

Smart Workplace 2040

The rise of the workspace consumer



GLOBAL WORKPLACE SOLUTIONS



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PUBUCATION by

the

to UPDATE
moment

we want some
VALIDATION
of our
SCENARIO..!

diversity

Realistic?

Challenge

About Johnson Controls

Johnson Controls Global WorkPlace Solutions (GWS) is a leading provider of facilities, corporate real estate and energy management for many of the world's largest companies. The company creates business advantage for its customers through tailored solutions that optimize their real estate performance and employee productivity while reducing total occupancy costs. Its 17,000 employees have delivered over \$3 billion in savings for its customers over the last 10 years and ensures the business continuity for the 1.8 billion square feet of real estate that the company manages in more than 75 countries.

About Global WorkPlace Innovation

Global WorkPlace Innovation (GWi) is the research and development programme of Global WorkPlace Solutions and aims to drive innovation and thought leadership in workplace solutions, globally; support customers' needs and deliver advanced solutions. GWi also aims to challenge the status quo, leading change and delivering added value through innovation excellence.

About Kristensen Consulting

Kristensen Consulting [KC] is a research-based consultancy that provides guidance on collaborative strategies and effective, reliable collaborative infrastructures and work practices that improve the productivity of teams involved in innovation, collaborative problem solving and other knowledge intensive tasks. The company serves an international client base in Norway, UK and continental Europe.

About the Authors

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Marie has been Director of Global WorkPlace Innovation for Johnson Controls since 2004. She is an expert in the field of Workplace Innovation. Marie is leading around 15 annual projects and applied research consulting initiatives to successful completion and disseminating the findings both internally across the global business and externally through marketing and communication activities. She has built unique networking relationships with corporate customers at an executive level (CEO/COO/SVP/VP/ Director of CRE/FM/WP/HR) and actively engages with corporate clients through Applied Research Consulting projects. A regular speaker to the media, she combines her expertise and corporate experience to transfer knowledge to the audience and the wider community. She is an active member of CoreNet;, IFMA, Property EU, Stars, Strathmore Who is Who, and the Continental Broadcast Network.

Dr. Kjetil Kristensen

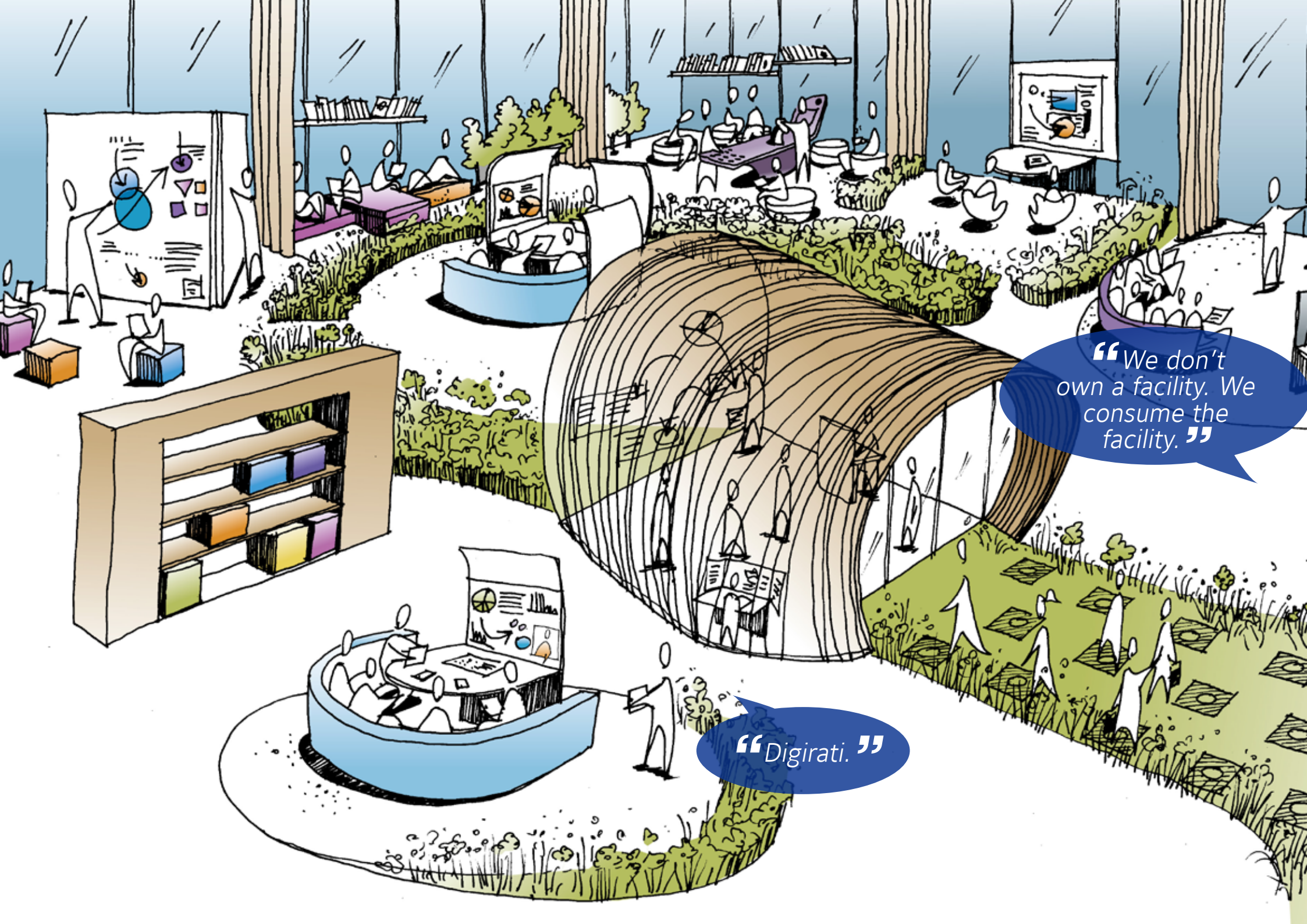
Dr. Kjetil Kristensen has extensive experience from management consulting and research in the area of smart ways of working, collaboration barrier analysis and advanced diagnostics, collaborative strategies, new work & workplace concepts, productivity and innovation.

He holds graduate degrees in Collaborative Engineering Design (PhD) and Mechanical Engineering (siv.ing.) from the Norwegian University of Science and Technology (NTNU) and has been a Visiting Researcher at Stanford University. He frequently speaks and publishes internationally on a broad range of topics related to collaborative innovation, collaborative strategies and collaborative performance assessment.

