... That’s great’, he remarks, recognising that Barcelona is an attractive destination for such scientists. **‘We’ve got a lot of very good researchers writing to us to come to the centre but we don’t have a site’.** 65% of the CRG’s researchers come from other countries.

As a framework target for 2030, putting the focus on Barcelona, Luis Serrano is prioritising the attempt to facilitate the transfer of research centres to private companies to create new jobs and take the next step with start-ups. **‘We’ve managed to reach a point where we are creating a lot and it’s now time to make the leap with big investments and attract big industries, which not only come over to sell but put their development centres here too. And to coordinate spaces, create citadels of knowledge where research centres, enterprises and hospitals are concentrated, make ecosystems and not scatter them throughout Barcelona, we need to make three or four poles of attraction’.**

Like so many of his peers, Serrano’s devotion to science includes a strong commitment to the city, to consolidate Barcelona as a European benchmark in his field. Something like an extra responsibility. **‘It’s because in other places such as Cambridge—where he received his doctorate—this is already taken for granted. Nobody lobbies over there because the system already operates that way. The difference between an Anglo-Saxon country and a Mediterranean one is that in the former science is included in the structure, which no one would dream of questioning. In a country such as Portugal or Spain, you need to have a prime minister, like the one Portugal had, or an Andreu Mas-Colell to get things moving’.**

He believes the problem with depending on such leaders **‘is that when they leave office, things are**

threatened. There’s no one figure who can change the system in England. The system manages by itself, as in Germany. We are working to promote Barcelona; by contrast, nobody in Cambridge or Munich disputes its capacity for innovating or attracting. We need to push ahead with things here’.

New challenges

‘The world is changing radically and we’ve got to think about where we are heading towards. Artificial intelligence is going to change a lot of things’, Serrano insists. The CRG is studying how to incorporate AI into numerous research processes. But he is aware that, outside his field, **‘the changes are radical and the coming challenges very important and at every level’.**

Another of the projects that the CRG is running, in this case with the Barcelona European Molecular Biology Laboratory (EMBL), is meeting these challenges. We are talking about the Barcelona Collaboratorium for Modelling and Predictive Biology, a type of elite scientific co-working that will bring in the world’s best experts for advancing towards what is known as predictive biology. Having no permanent research staff, it aims to attract international talent, whether in the form of cutting-edge enterprises or scientists able to carry out short stays at the centre, debating and sharing ideas and working with local research groups to make progress in developing predictive models.

A change of paradigm —Guayente Sanmartín

Guayente Sanmartin is one of the top executives at the US multinational company HP and has built up her professional career in this organisation which has enabled her to live and work in several cities around the world. Born in Barcelona, she joined HP after completing her degree in telecommunications engineering at the UPC. Paris was her first destination. She returned to Barcelona as an engineer after a year in France and later moved to Singapore to run the Large Format sales department in Asia.

She combined Singapore with the USA where she headed several business areas for five years, first from Silicon Valley and then from Houston. She returned to Barcelona when she was offered the post of general manager and deputy chair of the Large Format area, a division with central headquarters in Sant Cugat del Vallès. Seven months ago, she and her family returned to Silicon Valley, since when she has been heading the global personal

computer business, one of the North American company's biggest businesses.

Her position in HP's current organisation chart is two levels below the general manager. She works with people trained worldwide and travels all over the world. 'I've been lucky enough to live in lots of places and I still think Barcelona's a very attractive city. Everyone says this... the climate, the food, the people, the environment, the context, the infrastructures... It's an especially lively city, though I think it could be more ambitious', she believes.

—Barcelona hasn't firmly decided what it's goal is.

One of the things from the pandemic, according to Sanmartín, is the need, more than ever, to ask ourselves questions, especially about the reason for things. The why. The purpose. 'We are experiencing a change of era. We've moved on from the industrial, technological and information era to the "purpose" era. Barcelona has to decide what it intends to be. It has an opportunity of becoming a benchmark innovation centre and it's not taking full advantage of that. There's an opportunity but no will to seriously consider what we're going to do. Are we going to turn Barcelona into the best city in Europe for technological innovation and start-ups around the sector we choose? We've got a sector linked to health and tourism with lots of potential, but no commitment has been made so far'.

At a time, such as the present, when a lot of people, and talent in particular, can choose the city they live in, Guayente is keen to set out and boost Barcelona's unique features. In what's good and what it can offer. What its value is. 'Barcelona has an unbeatable starting point but it needs to define its "why" and in my opinion it's important for it to position itself as an innovation city. It can do that. It has

to choose, in this mixed and remote world, which sectors it is going to stand out in and health is a field where it has already been working and can grow’.

The city as an organisation

Just as an enterprise sets out strategic goals and plans, Sanmartin asks the city to set out its own. **‘It’s because the city is an organisation like an enterprise and an organisation does not operate if it hasn’t got things set out and written down. Strategic plans are used for knowing where to head for, what our goals are. And not all the goals have to be about making piles of money, the attractive thing about cities in fact is that they can have goals with an impact on society, their goals need to have an impact on people’.**

Sanmartin’s focus is on innovation in the health and tourism sectors. She asserts that tourism is a very important industry provided that what it offers is properly managed. **‘If you sell sangria, people in search of sangria will come over. If you offer the best fashion in the world and, what’s more, you’re appealing to technology tourism and you’ve got a good offer of culture... tourism is going to be very enriching, not just for anyone coming over to but also for anyone living in the city. And that’s the transformation’.**

Is Barcelona making progress here? **‘I believe there’s a great deal of initiative, there are lots of people very keen to turn Barcelona into an innovation centre for start-ups. My concerns are whether the public environment is doing enough to help or encourage this to happen’.** For example, Sanmartin notes the facilities which entrepreneurs find in some countries, such as the United States, **‘where you can set up an enterprise in 24 hours’** and the tax advantages too. **‘A lot of capital is needed for innovation capacity and you’re not**

going to have any if you impose such high taxes. It’s very important to facilitate the ecosystem’.

‘The machinery for this ecosystem requires various pieces and at various levels, local and global. Which is why HP, a company centred and rooted in the United States decided to expand and establish itself in other cities as it wished to deal with a global market with its own separate needs. The company has one of its biggest innovation centres in the world in Sant Cugat, where more patents are being created and exported’, she explains.

HP established a base in Barcelona nearly forty years ago, with the establishment of its International Centre, and raised its stakes in 2019 with the opening of a new HP 3D Printing and Digital Manufacturing Center of Excellence for producing plastic and metal parts, one of the most important in the world in developing this technology. It is here that the company coordinates 25 other HP application-demonstration centres worldwide.

—If Barcelona were an industrial plant it would have the best land.

‘When a company like ours decides to set up in a place, the thing that interests us is having an innovative ecosystem around us, because that benefits us all. Barcelona continues to be a key benchmark, thanks to its attraction as a city and the people living there. It has talent who want to innovate. It has technology. All it needs is to raise its ambition for where it wants to go’. In conclusion: **‘If Barcelona were an industrial plant it would have the best land’.**

Having lived in Singapore, Sanmartin adds an example of a big city that has established and achieved its purpose: **‘Singapore is a city managed**

with a clear goal. The city is really like a big company. It has had several purposes, over many years, and when China wasn't open, it was Asia's economic centre. It then had to re-define itself and it has become a health and technology centre for Asia. This is something they're very clear about and working for. And that's the big difference. Singapore has this purpose and Barcelona doesn't'.

Another example. This time, about California, 'which is the excellence of all the big companies. It's their good luck to be a perfect site, where there's plenty of capital and a large number of enterprises, and what they want is to continue being what they are, to prevent the centre of the technological world from escaping them'.

Which city should Barcelona look up to?

'It doesn't need to look up to any. It's got to define itself according to what it wants to be. The city needs to see what it's got. And it's got talent, innovation, infrastructures... What the others are doing can be benchmarks but each has to analyse its own capacities. We can't be a Silicon Valley because, in the first place, as we haven't got the number of technological enterprises that they have. We might have to choose a more specific sector, where work can be done remotely, which you can differentiate in your goals and I believe that the bio and health issue fit together well here. Now it's about ambition in the search for this purpose and where the public sector helps. It should put the infrastructure in place to be more attractive to investors and talent. All this is a chain'.

As for the public sector, 'it's the requisite travel companion, we cannot commit ourselves at this scale without the public sector', warns Sanmartín.

—If you've got talent you can generate new ideas, new enterprises, you've got more innovation and more work.

Another example in favour of the city and this generation of talent is the range of educational offers. 'We've got benchmark centres and, of course, education is key, but are they enough?', she wonders. 'One city that has changed at the university level is Amsterdam, as it decided it wanted to be the university of Europe. They do everything in English. It's very attractive when it comes to fees, because, despite being more expensive than a state university in Spain, it's accessible for enough people and has become the European benchmark centre in higher education'.

'¿Why didn't Barcelona do that before? First of all, you've got to have all the education in English for it to be an attractive offer to the whole world. Having a large range of good university offers has a strong appeal for talent and if you've got talent you've got the capacity to generate new things, new ideas, new enterprises, you've got more innovation, more work and so on'.

The change of paradigm that Guayente Sanmartín refers to, the move from technology and information era to purpose era was highlighted by the pandemic. 'The pandemic has made us reflect. I've got international statistics which say that 68% of general managers are reassessing the culture of their companies. 33% of employees would stoop going to work if they were force to go back every day. The world has changed, we have all

reflected and set out what I want to do more than ever. This is a big change. When someone explains our era with historical perspective, they will be talking about the pre-pandemic and post-pandemic periods, as plenty of things will have changed’.

Climate crises, shared responsibility

This change of paradigms is imposing, or ought to impose, a cross-cutting and key factor, and is the active initiative for tackling the problem of the environment and reacting to the climate emergency. ‘Companies need to rethink what they want to do, just as we, the people, have been doing; there needs to be serious thought about how to be sustainable, how to focus this innovation in this field’.

‘Awareness of sustainability is essential and has several cornerstones. One of our founders said that: “The best of society is not the work of a few but rather the responsibility that we all share”. I think that as companies we are all responsible for bringing about a better society and taking into account that the world is changing, and that the climate issue is a problem for society’.

—The transformation has to be tackled through energy, not rejection.

Every study highlights the capacity of resilience and recovery that the Barcelona brand has. The city that almost everyone has visited or wants to visit. The Mediterranean and welcoming city, with an enviable architectural, cultural and food heritage. ‘Barcelona is happy but we’ve got to develop faster, keep on innovating. The future of the planet, work, health and education are sectors where we can

do a lot of things. We should now be hurrying along’, Sanmartin warns.

In a parallelism between company and city, she explains that ‘each crisis at HP is set out as a big opportunity for transformation, development and change... Barcelona ought to do the same. The pandemic was a great opportunity for HP, to see how we think about the products we deliver to get the people to be able to work efficiently wherever they are. This transformation has been very hard, but it has to be tackled through energy, not rejection’.

‘The infrastructures that Barcelona has relating to research and the introduction of new enterprises need to be relevant for the city; they have to grow more, there shouldn’t be a low percentage working in innovation, there’s got to be a lot more. It needs to scale things up. We need enterprises with one or two thousand employees connected to innovation. And how are we helping to scale things up? With support from the public sector and facilitating capital’.

URBAN SPACE IN TRANSFORMATION

A woman wearing a blue hoodie, black shorts, white sneakers, and a face mask is walking a brown and white speckled dog on a leash along a paved path. She is carrying a white tote bag with blue polka dots. In the background, a large, modern, conical skyscraper with a glass facade stands prominently. Several construction cranes are visible, indicating ongoing development. The scene is set in a park-like area with green grass and trees under a blue sky with light clouds.

MARIA
TSAVACHIDIS
HILA OREN

Smart mobility

—Maria Tsavachidis

If there is one thing that can and does determine people's quality of life, access to services or economic productivity, it is mobility. Therein lies both the problem and the solution. Ensuring that urban mobility is an effective and efficient system is one of the main and most ambitious goals that all cities, without exception, are currently facing.

'We have built cities for cars. This is true in Barcelona and all over the world, perhaps with a handful of exceptions in northern Europe, in the Netherlands. But generally speaking, this is the pattern, and now the challenge is to figure out how we can change cities to lower pollution and fit within the levels set by the European Union, what we can do to become more sustainable. We have to find solutions and act,' warns Maria Tsavachidis, CEO of the European Institute of Innovation and Technology (EIT) Urban Mobility.

Tsavachidis has no doubts that the significance and importance of mobility systems in cities means that the changes cannot be made in four years. 'You have to take it step by step. But we have to begin now. Barcelona is going in the right direction,' she asserts. Superblocks, the redesign of the urban landscape, changes in uses of roads like Diagonal and Meridiana and reinforcement of the public transport system are just some of the factors that this expert in mobility and urban space will analyse.

With a PhD in Traffic Engineering from the Technical University of Munich (TUM), Tsavachidis was in charge of Innovation at Siemens, where she worked for more than 20 years, before taking over the leadership of the EIT Urban Mobility. She has lived in Barcelona since late 2018, when the European Union chose the candidacy spearheaded by the city—along with 12 other cities, 17 companies and 18 universities in 15 countries, primarily Germany and Holland—to become the venue of this Institute of Innovation and Technology. The goal is to seek solutions to mobility in cities and find new uses for urban spaces in order to ensure the accessibility, sustainability and efficiency of transport systems. It is an international public-private platform. At the time, it was the first European initiative that joined the three branches of knowledge—enterprise, education and research—with cities.

With an initial budget of 400 million euros from the European Union (plus contributions from private partners), the founding objective of the EIT Urban Mobility for 2026 was to enlist the support of 180 start-ups, to free up space used for vehicles in 90% of the cities participating in the initiative, to launch 125 new products and to increase shared mobility. The Barcelona hub has four sub-sites—in Copenhagen, Munich, Prague and Helmond—where the other research hubs are located.

Micromobility

‘Barcelona is a very open, very cosmopolitan city that combines tradition and modernity. It’s quite unique. You hear Catalan and many languages from lots of people from elsewhere who live in the city. It has both the sea and beaches. It is a young, vibrant, dynamic city that is open to the world... Things are moving, there are changes and innovation... Not everything is perfect, but things are moving’, Maria Tsavachidis says. She came from Munich four years ago, and during this period,

with the pandemic in the middle, she pointed out micromobility in the city and the rise of electric scooters and bicycles as clear, tangible changes during this period. ‘Now we have a mix of different transport modalities within the same space’.

One image that captures this interpretation, for example, is Avenida Diagonal, where trams, buses, cars, bicycles and scooters all circulate, with pedestrians walking alongside them. This image has changed in just a few years with more space set aside for vehicles other than cars. And while we are on this subject, bicycles deserve special attention: Although they are not new vehicles, they have gained a revolutionary feel due to the changes that their massive use has brought about, not just to the benefit of city air quality but also in city mobility systems and, consequently, users’ habits.

—We have to reduce the use of the car and encourage cycling.

Are bicycles revolutionary? ‘It depends on how you define revolutionary... They aren’t new artefacts, they’ve always been here... But it’s true that their impact has changed. In the past, bicycles were for people who couldn’t afford a car or had no licence; also for children. And this has totally changed. The main reasons more people are riding bicycles is to lower emissions, lower pollution, lower noise... Actually, that is the revolution. And now the important thing is to think about how we can get more people to commute by bicycle. We have to encourage them to leave their cars and make riding a bicycle cooler. The bicycle you ride also says something about you. Riding a bicycle is positive. If you ride one, you’re showing that you’re interested in the climate, pollution, health, your neighbours...’

The length of cycling infrastructure in Barcelona has doubled since 2015 to the 240 kilometres that make up the network today. The goal is to finish 2023 with 272.6 kilometres. According to figures from the City Council, every day 22,000 commutes are made on bicycles or personal mobility vehicles (PMVs), 11% more than last year and 23% more than prior to the pandemic. There is no doubt that the public space is changing. It has changed. So what about public transport?

‘There have also been lots of changes in public transport, and they have been positive compared to the changes in other cities. For example, the frequency of the underground has improved, but there is one aspect which needs a lot more work, and that’s accessibility. You almost always have to go up and down stairs to catch a train. We have to look at things from the standpoint of people with some kind of impediment and acknowledge that there has not been enough progress in accessibility. These actions aren’t easy to undertake because infrastructures have to be changed. Ultimately, we’ve seen more changes on the surface than underground,’ Tsavachidis admits.

Accessibility and the gender gap is another aspect that the EIT Urban Mobility has addressed: ‘Cities should be aware of this factor; women are still the ones who tend to care for children and elderly people. We really have to bear in mind that women use more public transport and suffer more from inaccessibility; if we adapt transport better to them, it will mean that it is better adapted to the entire population. We can fix many people’s accessibility problems by being aware of the problems that women have.’

Superblocks

The director of the EIT Urban Mobility has no doubts about the value of the superblocks. ‘In that regard, Barcelona is doing a great job; they are an example

of how to organise the public space using a holistic system. Urban planning has to design how we situate spaces, what green areas we create in cities, what needs elderly people and children have and how we make spaces available for them. Plus, it has to bear in mind how to maintain good accessibility for those who cannot walk or ride a bicycle.’ This mobility expert claims that with these comprehensive plans, ‘Barcelona is not only keeping cars out of the superblocks but also making very sure that there are bus connections, that public transport is frequent, that new lines and circular routes are created... You have to create alternative mobility options.’

‘It is not just a question of issuing bans,’ she insists, but also giving people options. ‘This is why Barcelona is one of the leaders in the transformation of cities. Paris is another example. We cannot say that the mobility in Paris is perfect, but you can see where it’s headed in the future; the concept of fifteen-minute cities is being discussed. These models have to be established and then scaled up to the entire city.’

—Barcelona is one of the leaders in the transformation of cities. Paris is another example.

Will we see cities without cars? ‘Of course! We’ve already seen how cities are keeping cars out of their historical centres, and this is only going to continue to rise. The issue is being able to provide citizens with alternatives. Time is needed to sketch out and launch these alternatives from public transport to on-demand transport. But they should be real alternatives: not having to wait 20 minutes to catch a bus but wherever you are having the ability to phone a taxi, which is also part of the public transport

system network, and for it to be affordable. Smaller cities are already working on this, and I do think we'll see it in larger cities and that we'll see cities without cars. How can we be one of the 100 cities chosen by the European Commission as a smart and climate-neutral city by 2030 if our mobility is still based on cars? This won't be possible unless we wait until 2050, when all cars will be electric, but that won't happen for another 30 years, so until 2030 we have to look for formulas so that there are fewer cars in cities and more public transport, bicycles and people walking. Barcelona is doing it.'

—People come from all over to see what the superblocks are and how they work

In April 2022, the European Commission chose 100 cities from 400 candidates to participate in the mission '100 climate-neutral and smart cities by 2030'. Barcelona was one of them (along with Madrid, Seville, Valencia, Valladolid, Vitoria and Zaragoza). The goal of the mission is for these 100 cities to turn into experimentation and innovation hubs so that all European cities can achieve this goal by 2050. In short, it is both recognition and an impetus to the city's commitment to combat climate change with the implementation of policies like the Climate Plan, the Climate Emergency Declaration and the adaptation of the 2030 Agenda.

New models

'We've been talking about superblocks for four years now; people from all over the world are coming to Barcelona to see what they are, how they work... In my city, Munich, a superblock is being built in a central neighbourhood. Obviously it won't be the same as the superblocks in Barcelona because each city has its own structure and unique features, and

Munich doesn't have an Eixample. However, that doesn't matter. What does matter is the concept and the goal. The principle of designing public space to be more inclusive: that's the principle other cities are noticing and adopting. Superblocks are setting the model of the future, of how we want to live in a city and what a city should be like. They are a reference point.'

Maria Tsavachidis is convinced that 'we've gone too far' to turn back now and dismantle the superblocks. 'We're at a point of no return. Despite the criticism they may spark, there was a vision here and not only was it thought about but, more importantly, it actually materialised. It can be done in many ways, but it has been done and in that regard Barcelona has done well; it has been capable of showing what we wanted, it has been done and we are experiencing the benefits in that pollution is lower, businesses are working better, they have more customers...'

One of the side effects attributed to superblocks is the overcrowded streets around them. The solution for one neighbourhood may become a problem for a resident of a nearby neighbourhood who has to commute. 'We have to forget about cars. We have to look for and offer alternatives.' Mobility is the main challenge, this expert claims, because the carbon emissions that have dropped in other sectors have not declined in mobility. 'It's a very complex issue, and actually we can't really point to any city that's doing everything right. Each city is different, but I think that Barcelona is leading the way in both vision and materialisation. Political leadership is crucial.'

Decontamination rates

A study by the EIT Urban Mobility on different sustainable transport measures to improve mobility addressed one of the most controversial measures: the congestion charge. 'We looked at the impact

on lowering negative elements while creating an economic interest. Each measure you take has a cost for both the city and taxpayers. Sometimes we only look at the cost, especially when dealing with mobility, but we don't look at the benefits as much, and they should prevail more, from an economic perspective as well. If a measure is good for the environment, it should be good for the economy.'

Just like many other cities, despite the warnings, studies and measures already being applied, Barcelona is still exceeding the emission caps set by the European Union. 'This has to be the top-priority objective. We have to see where people live and who is the most exposed to pollution, and we have to get rid of cars because if we don't it's going to be very hard to lower these indicators.' The other major challenge is how to articulate mobility between the city and its metropolitan area.

—In the area of influence of the big cities, the railway service must be improved.

'This requires better public transport, especially trains, a service that has to improve. The complication here, which all metropolitan areas are facing, is that there are different levels of responsibility. The City Council primarily has authority over traffic, but other administrations have more powers, like the Provincial Council, the Catalan Government, the Spanish State... And if we still have people coming to the city by car, we'll have to find ways so they can park somewhere and continue their commute on public transport. What works? Again, good train connections. And here, in my opinion and from my perspective, I believe there is a great deal of dialogue. It is a very complex issue that can only be solved with very strong cooperation.'

Recapitulating goals and challenges regarding Barcelona's mobility by 2030, Tsavachidis sets the following priorities: First, to lower emissions. Secondly, to find a way to improve the commutes of citizens coming from outside the city, which entails more and better public transport. Third, accessibility to transport. Another goal is data management. 'That is another of the main areas where there is room for innovation', says the director of Urban Mobility. 'With this information you can improve the connections between the different types of transport, optimise frequencies, lower waiting times... We need those data. We have to implement policies to collect them and generate information so that citizens can move around better.' Another challenge for 2030 is to 'scale up the superblocks. Extend them. Make them grow.' And then she adds another reflection: 'If the superblocks are extended, Barcelona will be an even better city in 2030, but the worrisome thing is what we can do to slow down tourism. This issue has to be addressed.'

Can tourism be sustainable? 'I don't know... Tourism in itself creates a lot of mobility. Transport, people flying to Barcelona from all over the world. That isn't sustainable in terms of what we want to achieve with the mission "100 climate-neutral and smart cities by 2030". But saying that we have to lower tourism... How? Things have been tried, taxes for cruise liners, regulations of tourist flats... I don't know how to solve it, but it's an issue that needs to be addressed.'

In the first edition of the REACT workshops, held remotely practically in the midst of a global lockdown, there was a lot of talk about how the pandemic would change people, change cities, change everything. Now that we are back to normal, Tsavachidis claims that even if a lot of things have gone back to the way they were three years ago, 'people's awareness has changed. We've seen that things can be different, and that they can be better, too. We've seen what it means to live in a city without cars. We've all

experienced those changes. The air was better quality, cities smelled better, you could hear the birds... We've seen the benefits of carless cities. And now that we're back to normal, mobility has changed and the perception of the changes has changed, too. If new rules are enacted, if cars are banned in a given zone... I think that now people would accept it better, and that's really important. Rules are accepted better, so implementing new measures and regulations is easier.'

Meeting point —Hila Oren

Following the same theme and now in the post-Covid world, Hila Oren, an expert in marketing and branding who specialises in public spaces, and also the founder and general manager of Tel Aviv Global, a municipal entity that aims to position the city in the world and in the digital age, elaborates on the change in the perception of public spaces and their potential to become true meeting points. 'We have to take a leap forward in our vision and management of communal urban spaces if we really want to be an innovative city, and that's the key: these types of spaces and their objectives have to be expanded. We have to make them functional, equip them with Wi-Fi and outdoor furniture that is truly adapted to the climate and needs, so they allow people to work, gather, feel comfortable and safe... We have to promote outdoor activities in cities, especially in a Mediterranean city like Barcelona,' says Oren.