Kristensen is the Adjunct Associate Professor in Collaborative Engineering at the Norwegian University of Science and Technology.

Illustrators

Marie Emilie Sonnois & Creative Connections



“We don't own a facility. We consume the facility.”

“Digirati.”



Executive Summary

“Digirati” organisations: They have the digital maturity not only to build digital innovations, but also to drive enterprise-wide transformation. They truly understand how to drive value with digital transformation. They combine a transformative vision, careful governance and engagement, with sufficient investment in new opportunities. Cap Gemini, 2015, The Digital Advantage.



Executive Summary

In this report, we describe a day in the life of Nina, a digirati, an entrepreneur, a working parent, an artist, living and working in 2040. Through decoding what a typical day could look like, we are presenting how her working life is articulated around her family and leisure activities to meet her radical working patterns.

Our 2040 scenario is based around the following assumptions:

- **Her working environment is spread across a geographical area:** from the hive in her home, to her eco campus in the city and other working hubs she has access to
- **The city is a playing ground:** sports activities, entertainment, leisure, health & wellness institutes. Everything is available less than 20km away from home
- **The Campus is her place of work:** a working ground, a playing ground, a socializing ground, a leisure ground
- **Commuting is not a necessity unless she has to meet people face to face:** the majority of her working time is spent in front of her device(s) of choice connecting to others virtually
- **Collaboration can happen virtually or face to face** in a smart workplace or in a high performance collaboration hub
- **The place of technology is crucial in the world of 2040:** escape hubs are available to be cut off from technology (Faraday Bistro) and sophisticated applications are available to cut off all technology activities at the touch of a finger
- **Radical working patterns are the norm:** there is no limit to how long or how little she can work, as long as the work is done. Nina has a Flexwork Contract
- **Projects are exclusively carried out as a team of carefully selected subject matter experts:** tasks are shared amongst a team of consultants and experts and co-managed amongst the team.

Executive Summary

Corporate organizations are still considering the workplace as delivering a strong identity and more than ever as a marketing weapon, creating and sustaining their corporate identity. The intensity of performance level improvements increased significantly over the past ten years, accelerating the pace of work through the combined power of technology and personalized, choice-based software solutions.

The presence of technology in every aspect of our life in 2040 is predominating our way of living. The workplace of 2040 is far more agile, the presence of technology is ultra predominant and human beings are highly reliant on it. Yet the technology is “shy”, not intrusive, transparent, and highly reliable – no failure is neither, not a possibility nor an option:

- The home (the Hive) is a hyper connected and adaptive, responsive to the environment and its users, supporting multiple requirements simultaneously
- Complex software applications will suggest to users what they should do to maximise performance, not miss any important deadlines, and make sure she allocates enough time for important tasks that are not necessarily urgent
- End user services are autonomous, proactive and designed around enhancing the user experience
- In an ubiquitously networked world, true offline time is both a luxury and a necessity. Being physically present is perceived as more authentic, a privilege
- Adaptive white noise technology makes it possible to have a first rate telepresence session in an open environment
- The whole DIY movement is experiencing a tremendous boost – people are literally building their own products, bought through their smartphones using mobile web applications, and printed on demand
- Lower costs of energy and unmanned vehicles in combination with high costs of owning your own vehicle, plus high parking costs in densely populated megacities, benefits new sharing regimes.

In the context of the new world of work in 2040, we are contemplating a new world of work in an Eco Campus:

- **CHOICE:** deciding where and how we want to work
- **ADAPTABILITY:** adapting our working pattern to meet private needs and family constraints
- **WORK:** entrepreneurship is the norm
- **LOCATION:** deciding who we work with and how
- **WORKPLACE:** access to “Trophy Workplaces” so going to the “office” is a luxury, a reward
- **SERVICES:** offering real time services, catering to peak demands
- **WELLNESS:** privileging wellness over work
- **NETWORK:** reliance on an extremely wide network of experts to carry out our work

Executive Summary

While Corporate Soldiers still remain major actors in organisations, we are seeing a significant rise of entrepreneurial behaviours, transforming employees into a new breed of workers focused on achieving great results through their work activities as well as achieving wellbeing in their private life. Going to “work” is therefore accessible through a complex model of locations, spread across an Eco Campus, accessible less than 20 miles away from home:

@ HIVE (Meet you there) – “Soft and sweet” is our first thought of the day. We love waking up at home and not have to cope with extensive travel like we have in the past. Travel is a luxury in 2040! The focus on health & wellness has been a major shift for our society and focus on exclusive locally based services and solutions is now the norm.

@ pHIVE: Personal Hive (Take you there) – The notion of lost time is a thing of the past. In 2040, smart technology services that enable you to keep a high-performance workflow throughout a day and staying productive as you move across different contexts and situations, imply that being performance-driven is a choice, not an imperative. The good thing is that it is all up to you. The bad thing is that it is all up to you.

@ ECO CAMPUS: co working places (Empower you there) – A solid combination of mostly desirable futuristic trends in a highly networked, campus-based network. More like a coworking environment than a workplace, the Eco Campus is the place rather than a space: we meet and collaborate from there at least once per week. Located in the main urban hub, it attracts Entrepreneurs and Specialists from all horizons.

@ FARADAY: The “Faraday Bistro” (Relax with others there) –A place to escape from the business and production-oriented environments normal workplaces offer. The intensive knowledge based economy of 2040 is exhausting, draining your energy faster than ever before. AI solutions allows Digiratis to transfer some load to Software based Personal Assistant, but it feels great to escape the buzz of 2040 life in a Faraday Bistro.

@ WARP WORKSPACE: Public Transport (Get you there) – While transport used to be exhausting, sometimes unsafe and overcrowded, in 2040 it is the opposite: public transports are pleasant environments, extremely secure and a place you spend the minimum of time to go from A to B.