The thesis of this expert in entrepreneurship and smart cities has gained more momentum following the pandemic. 'One of the obvious consequences in all cities around the world is loneliness. People feel much more alone. That's worrying. More alone and older. How much money are we spending privately and publicly on doctors and drugs? Well-designed public spaces can be part of the solution, one way of combating loneliness, gathering together, articulating ourselves as a city... That is the important thing now and what cities should address by seeking smart solutions.'

—Well-designed public spaces can be part of the solution.

The Tel Aviv Global platform-app, spearheaded by the municipal government in 2011 with Hila Oren at the helm, provides personalised, specific information and services to citizens according to their location and interests. It also allows citizens to participate directly in government plans, such as municipal budgets. The goal was to create a direct connection between the city and its residents, while also offering alert services when there are public works in the neighbourhood, or discounts, deals or personalised information, for example. Its launch and the city's goal of positioning itself as a global Start-up City translated into opening the municipal database to the public and providing free Wi-Fi coverage throughout the entire city, even on the beach.

Tel Aviv took first prize at the Smart City Expo in 2014, with this platform as its main claim to fame. This was the same conference, although one year earlier, which led Hila Oren to visit Barcelona for the first time. 'I thought about it at first. I wasn't sure whether or not to go. I had a lot of work, and at that time the Smart City Expo wasn't as well-positioned

internationally. Frankly I wasn't sure it was going to be very useful to us... but I was wrong, very wrong!'

What Hila Oren found at the Smart City Expo changed her perception of the event and allowed her to discover Barcelona. 'It was very special, really brilliant. There were experts from all over the world and I really felt that it was the place to be, where ideas were exchanged and trends in innovation were detected.'

Walking around the city

'I walked around the Gothic Quarter and port quite a bit... I think Barcelona is a very special city because it's both Mediterranean and very European. The dining options are incredible. You can eat anything, get anything, enjoy its architecture, art, fashion, design... this whole combination is incredible. Plus, it's an open, welcoming city. Its prices are really affordable for people from elsewhere and it's very accessible. You arrive at the airport, are out in 15 minutes, find a taxi at the doorway, are in the city in 20 minutes, the hotels are good... Naturally, there is room for improvement, but the sense is that it's a welcoming yet professional city. It is a 'unique' combination.' And she adds to all that another factor that is absolutely strategic: the city's location, 'in the middle of the globe, accessible to everyone, for those coming from the States or Asia. In short, Barcelona is a strategic meeting point. It's a meeting point both intellectually and physically.'

Hila Oren was so impressed that Barcelona and Tel Aviv forged alliances. At the next edition, her city won the Expo Best Smart City Award. 'This recognition gave us extra added value, everyone learned about us. People from many countries began to visit us. Part of my work was to position Tel Aviv, and that really helped us to

situate ourselves as a global smart city. It drove us to meet expectations and improve, to keep moving forward. Delegations from other cities began to arrive to see what we were doing, and delegations from Barcelona also started to come.

Global Barcelona

'Barcelona is a global city, even though it doesn't consider itself one. What do I mean? I mean that there is always tension between Barcelona and Madrid, but Barcelona also looks to Paris, London and New York. Barcelona is a global city because it's a place where ideas are exchanged. One clear example is the Mobile World Congress. Fira Barcelona plays a crucial, leading role as a driver of this exchange of ideas. When this happens, taxi drivers have to serve people from all over the world and improve their language skills. Everyone has to change. If we look at Barcelona's rankings in 2010 and 2023, it has improved globally. I have no doubt about it. Now more people are investing in Barcelona.'

A self-declared fan of Barcelona and its beaches, Oren is totally in favour of holding more outdoor events. Hence her proposal to 'modernise' its squares and public spaces. She advocates better connections between the port and beaches, which she believes have the potential to be used more, and the city and its citizens. 'If I were Fira Barcelona, I'd hold an event at the port. Not everything happens in buildings.'

—Barcelona is a global city because it is a place where ideas are exchanged.

Connections

Events like the America's Cup, which will be held in the autumn of 2024, are heading in that direction. 'But you have to be careful with this type of event, because the main events are not going to happen on the beach but at sea, and there have to be connections between spaces. If you really want to ensure the success of this event, many more screens have to be installed on land so people can see what's happening at sea. If there is a connection between sea, beach and people, it's going to be a great event. If not, it's not going to have repercussions in the city.'

Regarding the America's Cup, Fira Barcelona, screens, technology, dissemination and connections... The last successful edition of Integrated Systems Europe (ISE) brought the possibilities that this nautical event offers the city into clear focus, as well as the challenges of broadcasting it. It is one example of how using state-of-the-art technology opens the door to a range of possibilities that Barcelona is getting ready to seize. At all levels. The head of TV production of the event, Stephen Nuttall, was one of the prominent names featured at this year's ISE.

The experts in sports broadcasting maintain that tracking maritime competitions is among the most complex technical challenges because the sea is a constantly changing surface without physical boundaries, totally unlike a football pitch, a theatre or a Formula 1 racetrack. The television coverage will be unprecedented. State-of-the-art cameras will be used on board helicopters and on the ships' masts, along with waterproof microphones. It will be a production the like of which the city has never seen before with the goal of ensuring that the races at sea can be watched on screens or mobile devices.

To extend coverage beyond Barcelona, there are plans for 55 TV stations to carry the signal to 190 different countries. The organisers of the America's

Cup predict a ‘substantial increase’ in the 942 million viewers confirmed by Nielsen in the last edition held in Auckland, New Zealand. A bigger focus on social media, with specially created content, will be a key way of growing these figures and attracting a younger audience. In short, there is an array of opportunities that are already being hatched in the city.

—The goal isn’t to be a smart city but to go further: to set goals and achieve them.

‘Smart solutions, audiovisual culture, technology and data are great if you know how to use them. They are tools, not goals in themselves. It’s not about what tools you have or what tools you use; it’s about knowing what you want to achieve and whether you can achieve it via technology, mobile devices or whatever it may be. The goal isn’t to be a smart city but to go further: to set goals and achieve them, and technology is part of this strategy,’ stresses Hila Oren. So, for this expert in city branding and positioning, what areas and what type of economy should Barcelona promote?

‘Any type of lifestyle-related business. People all over the world have more and more time and are increasingly interested in their well-being, and this is an incredible aegis. Architecture, art, fashion... If you ask anyone in the world what comes to mind when they think about Barcelona, it’s that. Why invent a new goal? You have to look at the city’s strengths and work from there.’

Hila Oren sketches a map of strengths. Once again she refers to Barcelona as an open city, along with its architecture, art, food... ‘People from all over the world want to visit the city!’ she stresses.

‘Technology should be used to position Barcelona

more strongly in this industry of art, design, food, fashion... You have to make an in-depth analysis of what the city is good at, clearly identify Barcelona’s USP, its unique selling point, and adjust the city to it. Universities? Biomedicine? I don’t know, maybe those, too. If those strong points with added value are identified, go ahead with them! But what’s clear is that Barcelona is a famous city known all over the world, and you have to take advantage of that. And another thing, Barcelona is very business-oriented; even if those businesses are not innovative, the tools should be innovative.’

This dynamic, open Barcelona with a resilient brand that is known around the world and has the power to bring a smile to people’s faces around the world... What should the city focus on? ‘I would say a city like Liverpool, for example... Barcelona is good at sports, art, music... Like Liverpool, which isn’t London, it’s not a capital city, but it attracts a lot of business and investment. I mean that you have to look at the model. We all look at cities like London and Copenhagen. But Barcelona is already really strong. I don’t want Barcelona to be stronger but to remain what it is. It should be sure that businesses and industry are strengthened and they work well. And this also includes tourism. I think that a certain type of tourism related to the city’s strengths gives Barcelona added value. Visitors interested in architecture, design, food... and willing to pay for them.’

—Smart means addressing citizens’ loneliness and providing strategies to manage the climate emergency.

Barcelona has consolidated the Smart City Expo as a meeting point for cities all over the world. It is a place where new urban scenarios, new business models and new technology are showcased. It is a place where the very concept of 'smart' has evolved and adapted. 'Smart means addressing citizens' loneliness and providing strategies to manage the climate emergency', notes Hila Oren. 'Cities should have more trees and seek ways for citizen to get out of their homes at night if it's hot, and this may mean installing cameras to ensure safety'. 'What's clear is that the public space should be available 24 hours a day. We have to consider climate change. Each generation has its challenges, and now it's climate and mobility... and public space is where we all meet and find solutions together. This is my obsession now. My goal. These are now the new challenges of smart cities. Reclaiming and rethinking public spaces.'

SUSTAINABILITY AND ECONOMY



RÉMI PARMENTIER
VÍCTOR VIÑUALES

The necessary change

—Víctor Viñuales

“We know a lot, we do little. This is the drama of our time”, says sociologist Víctor Viñuales. A specialist in the areas of sustainability, human development and international cooperation, Viñuales is the co-founder and director of the Ecología y Desarrollo Foundation (ECODES), which was set up in 1992. His vision of the world and vital approach can be read in ‘Caja de herramientas para los constructores del cambio’ [A tool kit for builders of change], a powerful and constructive decalogue that encourages collective action and highlights the importance of people for making a difference. ‘We need dream builders’, he says.

His ‘tool kit’ focuses on the problems of water in the world. It is for good reason that the Intergovernmental Panel on Climate Change (IPCC) is meeting up, above all, to discuss water: more droughts, more flooding, more coastal areas threatened by the rising sea level, accelerated disappearance of glaciers... And as a consequence, existing balances are ending more and more frequently. Far from being a

description or enumeration of problems relating to water and its scarcity, the document offers reflections, ideas and encouragement to those working on and dedicating their time to getting things to change.

—There’s an eagerness in Barcelona to be connected to the new, the pioneering and the innovative.

Let’s start with Barcelona: ‘A city is its residents and Barcelona and its people have been a source of inspiration and innovation for me. One feature that Barcelona has always had is watching the world. Other areas have been closed off, self-absorbed... but there has always been an eagerness in Barcelona to see what’s going on and interact with those it would describe as “improvers” of the world’.

‘I’ve always had very good relations, connections and involvement with the city, not just with its civil society but also with its authorities. Very often there are people in other public authorities who are rather more old-fashioned; however, apart from a few exceptions, there is an eagerness in Barcelona to connect to the new and the pioneering’.

Viñuales adds that Barcelona has been able to keep this open, cosmopolitan and inquisitive nature through the years ‘as it’s in its DNA. Whether or not we realise it, there’s a certain DNA in countries, regions, cities and professions... There’s a certain DNA when you see the Hospital de Sant Pau... It represented a big opening to innovation in its day. It was designed as a hospital should be and it was built with the ambition of being one of the best in the world. This ambition of looking outwards and relating to the best things going on has been a constant’.

The common agenda

Such structural DNA detected by Viñuales in cities and communities coexists with a common agenda relating to the entire planet: climate change. ‘After last summer, it was said that Barcelona, Madrid and, I believe, Valencia and Zaragoza were among the ten European cities worst hit by climate change, above all in summer’.

The truth is that the average temperature between 1 June and 31 August 2022 was 24 degrees, 2.2 degrees above the average, compared to the 1810-2010 period. And after a summer packed with heat waves and an autumn with the warmest October in history, the climate records already confirm the peninsula’s subtropicalisation.

Increasingly extreme temperatures are being recorded, high and low. The data from the Spanish Meteorological Agency (Aemet) show that 2022 was the historical series’ warmest year. And between 1 September 2021 and 30 October 2022, the amount of precipitation was 26% less than during the reference period. February saw 80% less rainfall than normal; May, 65% less; and October, around 35% less.

The Barcelona Fabra Observatory, which is located on the Collserola mountain range, 411 metres above sea level, recorded the highest temperature ever, during a period of two days in December, since it began operating 109 years ago. A high of 21.7 degrees was reached on 24 December and another of 22.1 degrees on 25 December, above the maximum temperatures recorded for that month up to then, having been 20.6 degrees on 16 December 2015 and 20.4 degrees on 30 December 2021. The lowest temperature on the night of 25-26 December was 15.9 degrees, setting a new record, almost a degree above the previous record of 15 December 1989.

‘I believe that millions of people in the world have opened their eyes since this summer, and while there used to be a certain encapsulation of

awareness, in other words, while until not long ago only a small fraction of society was aware of what this climate change was going to bring, suddenly 90% or more of society experienced—and reading is not the same as experiencing—various things in person’, reflects Viñuales.

In the first place, that sociologist insists that cities are not made for such inhuman temperatures. City residents have noticed there are no trees in their streets and that whenever temperatures rise, they feel better being in streets that do have trees.

They also noticed their homes are not adapted to these temperatures either. **‘London isn’t prepared either and all of a sudden, when studies were saying that temperatures may go as high as 40 degrees in the 2040s or 2050s and was already reaching them in 2022, people began to suggest things, such as the need for painting bus roofs white as they have no air-conditioning. We’ve got to adapt and fast’**, he concludes.

‘Any city should now be at the rethinking, redesigning and redoing stage. We’ll have to remove asphalt, walk along paths and think about how we’re going to do the fifth façade, as a friend of Barcelona calls it... What’s happening with the roofs? A city by the sea is not the same thing as a city far removed from it, but the challenge of climate change affects us all’.

The specific warming occurring in cities, called urban heat island, is taking a high toll. A report published in *The Lancet* and led by the Barcelona Institute of Global Health (ISGlobal) mentions the detection of an additional urban heat of 1.5°C (with inter-city fluctuations). According to the report, 4.3% of the total summer mortality and 1.8% of the total year mortality could have been prevented by increasing tree cover to 30% of the urban space, thereby causing a reduction in temperatures.

Concern and work

Tackling climate change is a priority. ‘I believe we’ve gained a lot in concern but still have a lot to gain in work...’, warns Viñuales, ‘concern would be when, sitting in a rocking chair, you move a good deal but without changing place. You don’t change. It’s what we do that changes us. What you do and what I do. Concerns do not change us. You can think a lot about something and turn it over in your head... but it doesn’t change us’.

Work requires previous concern. Viñuales says that when he was in the Barcelona airport on the way to the climate summit in Egypt last November, the check-in officer guessed he was going to that event and asked him to get something done, as she had two daughters and something had to be done.

‘There’s a concern for our children’s future... this has grown and we’ve started to see the multi-dimensional nature of climate change. We’ve suddenly seen deaths from heat waves. Heat kills! And the abnormal extent of deaths this summer has been quantified. We now realise that climate change is not the same for everyone and that its effects on people differ according to whether or not their home is adapted and insulated’, he reflects.

Taking notice

‘Maybe someone is trying to sleep when their bedroom temperature is 30 degrees, so they can’t sleep... We now realise that sleeping is essential for our immune systems to function. We now realise that there are people with timetables and work out in the sun and things can’t be done at these temperatures. And that the hot season is now starting earlier and schools are not adapted... what are we to do? We’ve been going around in circles. We can find a way out along a path that lets us adapt but such an adaptation can worsen the problem at the same time’.

That is why city residents who had been resisting are now deciding to install air-conditioning in every room instead of opting for other measures, such as changing windows... **‘Climate change is affecting every one of us at every level. These temperatures are also too harsh for tomatoes, for crops... We’ve got to act at many levels and with great urgency. This is what cities need to work on. I believe that BCN can be a pioneer. In fact, initiatives in progress such as superblocks can offer a perfect path towards refreshing city climates’.**

This is the scenario of challenge, change and urban transformations behind the EU programme for having smart and climate-neutral cities by 2030, made up by a hundred cities, including Barcelona, Madrid, Seville, Valencia, Valladolid, Vitoria-Gasteiz and Zaragoza. **‘Their direct emissions, buildings and public transport alike represent 15% of emissions... What is happening with dwellings, mobility, industries, bars, hospitals... We need to make a change, a transformation that speaks to the entire city’**, says Viñuales, who believes cities will be unable to achieve their goal of being climate neutral unless they apply a principle of co-responsibility, which falls to everyone. Like a group of friends sharing the restaurant bill. In other words, how can we afford such a high bill?

Co-responsibility

‘Every city resident has to bear their share of the bill. Just as the city would be clean if everyone swept their part of pavement. This is about knowing which part of pavement each of us is responsible for... It is this general sense of co-responsibility that has to be created in the city. There will naturally be problems and mix-ups later on, when these measures are applied... Allow me to give an example: the perfect pencil tip is the one that’s never been used. Once you start writing, the pencil tip warps. That’s because we’re imperfect, but something has to be done’.

‘Things are really transformed when we act and make corrections. That’s how Apollo reached the moon. The trajectory was wrong 95% of the time. They kept on correcting things until they got to the moon. The important thing is to act. It’s happened with the pedestrianisation of numerous streets. People complain a lot about the first decisions, the construction projects. But then, when they’re done, everyone comments on how marvellous they are; it’s going well for everyone, for visitors, for retailers, who are selling more... It’s got to be assumed too that transitions are difficult. When you decide you’re going to have a more active life, you might suffer a lot of stiffness in the first weeks... then it’s all good and well...’. What’s a classic system of trial and error for some may well be tactical urban planning for others.

The first pedestrianisation of a street in Barcelona occurred precisely fifty years ago. In 1973, the then Francoist mayor of the city, Enric Masó, declared a halt to traffic in the area bounded by the Rambla, Plaça Catalunya, C/ Fontanella, C/ Vila Laietana and C/ Ferran. In other words, the area of Portal de l’Àngel and its adjacent streets. The fact that the decision was of an ‘experimental nature’ and had operating times failed to protect it from an initial fierce opposition from the area’s over five hundred retailers. Only its tangible and quantifiable success among city residents packing the streets and the consequent increased turnover in shops calmed down tempers. Five decades on since the decision, which was later extended to other areas and cities, and the debate is now about superblocks and green hubs.

Shared and multi-player leadership

As with so many other initially unpopular measures and decisions—all movements involve more or less uncomfortable, questionable and avoidable chain reactions—establishing green hubs and extending pedestrianisation also require political

leadership. Viñuales introduces and sketches out another paradigm: ‘Mere political leadership is very exposed to the pressures of electoral short-termism... I believe that the leadership needs to be shared and multi-player’.

—We’re in an emergency situation requiring collective mobilisation.

‘We’ve got to build our collective dream together, involving not just the public authority, naturally, but also the economic, social and cultural players, who are the active citizens taking it up. You can’t delegate that dream as if politicians are going to deal with it. No. If only it was all simpler. If only’.

We’re not in a one-off crisis and things can’t be managed in a one-off way. ‘It’s an emergency situation, and such situations need this collective movement of volunteers. I believe that’s where we are right now. We’ve got to carry out this collective mobilisation of volunteers and avoid delegating. There have got to be, and it’s already happening, pioneers in climate action in any sector. This collective leadership in the business, social and educational sectors... what’s required for getting transformations done in cities’.

The two types of injustice

Are you optimistic? Do we have to wait for a generational change? ‘**We can’t afford to wait. Climate change involves two major, very serious types of injustice**’. One is intra-generational injustice and the other inter-generational. The first is suffered by people from the same generation who, because they were born in other parts of the world, are experiencing the consequences of a problem that they have practically no responsibility for. ‘**When there**

are more atmospheric catastrophes in Central America, for example, they are experiencing the consequences of a situation they did not create, because the number of emissions per person per day is 1.08 in Honduras, 16 in the USA and between six and seven in Spain’.

Inter-generational injustice. ‘This is another enormous injustice. Young people who have had hardly any say on decisions that had to be taken and who are suddenly going to suffer the worst harm, since we’ve robbed them of their future. It’s a little strong, the expression, but there are even people who say we’ve colonised the future’.

—Colonialism used to be taking away resources from other places and now we’re taking away resources from the future.

‘Colonialism then was about taking away resources from other parts of the world and today we’re taking away resources from the future, so people living in the future will be much poorer than they should. They’ve every reason in the world to be angry and tell us this is wrong. We can’t wait until that generation takes on positions of leadership. The problem is that today’s executives, the ones taking today’s decisions, have to act differently now. This entails a big challenge, and that’s because a big mental recycling is needed from today’s executives. When the topic of education comes up... Fine, but we don’t have a century to change’.

‘People were already saying at the Glasgow Summit that we had to half our gas emissions by 2030 and that date’s here, around the corner.

We're running out of time. We've got to extend responsibility to those of us getting old, because half of the greenhouse gases produced since the industrial revolution were emitted during the last thirty years, since 1992. The latest generation and, what's more, the one that largely already knew this, attested to it at the 1992 Rio de Janeiro Summit, despite which we've continued emitting gases'.

—We're not being good parents to the coming generation.

'Young people can justifiably ask, "what have you done?". It's true that city residents now are also enjoying the fruits of their ancestors' labours, for better or worse. We are building a new generation of the future, and we can be good or bad parents, but for now we're not being good'.

After the pandemic

During the pandemic, when the health emergency took precedence over the climate emergency, when half the world was shut away and practically no planes were flying, a lot of changes were being predicted. How has Covid-19 influenced our worldview? Has it led to structural changes?

'What's happening is that in three years, we've got the pandemic, the war in Ukraine, the increased price of energy, problems with fossil fuels, supply-chain interruptions... The image of the ship stuck in the Suez Canal... We've got several crises and they overlap. It's like when you're at the beach and you see one wave after another coming... We've seen this and in fact, if we think about it properly, what we've seen are more reasons now added to the ones from before'.

'For climate-related reasons, we were all aware that we had to take the necessary step towards renewable energies, but economic reasons have been added to the climate-related ones, as the last ten years have seen the price of renewable energy fall by a factor of ten. For economic reasons, it's perhaps better now to put up solar panels. We also discovered with the war—and Germany as well—that it's very unsafe to depend on energy from distant lands. It's no longer a question of prices... Supplying yourself by using your water or sunlight is much safer than hoping supply chains work out...'

—There can be no good human health on a sick planet.

'We've seen with the pandemic that the planet's health is actually our health, and that our health and the health of animals are interconnected. Because a large amount of the infections we have been catching have to do with zoonosis, the transfer of diseases from animals. The belief that there can be no good human health on a sick planet has become more widespread'.

Viñuales points out the One Health concept, recognised by the World Health Organization as an interdisciplinary movement to create collaboration between animal-, human- and environmental-health organisations working at the local, national and global level to bring about optimal health for people, animals and the environment. Calvin Schwabe, a veterinarian trained in public health, coined the term 'One Medicine' in a veterinary medicine text in 1964, to reflect the similarities between animal and human medicine and stress the importance of collaboration between veterinarians and physicians to help solve global health problems.

‘We need to integrate these three approaches, and I believe it’s true that the pandemic emergency caused delays in some things, but it’s also true that the course of change towards the green transition is more evident, to a lesser or greater extent.’

Viñuales cites a study on the biosphere and the weight of mammals in the world, which concludes that humans, their domestic animals and their cattle represent 96% of the weight of mammals and only 4% corresponds to the that of all the other mammals. ‘We’ve invaded and left no space, hence that powerful delivery from the United Nations’ Secretary-General: ‘We are waging a war of suicide against nature. It’s suicide because the more we win, the more we lose. We’re forgetting that we are nature’.

—Cities in themselves are fragile because they consume lots of resources but produce few.

Perhaps the future for cities is to stop growing, for the population to be redistributed... Or is it inevitable that cities keep on getting bigger and for their growth to be unstoppable? ‘My impression is that cities in themselves are fragile. If their supply chains were to be interrupted... How many days could Barcelona or Madrid remain independent? Two or three...?’

‘I believe that cities also need to think about resilience, about preventing crises. It would be irresponsible for city managers to think that things are going to be fine, that there’s not going to be any more crises, given that what we’re actually seeing is one crisis coming after another. Barcelona declared a water-shortage emergency this summer, as did Seville... The interlinking chain of problems is now more frequent and cities in

themselves are fragile because they consume lots of resources but produce few’.

More sovereignty

To take on this future with more crises and overlapping, ‘my suggestion for cities would be: look for ways to strengthen your sovereignty in basic things, as 90% dependency is not the same as 50% dependency. You’re dependent, you’re still dependent, but not to such an extent. We can do without lots of things, but not without energy, food or guaranteed water... When it comes to basics, cities ought to increase their capacity for energy, food and water sovereignty... by, for example, installing more cisterns for collecting rainwater... And another thing, [having] good relations with their region. It’s one thing being independent with good friends and another not having such friends. Good friends who can help you to have good relations with your environment, with the basin the water comes from.

—We’ve got to change scale and bring about and encourage faster changes.

As for whether Barcelona is properly focused on mobility, architecture or consumption aspects, ‘my impression’, as St Augustine used to say, ‘is that when I look at myself I’m a sinner and when I compare myself, I’m a saint. The answer, as regards the things that ought to be done, is no. We’re lagging behind. Barcelona is taking too long over what it ought to be. But it’s faring better than others, by comparison. Even so, we’re in a situation where we’ve got to change scale and bring about and encourage faster changes’.