As a consequence, organizations will need to adapt to the changing demands, aspirations and expectations of end users and our industry of Facilities Management and Corporate Real Estate to the demands of both end users and customers:

- **Adapt** our service delivery to fit, proactively and in real time, the increasingly complex requirements of our end users, our Digiratis
- **Redefine** our real estate model to meet the demand of end users wherever they are and at any given time of the day
- **Redesign** our working environments (single facilities, shared facilities, local amenities, service delivery, support services...) to meet increasing real time user demands
- **Digitize** our service delivery for simplicity – and provide human centric support services to enhance the performance of end users

The world in 2040 is all about:

- **CHOICE**
- **FLUIDITY**
- **IDENTITY**
- **CARE**
- **EXPERIENCE**
- **INTUITIVENESS**

By 2040, we will not own facilities, we will consume them. Our Real Estate portfolio will resemble a network of workplaces, and our workplace will be a coworking environment spread across an eco campus. The Smart Workplace 2040 anticipates important changes to our working environment. A concerted response from CREM and FM, Workplace and HR functions will help to ensure that businesses are fully prepared for the changes ahead.

Recommendations

HUMAN RESOURCES

- + **Dismantling the fixed hour 'office hours' model** and shifting towards more flexible working contracts to increase the mobility of employees and entrepreneurs and support an emerging range of unconventional working patterns. For example, Nina is contracted to work 1,200 hours per year, her partner works 900 hours, how and when is entirely their choice so long as the work is done.

ORGANIZATIONAL STRUCTURES

- + **Management competencies will shift radically with a highly dispersed team** across a wide geographical area.

TECHNOLOGY

- + **Providing adaptable technology to meet changing needs** – including longer term packaged solutions and shorter term solutions created on demand to meet employees' adaptability and the market's innovations.

HEALTH

- + **Providing "wellness" services** in the workplace (Eco Campus) to sustain the wellbeing of employees and avoid technological burn out.

FACILITIES MANAGEMENT

- + **Focusing work spaces on end users' needs** and constantly evolving demands – technology based service solutions will need to be developed.

REAL ESTATE

- + **Considering a dispersed real estate model:** with mixed facilities and multi-purpose environments to allow fast response to changes in user needs and to meet new customer utilization patterns and demands.

WORKPLACE

- + **Designing social, cohesive and adaptive working environments**, empowering users and teams across different work contexts and collaboration modes.
- + **Developing intuitive interfaces** to improve the user experience among highly connected users.

SERVICE DELIVERY

- + **Responding in real time to user demand by** integrating invisible 'shy' technologies in facilities: to track user activities and record user experiences without the need for intrusive technologies within the environment.

what our future is

we maybe worse off?

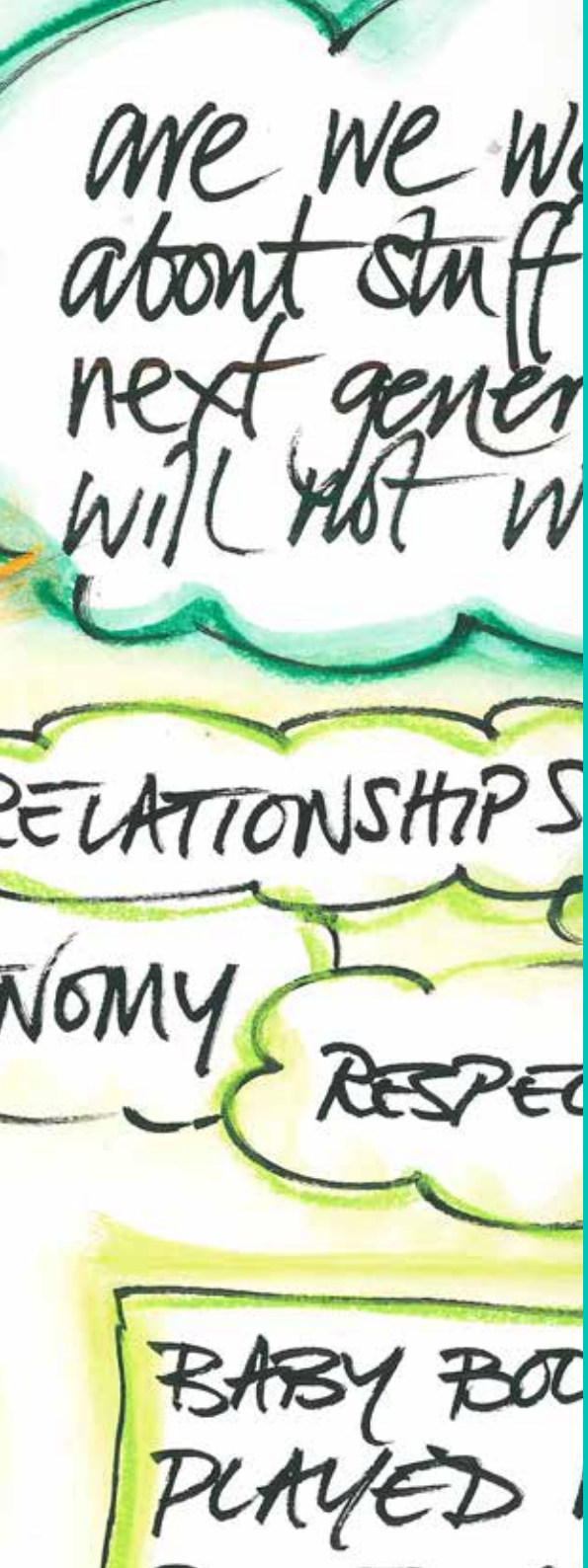
entering a
TRANSITION
AGE

R
AUTO

every former
heartache?

no surprises?

husband
not always
at home



Introduction & Methodology

In 2009, in the project "The Smart Workplace in 2030", we predicted that in two decades, technology would have transformed our ways of working.

What has happened since 2009? Steve Jobs announced and unveiled the first iPad on January 27, 2010... Wearable computing... BYOD... Google Glass... Smart watches... Enterprise apps... Big Data... Robots... And the list goes on... We said "Goodbye" to many trends and we said "Hello" to major disruptors and developments.

Revisiting the "A Day in the Life of a Smart Worker in 2030" scenario, in this report we map the actual versus projected development in key technology areas, and use this in combination with consolidated input from expert workshops and a broader study of trends to develop and present an updated scenario describing a day in the life of a Digirati in 2040.

"TAKING THE BEST ADVANTAGE OF THE PRESENCE"

"CELEBRATING WHAT YOU CANNOT DO VIRTUALLY"

"THE ABILITY TO SELECTIVELY KNOW ABOUT THINGS WHICH ARE OF VALUE TO YOU"

Introduction – The Early Research

This proposal is based on previous Johnson Controls research on 'The Technoworkplace of the Future', which contemplates a vision of what the workplace of the future will look like and how it will affect employees' everyday life. Revisiting the 2030 scenario, we propose a new scenario set in 2040 reviewed and challenged in workshops and based on a broader study of trends including, but not limited to JC "Roadmapping Future Trends", to develop and present a thought provoking scenario describing a day in the life of Nina in 2040.