For example, a comprehensive renovation of dwellings. ‘So far around 25,000 to 30,000 a year were being done. But there are 26 million dwellings in Spain. At that rate, we’d finish the renovations by the year 3,062... we’ll be a bit old. We need to find ways and short cuts to do things faster, to do them differently from how we’re used to doing them. Given the way public authorities operate, we’re doing them very slowly and we’ve got to pick up speed. Let’s imagine that this coming summer is as intense as the last. Well, of course, we’ll be rightly beating ourselves up and thinking, how could we have been so stupid not to have done anything since last year?’

More commitment, more action

To mark the European Clean Cities campaign and make the most of the start of the National Environmental Congress held in November 2022, ECODES, the organisation run by Víctor Viñuales, sent a letter to every regional community and the 149 most populated municipalities calling for involvement from the institutions closest to the people in the process of decarbonising transport and transforming mobility. Signed by 43 organisations committed to a fair transition, the missive informed of the decisive role of cities where, according to the UN Habitat, the UN body for housing and urban development, 60% of the world’s population will be living in 2030.

The organisation’s letter sets out seven requests whose degree of compliance attests to the involvement and work to be done in each city. The actions are as follows. In the first place, applying policies to reduce pollution and congestion such as access and traffic restrictions for polluting vehicles, either directly or by implementing measures such as Low or Zero Emissions Zones, Residential Priority Areas and Restricted Traffic Areas. Turning public transport into the cornerstone of mobility, with the aim of achieving a 100% electric and renewable system by 2030, and

acting and implementing measures to ensure safe and healthy school environments.

Opting for a cyclist infrastructure and bicycles as an eligible active mobility system for city residents for their regular travel, promoting and incentivising travel to schools and work is another of the initiatives being demanded. As well as returning spaces to pedestrians by extending continuous pedestrian routes and pedestrianisation, rearranging urban space and making urban environments and biodiversity compatible by greening up cities. And, finally, making a commitment to the pollution limit values of the World Health Organization (WHO) as the target to be reached for improving air quality over the coming decade.

Blue militancy

—Rémi Parmentier

The list is long and the challenges all the greater: Climate change. Marine biodiversity. Fisheries conservation. The Arctic and Antarctica. Maritime policy. Nuclear safety. Arms control. Toxic pollution. Clean production. Water management. Sustainable consumption. Governance and international trade... These are some of the issues that the Varda group has been working on.

Kelly Rigg, Elaine Lawrence and Rémi Parmentier decided to invest their extensive experience as activists in bringing about changes. In changing things for the sake of people and the planet. How? By designing and implementing projects and campaigns; by advising and analysing new scenarios, and by highlighting and reporting others. They devise alternatives. They opt for regenerating and driving positive changes. They've been doing this, with Varda, for twenty years. In Parmentier's case, he spent a further thirty or so years, in addition to the last two decades, in the international environmental movement.

He started off working with Friends of the Earth in France and later became one of the founders of Greenpeace International. He was a member of the crew and a campaign leader of the daring Rainbow Warrior's first journeys back in the 1970s and early 1980s and remained steadfast in this organisation up to 2002, when he left Greenpeace International's political leadership to set up Varda Group, where he continues to work today.

As a champion of the environment, Parmentier has worked with government leaders and ministers, scientists, activists and experts and has delved deeply into issues relating to sustainable development, environmental policy, public health and marine policy. In fact, he was one of the architects of the worldwide ban on industrial nuclear-waste dumping in the sea, in a campaign that he ran for fifteen years.

Parmentier was also one of the driving forces and ideologues behind the Global Ocean Commission, among other initiatives; as its secretary, he also coordinated the development of policies and the roadmap for reclaiming the ocean.

More recently, in 2017, he launched a campaign along with the NGO BLOOM, to demand accountability and action from the World Trade Organization on the elimination of harmful fishing waste. He has also been a member of Pedro Sánchez's Advisory Board for Ecological Transition since its creation in September 2017, as an independent expert.

—It's crucial the city wakes up and prepares itself for the expected impacts.

Parmentier came to Barcelona for the first time in the early 1980s. From that visit he remembers a city living with its back to the sea. **'Something that**

changed as a result of the 1992 Olympic Games', he says. Being a coast city, in his view, Barcelona has a mixture of opportunities and risks. **'It's crucial the city wakes up and prepares itself for the expected impacts to come from the rise in sea level caused by climate change'.**

'People are surely noticing the growing frequency of extreme weather phenomena, and that's just the start. I doubt the city's ready to adapt to what's coming, especially the rising sea level', he warns. He firmly believes that the thing we need to do for cities to improve is adapt to the impact of climate change and enable the transition and respective energy and environmental transformations. Is Barcelona advancing in the right direction?

—Young people are right to be angry because their future is mortgaged.

'I've got the impression that the city's looking for an exit door based on an out-of-date model from 1992, but I don't know if it will find that exit door. People born in 1992 are now 31; that's the generation that needs to find the key to the exit door. By the way, 1992 was also the year of the Rio de Janeiro Earth Summit, when the UN Conventions on climate change and biological diversity were signed. The promises that were made then to future generations, that is, to the 1992 generation firstly, have been broken, and that generation and the following one, the "Greta generation", have every right in the world to be very angry because their future is mortgaged'.

Sky and sea

Instead of focusing on another city to improve, Parmentier maintains that Barcelona, as with the world's other big cities, will need to pay attention **‘to the sky and the sea: both reflect and determine the state of the environment and climate’**.

One of Barcelona's options is to consolidate itself as a blue-economy benchmark in the Mediterranean. Boasting 16.67 km of coastline, the city is looking to this economy linked to water and the sea as one of its levers for growth, connected to job creation based on training and innovation. There are plenty of arguments favouring the port as one of the driving forces and generators of activity. This blue-economy network includes sea-linked research and educational centres through organisations, such as the Institut de Ciències del Mar (ICM-CSIC) and the Faculty of Nautical Studies at the Universitat Politècnica de Catalunya (UPC), and spaces for doing sport and nautical activities in the beach area and in the city's public and private clubs, such as the Municipal Sailing Centre, the Navegació Oceànica Barcelona Foundation and the currently transforming Olympic Port and Nova Bocana.

Parmentier gives his blessing to that option but insists on one condition: **‘The blue economy has to be environmentally and socially responsible and sustainable, be transformational and offer specific positive results. And it must not be done behind city residents' backs. This is what the UN Secretary-General Antonio Guterres recently said: “Zero tolerance towards greenwashing”’**.

And he adds: **‘Zero tolerance towards bluewashing, which is the same but in the ocean context and what is known as the blue economy’**. The third UN Ocean Conference will be held in Nice, on the French Côte d'Azur, in 2025. Rémi Parmentier has accepted the task commissioned by the French president's office **‘to facilitate civil society's**

contributions to the meeting, because this needs to be a transformational event; those who have maintained and lived off the usual rumours are going to be irrelevant’, he asserts.

The second UN Ocean Conference, held last year in Lisbon, saw him present a proposal for protection to be the rule and not the exception, with a mechanism based on reversing the burden of proof. A commitment was adopted a few months later, in December of last year, during the UN Biodiversity Conference (COP15) in Montreal, to protect 30% of the surface of the earth and the oceans globally before 2030. A major breakthrough. **‘Which is all very well, but what concerns me is the remaining 70%’**, he asserts.

As for Barcelona's future and the type of businesses that the city ought to be promoting, Parmentier warns of the economic and environmental vulnerability that excessive dependence on tourism represents, **‘as we saw during the pandemic. We've got to develop new models’**.

‘Twelve years ago at the REACT conference, when Barcelona asked me for reflections and recommendations on the blue economy, I suggested the Port should get ready for receiving the boats and ships of the future propelled by hydrogen and wind-powered motors. The response, however, was that they'd rather commit to Natural Liquid Gas (NLG). But now that Maersk, the world's biggest shipping company, has committed to green hydrogen in Spain, I hope Barcelona realises it's going to lose a big opportunity if it doesn't change’.

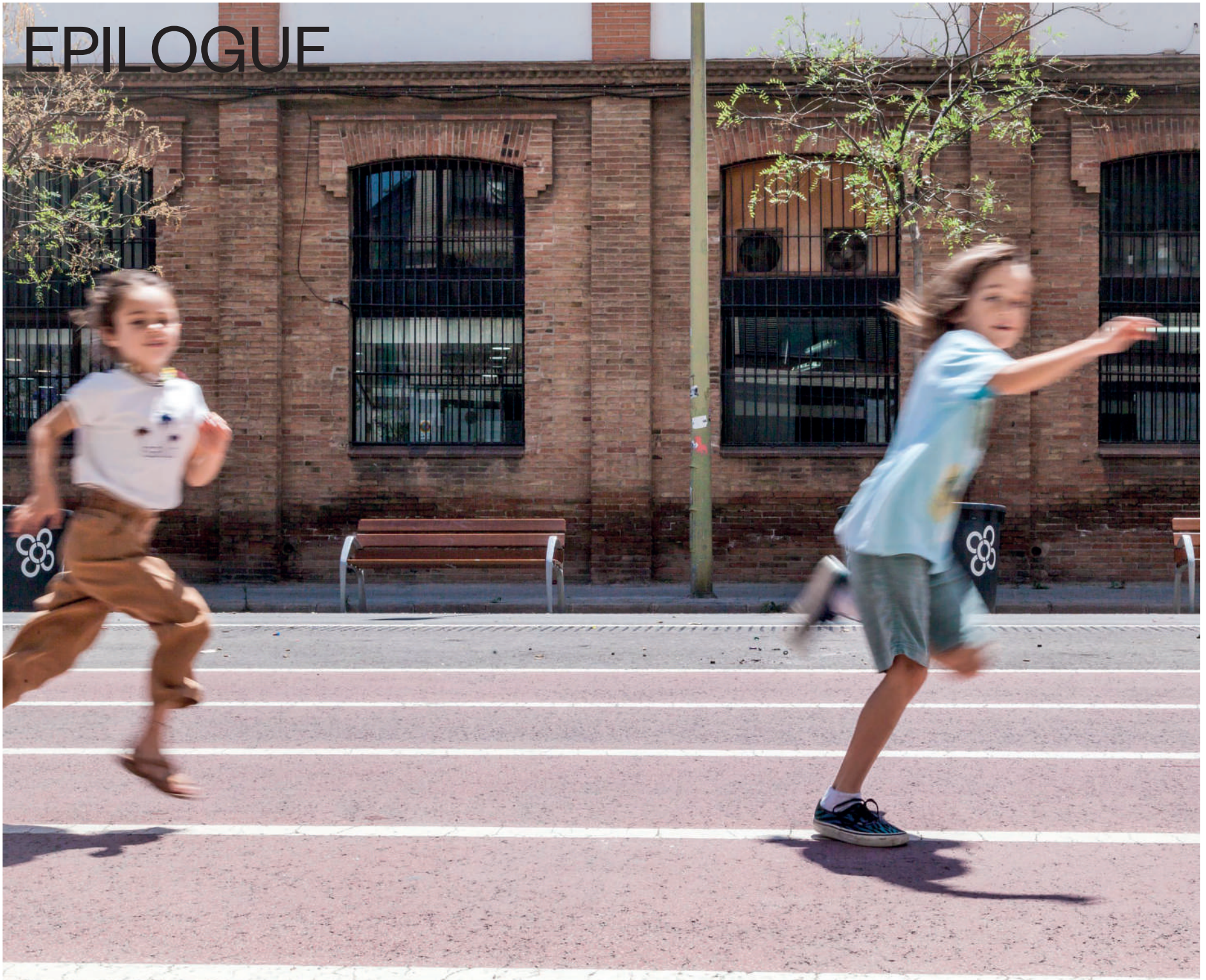
A digression for confirming the commitment: In February, the Enagás subsidiary, Scale Gas, and the Norwegian ship owner Knutsen, launched the first NLG tanker built in Spain. It was built in a Gijón shipyard with nine million euros funded by the European Commission. The ship's operational headquarters will be in Barcelona Port. The ship is

operating as a mobile refuelling station supplying NLG to ships that use this type of fuel—350 in the entire world—and which dock in or pass by Barcelona.

The port maintains that the ship's launch is part of a strategic operation to get Barcelona to attract ships that are fuelled by NLG and which currently refuel in Mediterranean ports that have this service. They believe that using NLG represents a 'step forward' in the decarbonisation of sea transport. That's the commitment at present. Parmentier, however, points out that NLG is a member of the family of fossil fuels that have to be substituted according to the Paris Agreement's goals and EU's carbon neutrality pathway: **'Investments in infrastructures have consequences over several decades, which is why there's no time to lose'**, he says.

As for the major challenges facing the city up to 2030 to meet the Sustainable Development Goals, Parmentier remains sceptical. So much so, that he regards 2030 as too close and believes that it is now high time to think about the post-2030 roadmap. He is already doing that. **'We started a process last year, called Ocean 2050, on the initiative of the former director of the World Trade Organization, Pascal Lamy, and President Macron's Special Envoy for the Ocean; the theme this summer will be Mediterranean 2050 at a meeting in Tunis'**.

EPILOGUE



Barcelona: reactivation and reinvention of the restless city —Greg Clark

When the City of Barcelona decided to host the REACT conference in Spring 2021, the aim was clear. This was not ‘just another’ conference with the intention to understand the multiple changes that the pandemic had fuelled or accelerated, and to predict what the ‘new normal’ might be as those forces of change played out. It was rather a deliberate attempt to REACTIVATE Barcelona.

The idea was to remember, remind, and remake the energy and drive of the city, by reconvening multiple local actors who wanted to re-ignite Barcelona as a force for enterprise, value creation, and progressive action. They wanted to engage publicly to make their activities visible again to the whole city, so that participation could be optimised. This was not a conference with the aim of simply discussing what was happening, but rather an intentional effort to convene, spark, accelerate and drive how Barcelona could emerge from the pandemic.

—REACT conference was happening, but rather an intentional effort to convene, spark, accelerate and drive how Barcelona could emerge from the pandemic.

As people in Barcelona know very well, it is not the forces of change that determine what happens in a city, but rather how effectively local leaders shape those forces through intentional actions and alliances. As Barcelona is one of the world's most intentional and restless cities, it was no surprise that Barcelona viewed the pandemic as a strategic opportunity to position the city afresh. It was already clear in Barcelona that the pandemic represented the end of one cycle and the start of another, and that there would be positive dividends for the people of Barcelona if the city could use this new cycle moment to be proactive in shaping the future city.

The turning of these cycles always presents opportunities for cities to focus on what they aspire to be in the new wave, and what is needed to succeed. After a shock, the new cycle is always also about revision and renewal of the 'social contract' that underpins our social order, and a new 'license to operate' for activities that align. Thus, the focus of Barcelona REACT was on the key industries, sectors, and place-shaping of the new cycle, where Barcelona can be a leader. The Green and Blue Economies, Mobility and Urban Transport, Science and Technology, Digital Industries and Talent, and on the need to communicate, position, and promote, to better Brand Barcelona, in ways that would be advantageous. The new cycle offers Barcelona unrivalled opportunities if it can position successfully.

Two years from the first Barcelona REACT conference this short insightful book celebrates the spirit of that intention to reactivate the City. Lock-downs were, in many ways, a de-activation of urban life, a kind of accidental experiment of living in a city, but not with the usual scale, energy, platforms, and interactions that a

big city makes possible. We lived in 2 dimensional (2D) cities for many months.

One positive side of those temporary changes was that many of our people re-encountered their neighbourhoods and neighbours, and rediscovered the value of living locally. This has created some positive shifts towards new forms of partial re-localisation in many cities, and Barcelona has led the way in showing how local neighbourhoods can be reshaped to better meet the needs of people.

The quest now is to combine this rediscovery of localisation with the reactivation of the metropolitan city; where the sharing of a large and diverse employment market, transport systems, residential areas, public services, cultural facilities, parks & nature, and specialist health, education, and other services, can be organised to support a growing metropolitan population in ways that help them to be productive and creative. In our new cycle, our life in cities will be 'poly-amorous'. We will love the big and the small, the physical and the digital, the near and far. But we have to show the world that this new city can really work, and for that we need Barcelona's restless drive to lead and shape the agenda.

Barcelona wakes you up

Barcelona is a restless city. Not the kind of restlessness that make you nervous, it is the kind that makes you excited, intentional, and resourceful.

When we stop to think about the 'outsized' contribution that Barcelona has made to the world's enchantment with cities over the past 40 years, it's important to try to know and understand what has driven that. For much of the past 4 decades Barcelona has been a favourite city for many people from every walk of life. In Barcelona there is a spectacular combination of aspirations, attitudes, assets, and adventure, that make Barcelona a unique place. I'm a Londoner, and I have visited and reviewed more than 300 cities around the world. I've visited Barcelona almost 50 times in the past 20 years. It certainly magnetises me.

Cities have the power to change who we are, and how we live, to shape our lives, actions, thoughts,

and dreams. When we visit a city that is not our own, we witness the way that other urban cultures shape lives. Sometimes we return to a city because it offers us a new set of insights or possibilities that we don't sense elsewhere. In the case of Barcelona, there is compelling mix that both makes the people of Barcelona proud and attracts people and opportunities from across the world.

Why Barcelona? The issue is much discussed, both in the city and beyond. Barcelona is a city of many inherited traits. Some are clearly visible:

- A Mediterranean City with a unique quality of climate, light, and air that comes from the Sea and has inspired human aspiration, discovery, and trade for 2,000 years.
- A landlocked city, constrained and contained by Mountains, Sea, and River, that requires Barcelona to innovate in its built environment, to grow cleverly within its borders, not sprawling beyond them.
- The capital of Catalonia, with all of the identity, civic pride, and cultural production, and the associated traumas and scars of the history of seeking self-determination over many centuries. That intentional drive to seek self-determination as a city, has led to city that is determined to be different, to do things its own way, and to demonstrate what individuality looks and feels like. So it attracts people who want to be different too.
- The most southerly city of northern Europe, and the most northerly city of southern Europe. Historically Barcelona was the most southerly city of the Frankish Empire that helped to lead the reconquest of Spain from the Moorish Kingdom. Barcelona had partnerships with other principalities and Dukedoms, notably with Aragon, but never gave up its singular identity. Barcelona was also the first industrial city of southern Europe ('The Manchester of the Mediterranean') and has a business and enterprise culture much like northern Europe.
- The 'second city' of Spain, though this categorisation might be rejected in Barcelona, it is literally true in population terms, and Madrid as the capital city has many benefits from which Barcelona is excluded.

Barcelona has similar features to Manchester, Melbourne, San Francisco, Vancouver, or Tel Aviv. It is the innovative, progressive, cosmopolitan, and anti-establishment city, in contrast to Madrid's Hispanic, statist, and corporate power.

These features, when combined, add up to two important ideals. First, Barcelona is a city that must innovate to thrive, and that innovation must be both in the built form of the city, and in its society and economy. Second, it is also a city that must 'punch above its weight' (of 'only' 1.6 M people) if it is to project its grand dreams, and for them to be believable. Barcelona is not a big city in population, geography, or economic size, but it is a very big city in terms of ideas, aspirations, creativity, intent and global.

The fact that FC Barcelona is widely regarded as the best football (aka soccer) team and club in the world and plays with a unique style of innovative football (involving global talent in fluid team formations) mirrors and confirms the position of the city itself.

—Barcelona is a city of soft power and lateral connections, not hard power and literal thinking.

The city of Barcelona is a world leader through innovation and distinctiveness, rather than through size, authority, or power. It is a city that must garner its support and engagement from beyond Spain, because Spain is 'too small' for Barcelona, and within Spain the competition is not quite a fair one. Beyond Spain, Barcelona has a larger canvass and a bigger purpose. So, it must project itself and its values globally. Whether it promotes culture, enterprise, innovation or social reforms, its audience is global. That why it is important that Barcelona regularly hosts the world through the Mobile World Congress, and over the next 10 years The Americas Cup, The Manifesta Arts Festival, the Capital of Architecture, and many more. Let's be clear, Barcelona is a city of soft power and lateral connections, not hard power and literal thinking.

So, Barcelona wakes you up because it is about how a city can innovate to succeed, and how it can retain, and even enhance, its unique character in the process of learning how to succeed. Because of these the precise inherited traits observed above, Barcelona seems to me to have acquired three distinctive aptitudes or impulses that mark it out:

- Barcelona is restless, there is a constant desire to do better or be better, and to put things right if they are wrong. This restlessness leads to city of constant projects and initiatives, and it can also lead to protests and conflicts when the consensus is broken.
- Barcelona is intentional, the city is a ‘conscious’ project or a venture that comes to embody a distinctive way of living. It is about identity and self-determination. The people of Barcelona do not want to be forced to live in ways that they have not chosen, and they will reject any attempt to make them do so. The history of 2,000 years exposes the multiple occasions when the people of this city have fought for their self-determination.
- Barcelona is a muse, an inspiration for people that want to find their own path. Because this city has tried to be different and be itself, it inspires people to do the same. A city that makes you want to discover and do the things that you are capable of, to dream differently, and see the possibilities with a new light. It has the effect of shaping personal ambition and increasing human expectation. Because of this character trait, there are always high expectations of Barcelona globally, there is an expectation that it will lead global urban innovation.

If you put these three powers together you can begin to see why, and how, Barcelona became the most improved city in the world in the 1990s. The powerful combination of a city and citizens seeking a common future, though a well-designed city shaping physical projects, with an assertive set of ideals about industrial and technological advancement, and a commitment to both cultural renewal and cosmopolitan openness, gave Barcelona a formula that produced two decades of unparalleled success.

—FC Barcelona is more than a club. The City of Barcelona is more than a city. It is a partner for great ventures.

A major new cycle

The Barcelona REACT conference in 2021, 2022, and 2023 had the specific intention not just to re-open the city but also to reactivate it.

The city leaders in Barcelona knew that the post-pandemic city would not just be a matter of time during which people would return to pre-pandemic habits, and restore the city to its former self, but rather that two other important ideas needed to shape that reactivation.

The first was that citizens, investors, entrepreneurs, students, researchers, and innovators would have new choices after the pandemic. These choices were both about how much to ‘come back’ to previous patterns of living, travelling, and working in any city, and also choices about which cities they would wish to come back to. Barcelona had to try to win on both counts.

Second, they recognised that the pandemic was not just a cyclical change, it was deeper shock that was an active ingredient in change itself. The pandemic forced people and economies to work differently, and this changed future intentions. It accelerated digitisation, it made the link between a healthy planet and healthy people more visible, it exposed deep rooted inequality, it revised the nature of global supply chains, and re-oriented the character of the relationships between citizens and governments.

—The pandemic forced people and economies to work differently, and this changed future intentions.

All of this led to new ideas about how a city might evolve and reform after the pandemic. Changes in how the city is sequenced and navigated, what certain spaces

and places are for, how road and public realm are used, where and when cars can go, and what future roles of the city will play. Rather than a recovery or restoration, our cities would need to be reinvented.

A cycle that follows a major shock or trauma like a war, or a pandemic, or a natural disaster has additional elements. Where there has been human loss and where the pain has been felt more by some than by others, there is always a reckoning that leads to opportunities for reform. One way to think about this is that the unconscious code that is our 'social contract' gets reviewed and revised as we consider what the basis is for a new agreement is, about we want to live together. That also usually involves the review, renewal, or revoking of what we might call 'the license to operate', the 'permission' we collectively give to industries, businesses, and social activities if they are perceived to align with the new 'social contract'. There is sorting effect. From one cycle to another that 'social contract' and the 'license to operate' are amended, and after a pandemic the changes are larger than usual.

This post-pandemic cycle is one of multiple new forces that don't all point in the same direction:

- The pace and expansion of digitisation has changed the way we work, consume, play, and receive services and has led to wider choices about patterns of work, mobility, and location. These have given many cities new challenges to reinvent the city for the new demand patterns. It requires infrastructure and asset owners to consider both obsolescence and opportunity for repurposing facilities and buildings. There are big debates about the difference between personal autonomy and choice for workers versus firm or sector level productivity, with much still to be resolved. The new hybridity is not so much a new 'fix' but rather a new form of 'flows' which will not be settled quickly.
- Accelerated decarbonisation has been encouraged both by the recognition that respiratory illnesses in humans are made much worse by poor air quality, and the experience of lock downs revealed that it was possible to lead a lower carbon lifestyles, whilst remaining somewhat productive. So there is a new

impetus in reforming our cities towards rapid decarbonisation (eg by reducing car use as quickly as possible).