As predicted in the 2030 scenario, technology plays and will continue to play a major role in enabling, supporting and enhancing our new ways of working and collaborating.

Technology coupled with innovative work practices can be a real differentiator and source of competitive advantage for companies that understand the potential and seize the opportunity.

A key element in the proposed exploration is the interface between technology and other workplace factors, and specifically how we can describe the interplay between technology and other factors in an engaging, easy to understand format. While technology has evolved according to expectations in some areas, technology has, in other areas, indeed been evolving more rapidly than many experts had predicted. Many of these trends are potentially disruptive, and will likely have a profound effect on business performance, workplace strategies and knowledge worker productivity.

This report contains an exploration of the following themes:

- How will our world of work be transformed through technologies and what would be the impact of future technologies on the shape and form of our workplace in 2040, and our ways of working and on employees' productivity and creativity?
- How could we overcome the twin challenges of the technologically enabled future and ensuring that your ICT investment improves your bottom line?
- How could today's technologies and the technologies of the future improve the productivity and creativity of our knowledge workers?
- What would our workplace look like by 2040 with the technological transformation of our working environment and our ways of working?
- How should property occupiers and owners, facility managers and service providers respond to these changes?

Methodology

- It was fundamental to gain both an understanding from the industry about the workplace of the future, and a deep insight into the collective knowledge and intelligence of experts in the field and across the industry. This research project is based around two key principles:

Qualitative approach:

- a detailed analysis of mega, micro and macro trends, developments and disruptors as far as 2050 (using our roadmap)
- a series of strategic workshops with experts from across the three main regions (EMEA, Asia-Pacific and Americas)

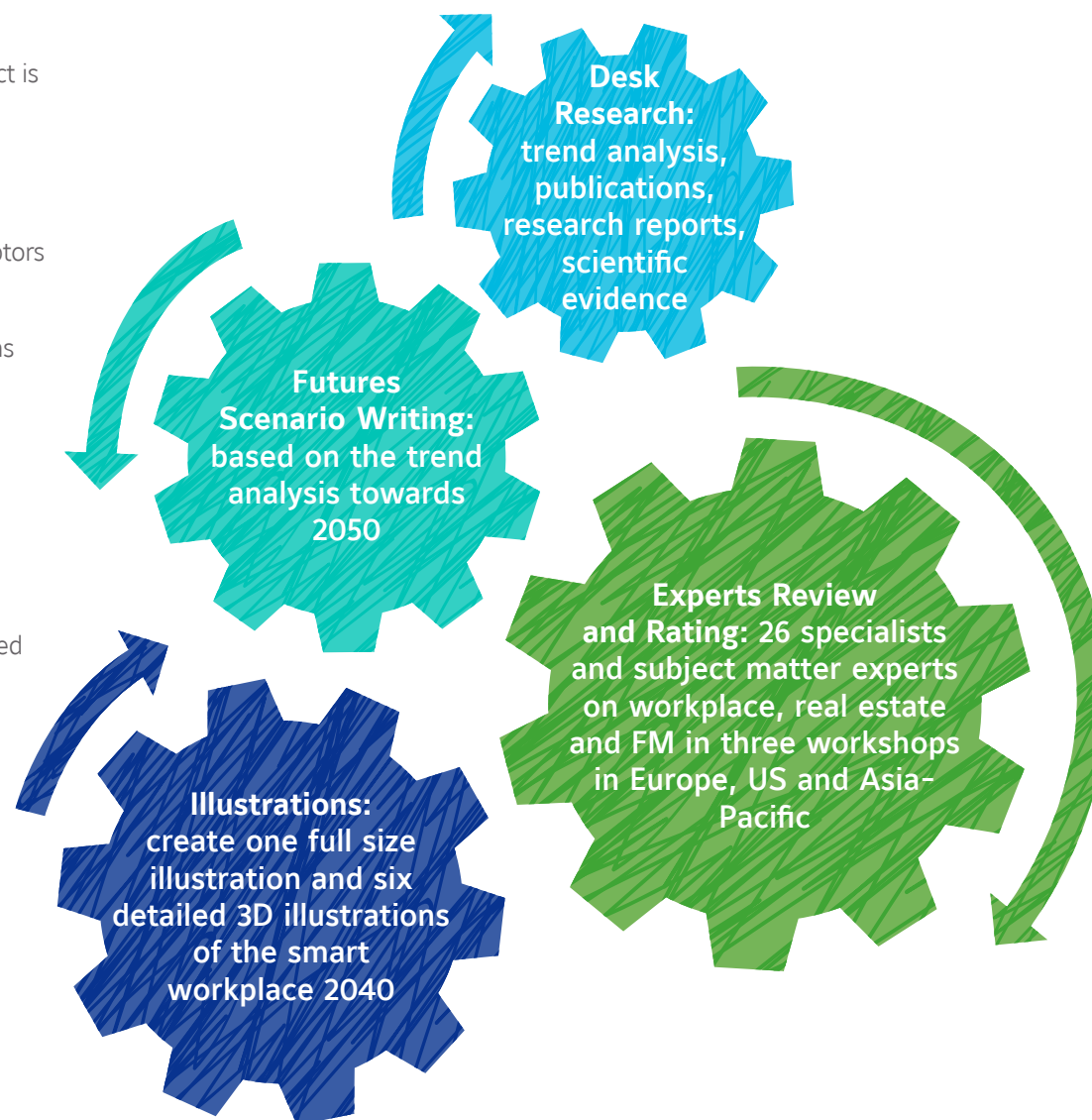
Quantitative approach:

- an on-line questionnaire to Experts
- a data analysis and rating

Using our future thinking and scenario building methodologies developed and refined over the last 5 years, we methodically created a thought provoking scenario set in 2040 and detailing a day in the life of Nina, a 40 year old entrepreneur.

Our approach:

- Desk research and industry insight
- Scenario building and writing
- Expert review and rating
- Scenario rewriting
- Illustrations to visualise the workplace of the future



Collaborative
decision making
facilities

FM
Service
Card

facial
recognition

BOXX

NO DECISIONS
NO SURPRISES



AUTO MINUTE
RECORDING

the technology is in our pocket

WE CAN MEET
IN THE
CAFE

FIRST
DECISION
SHE HAS HAD
TO MAKE?



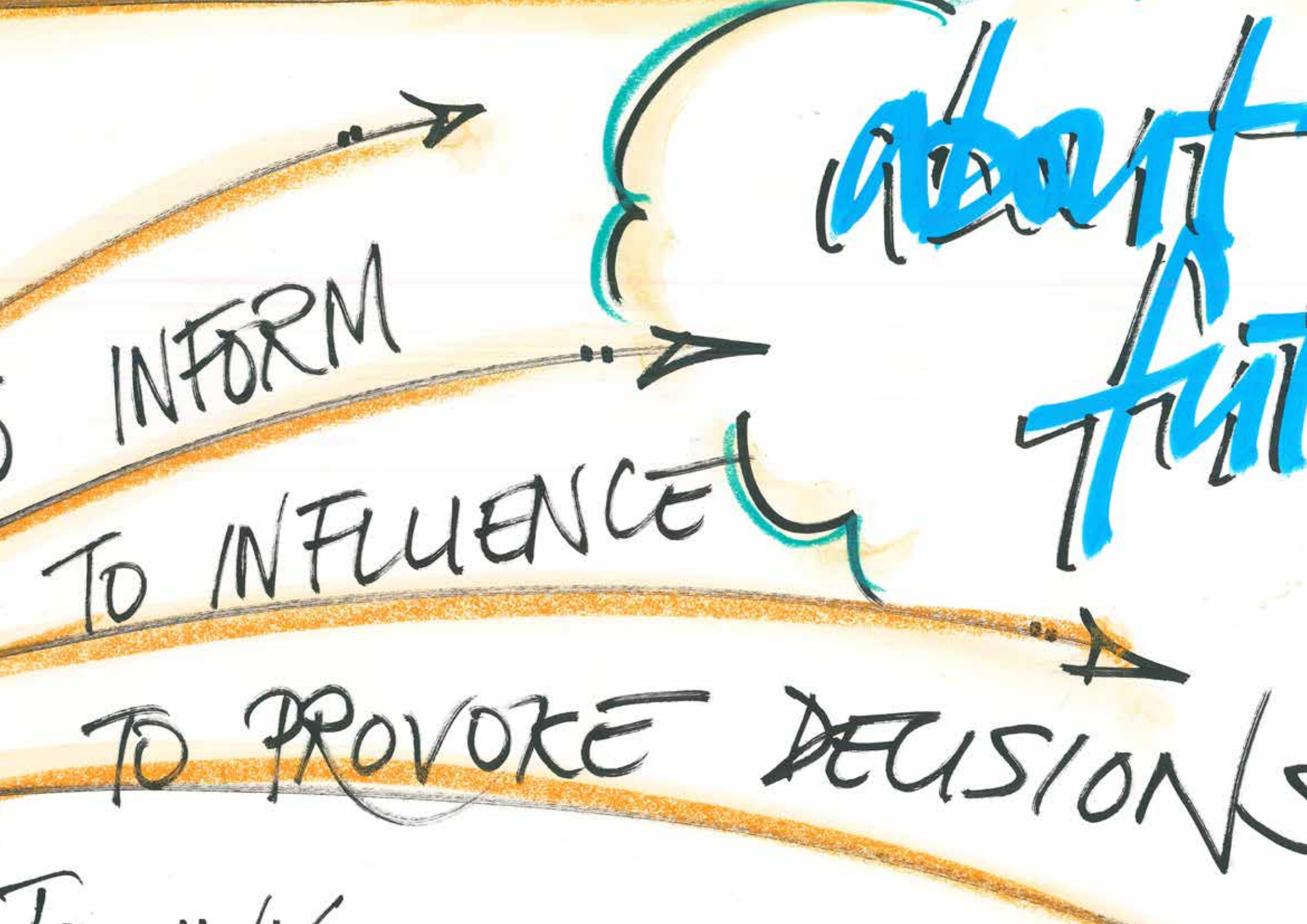
Experts who reviewed and challenged the scenario

A group of 26 industry and academic thought leaders reviewed and challenged the research, which was led by Dr. Marie Puybaraud, Director of Global WorkPlace Innovation at GWS. The experts collaborated during a series of three workshops to share their opinions and recommendations on the scenarios covered by the research.

The scenario Smart Workplace 2040 was reviewed and challenged by Experts around the world in three workshops in the US, Europe and Asia-Pacific, and made major and improve it.

We would like to acknowledge their crucial and active participation to this research. The Expert workshops generated comprehensive input that has been integrated into the final scenario.

ANDREW TU'INUKUAFE, Creative Spaces, NZ
CHRIS ALCOCK, SpaceLogic, Australia
NIGEL RYE, Nigel Rye Consulting, NZ
CAROLINE BOYCE, NAB, Australia
AGUSTIN CHEVEZ, Senior Researcher, Hassell, Australia
ANDREW JOHN MARSHALL, Johnson Controls, Singapore
KATE NORTH, VP Business Development, e-Work, US
KATE LISTER, President, Global Workplace Analytics, US
TOM HARNISH, Chief Scientist, Global Workplace Analytics, US
JAN PETER KASTELEIN, YNNO, The Netherlands
CHRIS KANE, Workplace Strategy Navigator and Advisor and ex BBC, UK
NIGEL OSELAND, Workplace Unlimited, UK
SIMON RUSSELL, Russell Media, UK
NEIL USHER, Sky, UK
PAUL BARTLETT, SBS Solutions & President of the Productivity Network, UK
PETER MCLENNAN, UCL, UK
EUAN SEMPLE, Expert on Social Media, UK
ANNE MARIE MCEWAN, The Smart Work Company, UK/France
THIERRY DE BAILLON, Transitive Society, France
TIM OLDMAN, Leesman Index, UK
MELANIE WOOLCOTT, Orbit Architects, UK
OLIVER BAXTER, Herman Miller, UK
ARNOLD CRAIG LEVIN, Smith Group JJR, US
DANIEL B JOHNSON, Accenture, US
LISANNE SCHLOSS, Independent Workplace Strategist, US
JO MONAGHAN, BNZ, NZ





The World in 2040

Although old world problems persist even in this age of disruption, the world of 2040 will be different from the world we know today. Society will be searching for more authenticity in the way they live and behave in a world highly affected by political and economical turmoils. The rise of terrorism, often hidden behind major cyber attacks, targeted chaotic events and rising insecurity in several regions around the world, harsh economic cycles and political battles have affected our way of living. The society had to adapt to uncertainty and unprecedented catastrophic events, including natural disasters resulting from climate change.