- The unwinding of some global supply chains and the temporary halt to many forms of travel and migration, coupled with geo-political tensions have led to changes that some describe as 'de-globalisation', and others foresee as a more distributed globalisation. This has been accompanied by rapid growth of cities in the fast-urbanising regions of the Middle East, South East Asia, and India, who join China and Latin America that already have many competitive cities. The consequence is that there is much more potential competition amongst cities, especially for talent and mobile workers. All cities in Europe face a new matrix of competition.

There are several consequences of these changes that create new opportunities for cities.

- People and capital have become more mobile. The established urban hierarchy has become more flexible and less rigid. Capital is more willing to spread into new locations and people are more willing to use virtual working to consider re-location. For high quality of life cities this provides an opportunity to compete for people who have jobs that are currently based in other locations (Paris, London, New York, San Francisco, Hong Kong), but might now be done virtually from almost any location. For Barcelona— this provides a potential source of new talent and could consequently create the conditions for jobs to be created in Barcelona as well. It also means that Barcelona might find it much easier to attract investment into its start-up companies and innovations.
- The built environment of our cities is now full of both obsolescence and opportunity. Changed patterns of demand for retail, hotels, offices allows us to reengineer certain buildings for new alternative purposes and to re-equip other buildings for the new patterns of working, visiting, and living. At the same time, new economic activity in green and blue economy are surging and a new urban logistics economy is emerging, shaped by climate and driven by new demand patterns.

These create new requirements for buildings and facilities.

- The new localism creates opportunities for cities to shape themselves differently. As more people work in hybrid ways, this facilitates neighbourhood improvements to serve a population that is more available in the day-time and wants to work ‘near home’ as well as ‘at home’. At the same time these changes allow city centres to reinvent their core role focussing more on how they provide gathering places as well as workplaces. There are also opportunities here for nearby towns and regional cities that have become more attractive as places to live in the context—of a weekly or monthly visit to a workplace rather than a daily one.
- New economic sectors are growing quickly, especially where there is an interface either between technology and climate, or between place and experience. These sectors vary from the green and blue to digital and virtual. They include the new modes for delivering services as experience and the enhanced role of ‘place’ as context and fabric for human experience. Breakthroughs in enabling tech (esp. Cloud and Edge Computing, AI, VR, robotics, genetics, space, body recognition, along with new energy systems, and circular processes) will create many more jobs in this cycle and cities need to ready with both the talent and supportive eco-systems that they need.

Overall, we can observe a new cycle that is accelerated, and carries both short and long process of change. It brings the requirements for multiple reforms and adjustments, and for leadership that will win trust and shape the cycle within a city.

For many cities the recovery path is distant because some activities are lost forever. The imperative now should not be to recover or to restore the city, but to reinvent. The changes in this new cycle add up to anew ‘sorting effect’. Cities must figure out what is now done best face to face and face to place, and not try to compete for what is best done in digital space. They also have to work out how to combine the physical, social, and digital in new and unique ways. Cities can now shift out of an efficiency mandate where they

host mundane forms of work, consumption, production, and services, and play instead to what cities do best:- a quality mandate for habitat, innovation, and experience. Habitat, Innovation, and Experience are the things that are enriched by place and by the diversity, connectivity, and scale, of cities. Things that better done online will be done online. Technology facilitates a new sorting effect towards which cities must be wise.

But the pandemic hasn’t been the only paradigm-shifting event in this 5th decade of this extraordinary century of cities. The tool-box of city management, public governance, and progressive policy is now joined by three new resources in the quest for good urbanisation;

- The first is a new suite of enabling technologies that are driving growth in new urban sectors, improving city systems, and making city management more of a shared endeavour between business, government, and citizens.
- The second is intentional capital which has woken up to scale of the urban opportunity and the existential imperative to shape the growth of sustainable, low carbon cities.
- The third is the new art of place-leadership, that integrates otherwise separated and fragmented inputs into ‘virtual governance’ premised on the imperatives of place rather than sectors, institutions, or assets. It builds new forms of social capital and identity through deep participation.

Taken together, and when combined with effective urban governance and city management, these three new tools can augment our urban leadership, and drive our cities forwards. They also provide some fresh impetus to urban innovation in three ways.

Experimental projects that re-sequence the city have become more possible (from superblocks, to low traffic and net zero neighbourhoods, car free city centres, free public transport, pop-up public spaces, and much more). There is a new age of experimentation in our cities. Our cities have become laboratories of new urban living.

—*Our cities have become laboratories of new urban living.*

Due to the enhanced mobility that technology brings there is a new relationship between urban innovation and the innovation economy. The attraction of mobile talent and investment can literally be enabled digitally in ways that were not possible before. Hybrid lifestyles don't just mean that we work at home sometimes and in the office or workplace at other times, but also that we can live in one place and work in another. For high quality of life cities like Barcelona, Lisbon, Miami, or San Diego, this provides a means to build the innovation economy more quickly.

Due to the shift towards habitat, innovation, and experience, the new experimental urbanism, and the increased fluidity in our cities, there is a new a more broadly based leadership emerging. The multiple and complex flows of people, capital, services, experiences, ideas, and assets cannot be easily shaped by municipal policies and initiatives alone, and require more distributed leadership and coordination in our cities, where the private sector, citizen groups, and civic organisations are much more involved in sharing the initiative of reinventing the city, taking bold bets, promoting and campaigning to win opportunities.

The leadership task of city reinvention cannot be led by City Governments alone, but it can and should be convened and coordinated by them.

Barcelona's unique opportunity

An revealing and promising cycle lies ahead for cities that are prepared to experiment, pioneer, and reinvent, and form new broadly based leadership to do so.

This post pandemic cycle is a perfect moment to play to Barcelona's strengths. This cycle will favour cities that are prepared to be bold and intentional, restless and experimental, inspiring and inclusive of all the talents. In a one sense, this new cycle could be Barcelona's greatest period of opportunity. It will play precisely to what Barcelona does best: continuous

reinvention guided by values, aspiration, and distinctiveness.

We might characterise Barcelona's past 40 years as having some distinctive cycles. Firstly, there was a cycle of great physical reinvention of the city that hosted the 1992 Olympics, restored civic pride and invited the world. Then there was a cycle of great cultural and creative flourishing with Barcelona succeeding as a city of design, media, creative industries, expanded universities, super computers, tech entrepreneurs, and synchrotrons.

Then a new cycle starting in 2010 with the Global Financial Crisis, and including both the political turmoil of the 'over tourism' discourse, the intense independence campaigns, and then the COVID 19 pandemic. We might observe this as a cycle of revolt, and attempts at reform, a desire to shape a new social contract, one that might now be possible in this cycle.

At the same time these events happened against a backdrop of surging population growth and migration, expansion of jobs and diversification of economic sectors in the city. Part of the challenge of this the recent cycle has been the task of separating which issues are the consequences of success and which ones are the consequences of failed policies or frameworks. There is much complexity in this. But one issue that does seem clear is that, in our times of human mobility, successful cities will grow their populations, so any city that wants to succeed needs to plan for population growth with investment in job creation, housing, amenities, infrastructures, and services. That will require skilful resizing and reshaping of the city.

This new forth cycle offers an opportunity to address the issues of the last cycle and build that new social contract around a reinvented Barcelona that knows how to be both physical and digital, local and global, aspirational and capable of managing success, and all its unintended consequences. We might observe some other cities that have traits a little similar to Barcelona in that they are smaller cities, which for reasons of history, geography and anthropology also feel that they must punch above their weight and aspire to global visibility and reach.

—One issue that does seem clear is that, in our times of human mobility, successful cities will grow their populations, so any city that wants to succeed needs to plan for population growth with investment in job creation, housing, amenities, infrastructures, and services. That will require skilful resizing and reshaping of the city.

The first is Singapore. A small and very poor island state in South East Asia only 60 years ago, has become a global success story of affordable housing, public education, public transport, decarbonisation and nature protection. At the same time, it has become a global hub of finance, media, medicine and innovation. Singapore has continuously planned for its own success and has anticipated the population growth that would come and met it with a boom in thoughtful construction.

Another relevant city is Tel Aviv. Like Barcelona Tel Aviv is intentional city. The city that was founded in 1908 has grown quickly to become a technology hotspot in the eastern Mediterranean with a famed quality of life, liberal and progressive values, and a strategy to use tourism to build global reach to fuel a knowledge and innovation economy, and to attract new investment and residents. Tel Aviv tries to show the world what Israel could be if it were progressive. Tel Aviv's challenge today is similar Barcelona's past cycle, the unintended consequences of success are being felt in rapid population growth and house price inflation. There is also the risk of dependence on a set of tightly correlated sectors. Tel Aviv must become a larger regional/metropolitan city, learning from Singapore that its new public transport lines must support a wider and deeper housing system, and how to use hybrid living and working wisely to 're-sequence' the city away from congesting car usages.

Our third city might be Medellin. Like Barcelona, Medellin is already a city of reinvention with a strong accent on local community, civic leadership, and the remaking of places. Medellin's iconic re-emergence has brought population growth in both the city and the more profoundly the region of Antioquia. For these reasons growth of regional transport and housing has been a key feature of collaboration between the city and the region. Business leadership has also played a key role in setting the agendas for regional investment and being part of the distributed leadership networks of the metropolis. Barcelona, Singapore, Tel Aviv, and Medellin each face a common opportunity in the coming cycle; how to lead the journey of reinvention towards habitat, innovation, and experience with the fresh tools available in this new wave of post pandemic urbanism.

I do not usually place bets. But if I did, I would bet on Barcelona to seize the opportunity of this new cycle. Barcelona's distinctive strengths make it a favourite to succeed and to help and inspire other cities to do so. There is an advantage to being the 'intentional city' for more than 1,000 years. There is a restlessness to make the most of opportunity. There is the desire to inspire each other and generate confidence in dreams and ventures.

It is in the business of Barcelona to be a leader. By being a restless and intentional city that is connected to world beyond Spain, Barcelona must operate as leader in redefining what a city is in the post pandemic age, just as it has previously defined what a free Mediterranean port looks like, or what a city recovering from dictatorship should do, or how a city should host an Olympics, or redevelop a historic industrial district.

Barcelona is already an innovator that other cities learn from. In the coming cycle Barcelona should shape the opportunities to build new jobs and opportunities, as it has always done, and to be an attractive place for Catalans, Spanish, and internationals alike. Barcelona will help the new social contract for cities and the license to operate for businesses and institutions within cities. That is a worthy task where the world expects Barcelona to show the way.

—Barcelona will help the new social contract for cities and the license to operate for businesses and institutions within cities. That is a worthy task where the world expects Barcelona to show the way.

Barcelona Green Deal is the roadmap to promote a competitive, sustainable and equitable economy, which generates quality employment and is adapted to new challenges, such as the ecological and digital transition.

This economic agenda is also a city proposal that was drawn up in 2021 and that this 2023 is taking shape. The initiative seeks to recover the economy with the transformation of six large urban areas– the Zona Franca, Montjuïc, the centre, the 22@, the Besòs and the new science and health center on Diagonal– and the boost of seven strategic economic sectors linked to innovation, digitization and talent.

The final objective is to move towards a change in the economic model that covid-19 has accelerated and that should allow the diversification of Barcelona's economy, and generate 100,000 new jobs between now and 2030.



Barcelona Green Deal 2030

- Porta Diagonal. New pole of science and health
- Zona Franca. Logistics and neo-industry
- Montjuïc. Connectivity, sport and culture
- Centre. Balance to live, work and visit
- 22@. Innovation and creativity
- Besòs. Neo-industry
- M Municipal Markets
- Electromobility / Endolla Barcelona
- America's Cup

Areas of action

Zona Franca. Logistics and neo-industry

1 – MERCABARNA

The expansion of Mercabarna reinforces its leadership as Europe's main wholesale fresh food market. It operates 24 hours a day as a food city with the aim of guaranteeing the supply of fresh food to the public. In addition, it will become the largest rooftop self-consumption photovoltaic plant in the Iberian Peninsula, thanks to an agreement with the wholesale associations located in the food court to install photovoltaic panels as part of the MESBarcelona program, promoted by Barcelona City Council.

Montjuïc. Connectivity, sport and culture

2 – FIRA MONTJUÏC

A new strategy is being considered for the Montjuïc Fair, so that Barcelona can continue to grow as a city of exhibitions, fairs and congresses. Its privileged location at the foothill of Montjuïc, integrated into the urban fabric and close to facilities, transport and urban services, is an asset that makes it unique: these qualities will be used to generate added value and economically energize its surroundings.