The World in 2040

As a consequence in 2040, we find refuge in our protected and safe community and reach out to controlled urban zones. Technological solutions allows our government to protect society through invisible technologies spread around our environment.

On the other hand, major developments have occurred in the last 25 years and we live in a safer local environment, more environmentally friendly and where health & wellness is at the core of our lives. The core of City centres are car free zones, public transport is sophisticated and reliable, public infrastructures are safer, faster and cheaper.

What is the future like in 2040?

- **The search for authenticity and humanity** are core to our ways of living: back to basics, back to our roots, like a renaissance of our society
- **The community is our world:** we live and grow amongst a community, sharing and giving, being more participative
- **Social ties are used as a driving engine:** we rely on our network to work and live
- **Wellness and wellbeing:** at the core of our life, more private time is dedicated to healthy activities
- **Technology plays an important role in our life:** a major part of our day to day activities are linked to a technology innovation

The world of work is greatly affected by the unprecedented evolution of our world prior to 2040. The notion of work has been redefined by:

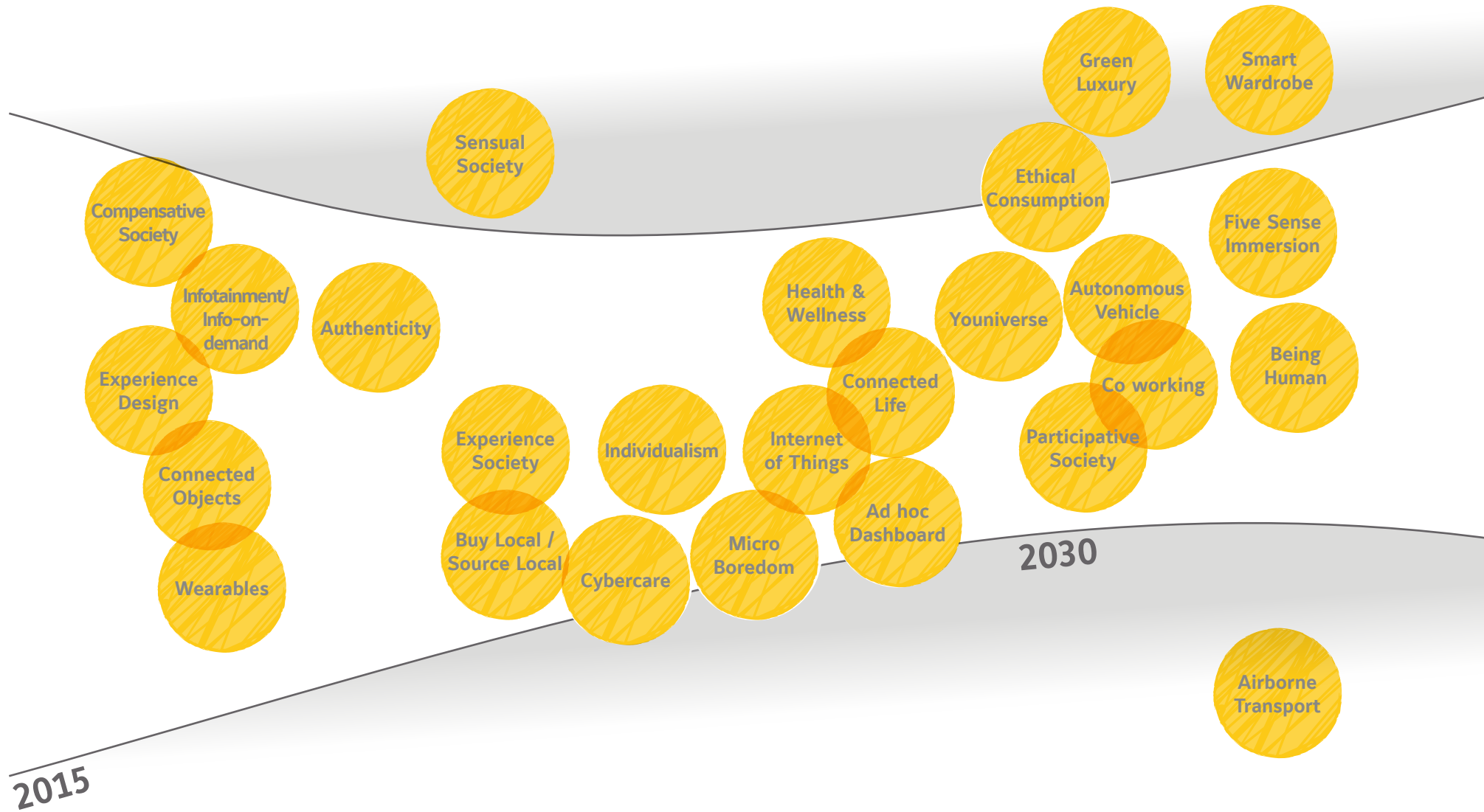
- An evolution towards **radical working patterns**
- **Choice** being at the core of the model of way we work: going to the office is a reward, a luxury
- **Trophy workplaces** are offered to users who are searching for highly experiential environments to meet and network with other individuals
- **Co working** is the norm and an essential solution to drive enterprise competitiveness
- **Personal time** taken during the working day is a necessity, not a privilege
- Enterprises focus on **collaboration** as a major driver of performance and collaboration is a core competency for every employee
- **Entrepreneurship** is a common form of status for employees who don't hesitate to prioritize work in accordance to the quality of the team they work for and the values of the company
- **Human services** is a premium offering: support services are duplicated to enhance user experience
- **Home** is the main place of work and a safe heaven for the majority of the workforce, while technology enables access to a wide network of skilled entrepreneurs
- **Public infrastructures allow** access to a broad range of services to maintain a high quality of life, mixing entertainment and leisure in various shapes and forms

Parallel of three worlds – 1990 vs 2015 vs 2040

1990	2015	2040	impact in 2040
Conventional Working Patterns	Flexible Working Patterns	Radical Working Patterns	Choice based restructured patterns of work – Personal choice dictates working patterns
Office	Serviced Workplace	Co working	Access to wide range of co working facilities less than 20 miles away from home
Office	Headquarters	Campus	Mixed facilities in one single location creating a community environment
Office as an imperative	Workplace as a service	Trophy Workplace as a reward	Access to a workplace is a luxury, a reward and provides outstanding experience for users
Meeting	Collaborating	Co working	The essence of work is based around cooperation amongst a participative society
Employee for Life	Contract Worker or Freelancer	Entrepreneur	The majority of the workforce are self employed, like entrepreneurs, and corporate soldiers are still present in organizations
Dedicated	Shared	Multipurpose	All facilities are multipurpose, mixing different activities (work, leisure, entertainment, sport, medical centres...)
Health	Wellness & Well-being	Bio-Wellness	Wellness is a multidimensional state of being, describing positive health, exemplified by quality of life and sense of wellbeing. Wellness is at the core of our way of living, moving from wearable to implantable.
Research Lab	Shared Lab	Virtual Lab	Research & Development functions are now enabled via technologies and spending a majority of time in the lab is in the past. Researchers are also highly mobile workers
Car	Hybrid Car	Autonomous Vehicles	Cars are more secure and safe to drive, with autonomous functionalities (driverless).
Facilities Management	Integrated Service Delivery	Experienced based Service Delivery	Service delivery is people centric and technology focused to enhance user experience

Trendscape: a tunnel of innovations

Major developments and disruptors shaping the world towards 2040



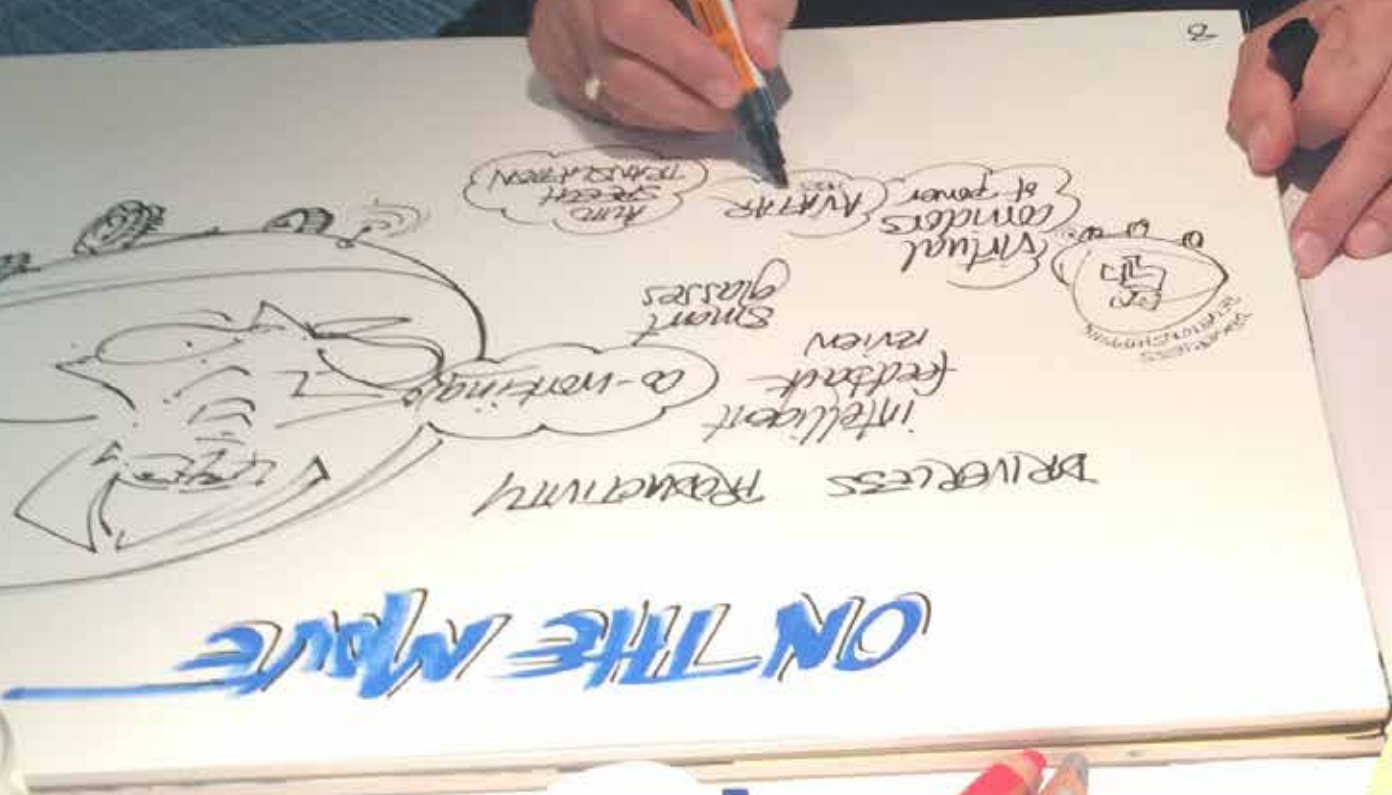


Rethinking the World of Work

Here and THEN: by 2040, the workplace of the future is emerging and embracing an array of innovations never expected before. From the rise of a compensative and experience society within an attention economy, demanding edutainment, cybercare, wellbeing, health, ethical values and searching for life harmony, participative societal trends and co working will be the norm. Focusing on the impact of emerging trends, this report will provide our industry with a glimpse of what to expect in the next 25 years and what will be the impact on the workplace by 2040.

The rate of change and added complexity in society and business structures are increasing the need for efficient consensus-based workplaces. The culture of entrepreneurship we will find in workplaces is a major indicator of change, especially among generations of new leaders forming the pool of brain power our organizations will rely on for future growth. Employees of 2040 were teenagers by 2015 and will be grown up adults by 2040, born Digital Natives and by 2040 Digiratis. According to McKinsey, the category of jobs involving complex "interactions" is growing quickly. These jobs typically require flexible workspaces for face-to-face contact in combination with advanced communication and collaboration technologies. When empowered, these workers – highly skilled knowledge workers critical to innovation, performance and growth – can raise their productivity significantly. Yet, the most valuable form of communication is still face-to-face before mobile and video conferencing while higher-performing teams seek more outside connections and rich experiences in their working environments. How will these developments change the way we work by 2040?

We are evolving in a "new" world where mastering collaboration and collectivism could create critical business advantages and boost performance of organizations. The turmoil of changes happening within our working environment is having a major impact on performance, and the future holds even more disruptive changes. The Johnson Controls Workplace Innovation Roadmap anticipates change and maps out future developments. Today we know that insight driven by big data and advanced workplace analytics will play a crucial role in guiding organizational decision making processes. A human centered workplace will be a priority, and will evolve into co working environments integrating more incubator-like concepts to boost entrepreneurship. But what would be the impact on the workplace? Will we still need to "go" to an office? Will the office survive the pace of change?