3 – PALACE OF SPORTS

The renovated Palau Municipal d'Esports will become the headquarters of Barcelona Sports Hub. The facility will be the seat of the sports innovation center and will have technological equipment to become a test laboratory for new technologies and innovation applied to sporting events. The building will also allow high-level sports and city events to be held for between 3,000 and 4,000 spectators.

Centre. Balance to live, work and visit

4 – POST OFFICE BUILDING

The Correus building in Via Laietana will become an ecosystem dedicated to training, talent attraction and innovation in the digital sector. There will be spaces for training, the incubation of companies and startups and office areas for established companies in the sector, with the aim of generating synergies between the different activities.

5 – LA CIUTADELLA DEL CONEIXEMENT

The Barcelona Institute of Science and Technology (BIST), the Popeu Fabra University (UPF) and the Superior Council of Scientific Research (CSIC) will create a new research and innovation complex in Barcelona's former Fish Market site, focused on biomedicine, biodiversity and planetary well-being. This project is integrated in the Ciutadella del Coneixement Plan.

6 – PORT OLÍMPIC

The Port Olímpic [Olympic Port] of Barcelona is immersed in a transformation process to become a space dedicated to marine dissemination, nautical, water sports, the blue economy and gastronomy. It aims to be reborn as a new city space and a point of reference that connects the sea with the city, and has taken off with a clear objective: the America's Cup to be held in Barcelona in 2024.

22@. Innovation and creativity

7 – PALO ALTO CREATIVE INDUSTRIES LABORATORY

New reference space for the generation and growth of companies in the creative industries sector with a focus on experimentation and audiovisual innovation. Palo Alto is one of three disused industrial buildings that began the revitalization process in 2022. With this initiative, the City Council aims to create new hubs of innovation, talent attraction and investments, while diversifying Barcelona's economy.

Besòs. Neo-industry

8 – LA MERCEDES

The Mercedes-Benz industrial site offers an unprecedented opportunity for transformation to create a new mixed, compact and inclusive urban space. It is about updating the industrial uses and generating a new neighborhood that will act as a hinge to unite the surrounding neighborhoods. With its total renovation, the industrial buildings will be reused to accommodate productive activities and housing areas and open spaces will be designed as a car-free environment.

Transversal projects

Municipal Markets

The Municipal Markets Transformation project focuses on the improvement and physical and digital transformation of Barcelona's markets. The 'Barcelona Markets' model is committed to the development of markets following a Mediterranean model that unites people and commerce, fulfilling a prominent role in the construction of the city and in its social, economic and urban organization.

Electromobility / Endolla Barcelona

Barcelona de Serveis Municipals (B:SM) leads electromobility in the city through the Endolla Barcelona network of electric charging points. Endolla Barcelona has become the largest public network for electric vehicles in Spain and is also one of the most extensive networks in the European continent.

America's Cup 2024

Barcelona will host the 37th edition of the America's Cup in 2024, one of the sporting events with the most international exposure. With the celebration of the most important regatta in the world, the city will once again be the capital of sport. Besides hosting one of the great competitions on the planet, Barcelona also aims to contribute to technological innovation, sustainability and to open it up to all citizens, promoting the look from Barcelona towards the sea and laying the foundations for the transformation of one of the headquarters of the event: the Port Olímpic.

MIKE BLACKMAN

General manager of Integrated Systems Events (ISE)

ISE organises the largest audio-visual (AV) trade fair in the world. An industry leader with experience and a track record in the events sector, he has launched a series of technological events all around Europe. An avid technology fan, he has been involved in technology events for over 35 years, the last 18 of which he has spent in AV. A passionate speaker, he represents the business and promotes the industry. In 2020, *Installation magazine* voted Mike the most influential person in the Pro AV industry. Mike leads the team that organises the leading event in the audiovisual industry.

GREG CLARK

Urban planner and advisor to global cities

Group Advisor on Future Cities & New Industries at HSBC, Greg Clark is leading the bank's work on cities and investment, with global clients in 300 cities. He is Chair of the Connected Places Catapult (CPC), the UK's innovation accelerator for cities, transport and place-leadership, and Chair of the UK Cities Climate Investment Commission (UKCCIC). He is a Board member of Transport for London (TfL) and the London LEP. He is author of 10 books and 100 reports on cities, investment and place-leadership. His monthly column, 'The Planet of Cities', is hosted by RICS. He is Global Cities expert on the BBC World Service Series, My Perfect City. He knows 400 cities.

BRUCE KATZ

Urban policy expert and author
He is the founding director of the Nowak Metro Finance Lab at Drexel University in Philadelphia.

Previously he served as inaugural Centennial Scholar at Brookings Institution and as vice-president and director of Brookings' Metropolitan Policy Program for 20 years. Katz co-led the Obama administration's housing and urban transition team. He is coauthor of *The Metropolitan Revolution* and *The New Localism: How Cities Can Thrive in the Age of Populism*.

ANA MAIQUES

CEO of Neuroelectrics

Ana Maiques was nominated by the IESE as one of the most influential women entrepreneurs under 40 in Spain in 2010. She received the EU Award for Innovative Women from the European Commission in 2014. In 2015 and 2016, she was named one of the most inspiring women in the InspiringFifty list in Europe. Ana continues to break the barriers of science and technology in an impressive way with Business Ethics.

TONI MASSANÉS

Director of Fundació Alcía

The Alicia Foundation is a responsible food laboratory, a kitchen research center with scientific rigor that works so that the whole world eats better. He has received distinctions such as the PAAS, NAOS Awards, RAEG National Healthy Gastronomy Award, National Research Award of the Catalan Foundation for Research, Oil Culture Award of the Garrigues Oil Fair, among others.

HILA OREN

CEO of Foundation Tel Aviv

With a deep passion for urban planning Hila Oren is an expert in city making, marketing and branding. Before the Tel Aviv Foundation, Dra. Oren was CEO and founder of Tel Aviv Global, an initiative by the

Office of the Mayor of Tel Aviv-Yafo, dedicated to elevating the city's brand and global positioning. She is also a member of the board of the port of Haifa, where she is on the Executive Committee of Future Mobility and is a member of the Board of Directors of Amidar, the Rem Daniel Center, the Academic College of Tel Aviv-Yafo and the Charney Forum Advisory Board for a New Diplomacy. She has a diploma and an MBA from Tel Aviv University, a certificate from the Harvard Kennedy School Leadership Program and a PhD from the Department of Geography at the University of Haifa.

RÉMI PARMONTIER

Environmental activist, former Communications director and co-founder of Greenpeace

Rémi Parmentier, co-founder of consultancy Varda Group has been an ocean advocate since the mid-1970s. He was a founding member of Greenpeace International in the 1970s and later deputy executive secretary of the Global Ocean Commission. Rémi provides strategic advice to public and private organizations. He is currently Secretary of Because the Ocean, an alliance of 39 countries dealing with the relationship between ocean change and climate change.

SISÓN PUJOL

CEO of Nomon Design

Designer, strategist and specialist in working with companies to ensure their growth via design. Her 30 years of work in her field are framed by the close relationship she has always had with SMEs. She started her career in 1989 as a freelancer in Basel. Then, in 1992, she opened her own design studio in Barcelona—Sisón Studio—and in

2006 she founded Nomon Design. She is a project lecturer at ESDi, consultant at ACCIÓ, a member of the BCD Company Club, member of the Board of Trustees of Espigoladors and the Texia Group Advisory Council. President of the ADG-FAD, Association of Art Directors and Graphic Designers.

GUAYENTE SANMARTÍN

World Vice President and CEO of HP Telecommunications engineer from the UPC Barcelona and PDD from the IESE, Guayente is the global general manager of HP's Large Format Printing Business. She and her team are responsible for providing innovative and sustainable solutions aimed at architects and construction professionals, as well as print service providers offering applications for outdoor signage, interior decoration and the textile sector.

SARA SANS CASANOVAS

Journalist

Head of section 'Viure' a *La Vanguardia* newspaper. President of the Tarragona demarcation of the Association of Journalists and vice-president of the Association of Journalists of Catalonia (2012-2018). Presenter of the interview program 'Converses al Castell' (TAC12) and the documentary series 'Tremolors' (TAC12). Co-author of the books *A peu per Tarraco* (Arola Editors, 2013), *La represa democràtica. 30 years of municipal elections in Tarragona* (Silva Editorial, 2009) and *Tarraco Viva* (Arola Editors, 2008). Energy Award (EnerClub, 2008). She has also worked at *Diari de Tarragona*, *Ràdio 4* and *RAC 1*. Degree in Journalism from the Autonomous University of Barcelona.

LUIS SERRANO

Director of Centre for Genomic Regulation

He obtained his doctorate at the CBM (Madrid) in Cell Biology. He has worked in several research centers in the United Kingdom and Germany specializing in protein design and folding and in systems biology. In 2006 he returned to Spain to coordinate the Systems Biology program at the Center for Genomic Regulation in Barcelona (CRG), where he has also served as director since June 2011. He is a member of EMBO and RACEFyN and has been awarded the prize to the Marie Curie Excellence, the City of Barcelona Award and the Francisco Cobos Award. He has twice obtained the prestigious ERC Advanced Grant and two ERC Proof of Concept and has an extensive curriculum as a teacher and researcher. He participated in the creation of one of the first biotech companies in Spain (Diverdrugs), in 1999. He also co-founded Cellzome, EnVivo and TRISKEL and has 20 registered patents. He is the founder and has led the association of European Centers of Excellence EU-LIFE and is the founder and chaired the network of centers of excellence Sever Vuit and Maria de Maeztu (SOMMa).

MARIA TSAVACHIDIS

CEO of EIT Urban Mobility

EIT Urban Mobility is a European knowledge and innovation community to accelerate the transition towards sustainable urban mobility and livable urban spaces. Before joining the European Institute of Innovation and Technology in 2018, Tsavachidis was responsible for innovation at Siemens for more than 20 years in different positions. She began her career as a researcher in the field of intelligent transport

systems and has a PhD in Traffic Engineering from the Technical University of Munich.

ANDREU VEÀ

Cofounder and President of CovidWarriors

Internet pioneer Engineer in Telecommunications, Doctor of Engineering in Electronics and Master's in ICT Management. He has represented Spain before the European Commission as Digital Champion and is the only European on the Internet Hall of Fame Board. He received the National Award for Personal Trajectory in the Internet 2017 (Senate), and the Award for Outstanding Personality in Telecommunications and Computing 2018. Man of the Year 2020 in Spain (*Esquire* magazine). He directs the WiWiW research program at Stanford University, invited by Vint Cerf (one of the fathers of the Internet). He is a global jury and a UNESCO national selector of mobile applications. Entrepreneur, counselor, writer, researcher, and lecturer, his passion is to communicate how technology can improve our lives.

VICTOR VIÑUALES

Director of Ecodes

Sociologist, co-founder and director of the Ecology and Development Foundation (Ecodes). Vice-president of the Spanish Global Compact Network, member of Inditex's Social Council and Sol Meliá's Panel of Sustainability Experts. Associate Professor of the Higher Management Program in Corporate Responsibility of the IE Business School since 2007. Member of the Advisory Board of the Biodiversity Foundation. He is a member of all these councils: Advisory Council of Triodos Bank Spain, Advisory Council of CREAS Social Fund,

Advisory Council of the Cooperation Fund for Water and Sanitation of the Government of Spain, Advisory Council of the Hazloposible Foundation, Council of Greenpeace Spain, Council of Experts of the Center for Responsible and Sustainable Finances, and member of the Council for Sustainable Development of Spain.

reBarcelona
reThinking the city of the future

This book has been published on the occasion of the REACT Economic Reactivation Conference held in Barcelona from March 28 to 30, 2023.

Published by
Barcelona City Council

Texts
Sara Sans
Greg Clark

Coordination
Bàrbara Pons

Graphic design
spread. David Lorente - Tomoko Sakamoto

REACT 2023 infography
Cocu

Translation and proofreading
Linguaserve

Printing
Gràfiques Ortells, Barcelona

All rights reserved

© of the edition, Barcelona City Council, 2023

© of the texts, Sara Sans, except:
Greg Clark, pp. 133-148

© of the images, Barcelona City Council
Paola de Grenet, pp. 12-13, 60-61, 104-105

Laura Guerrero, pp. 82-83

Curro Palacios, pp. 130-131

Vicente Zambrano González, pp. 38-39

© Barcelona Regional: Map, pp. 152-153

© Jordi Bernadó: cover



**Ajuntament
de Barcelona**