Social – It is all about **choice** by 2040. Our level of expectations will dictate offers and demands of service providers. The rise of the service economy will transform our way of living in a real time economy, constantly adapting to the expectations of users and customers in search of multiple, more extravagant experiences on a daily basis.

Space – the Workplace will need to reflect more **adaptability** in the way it is designed to support more mobility and collaboration. Our research suggests that many companies do not currently support collaborative working when compared to office workers' expectations: more time working in team spaces that have in-built collaborative technologies, an increased use of video conferencing, more use of dedicated collaboration rooms, and far less time spent at their desks or in traditional meeting rooms.

People – the Workforce will need to embrace a **dynamic entrepreneurial culture** to respond to and move with the market – a major key to the survival of organisations is how dynamic their human resources will be – following their markets and their customers in rapidly changing industries, while asking developing economies to ride a rising demographic tide (a potential shortage of about 38 to 40 million highly skilled workers by 2030 according to McKinsey).

Experience – Collaborative Working Environments must grow with the **increasing demand for engagement** at all levels of the organisations in a dispersed market. A study by the Massachusetts Institute of Technology into creating high-performance teams found that best performing and most creative teams “sought fresh perspectives constantly, from all other groups in (and some outside) the organisation”. Global companies must become places that allow pockets of extended entrepreneurship to flourish by introducing incubator like workplaces.

Technology – the workplace infrastructure must support **extensive collaborative tasks** and high levels of interaction through technologies. Increasing use of technology and the drive to productivity have raised demand for high-skill workers. According to the HBR, they greatly amplify our abilities to interact simultaneously with large number of people. Organisations who are not implementing a powerful technology platform will not survive in the future. “Open tunnels of collaboration” created between and amongst competitive businesses could become a powerful innovation platform for organisations.

Community – the **Networked Workforce** will be essential in the future to ensure market positioning and growth in competitive markets. A stronger reliance on the network will ensure continuous growth of organisations in new markets while maintaining strong positioning in existing ones, and enlisting social technology users to “crowdsource” product ideas and co-create new features.

Smart Workplace 2040



“It's my external relationships that create value.”

Smart WorkPlace 2040 illustrated

Taking into account our research findings and using our trend analysis to anticipate major transformations and developments, the world of work in 2040 can be imagined as a giant eco campus where multiple, intertwined locations of work are available within a smart city environment. We present in the following pages our illustrations of our Eco Campus and a series of mini scenarios of co workers in this environment.

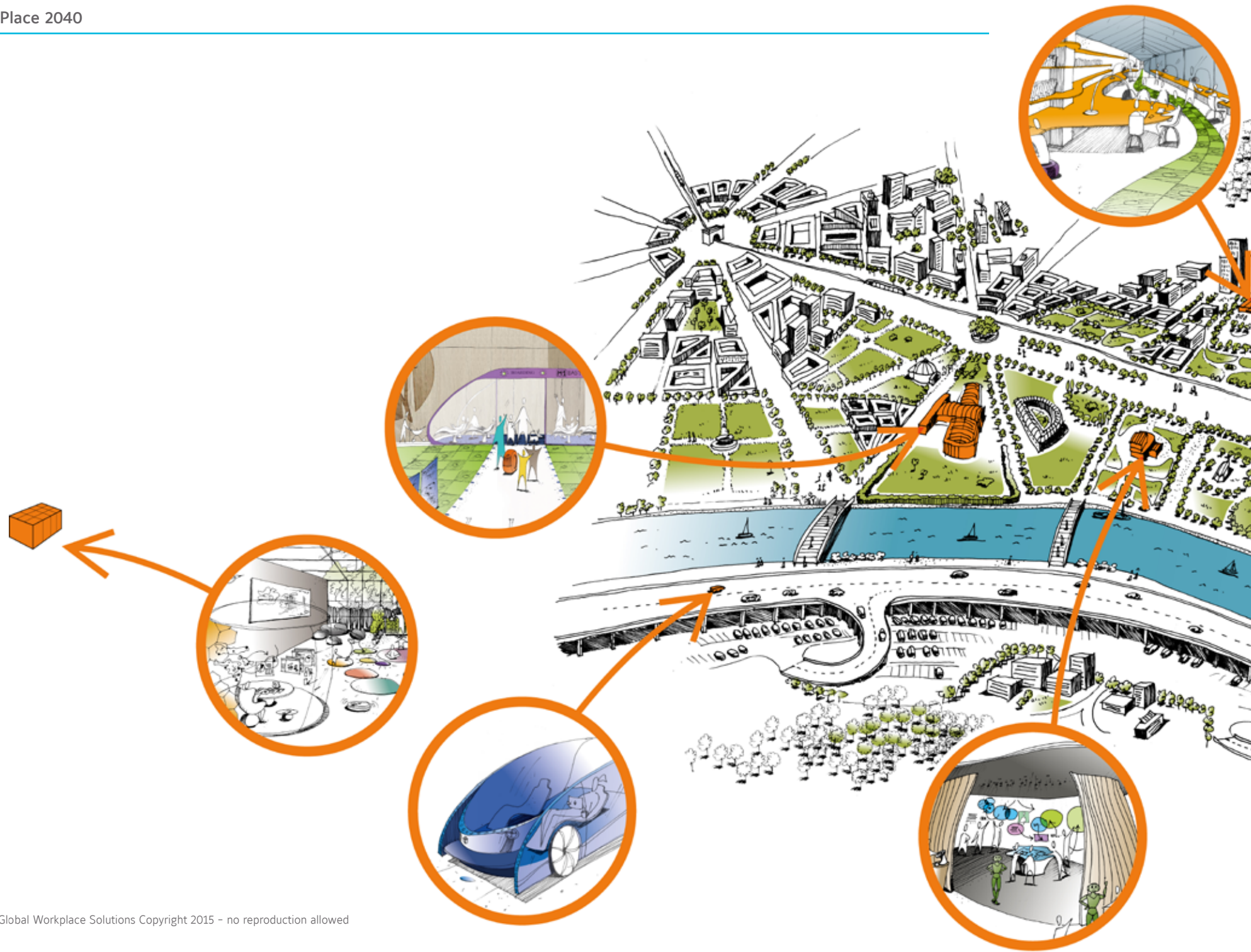
WARP
WORKSPACE

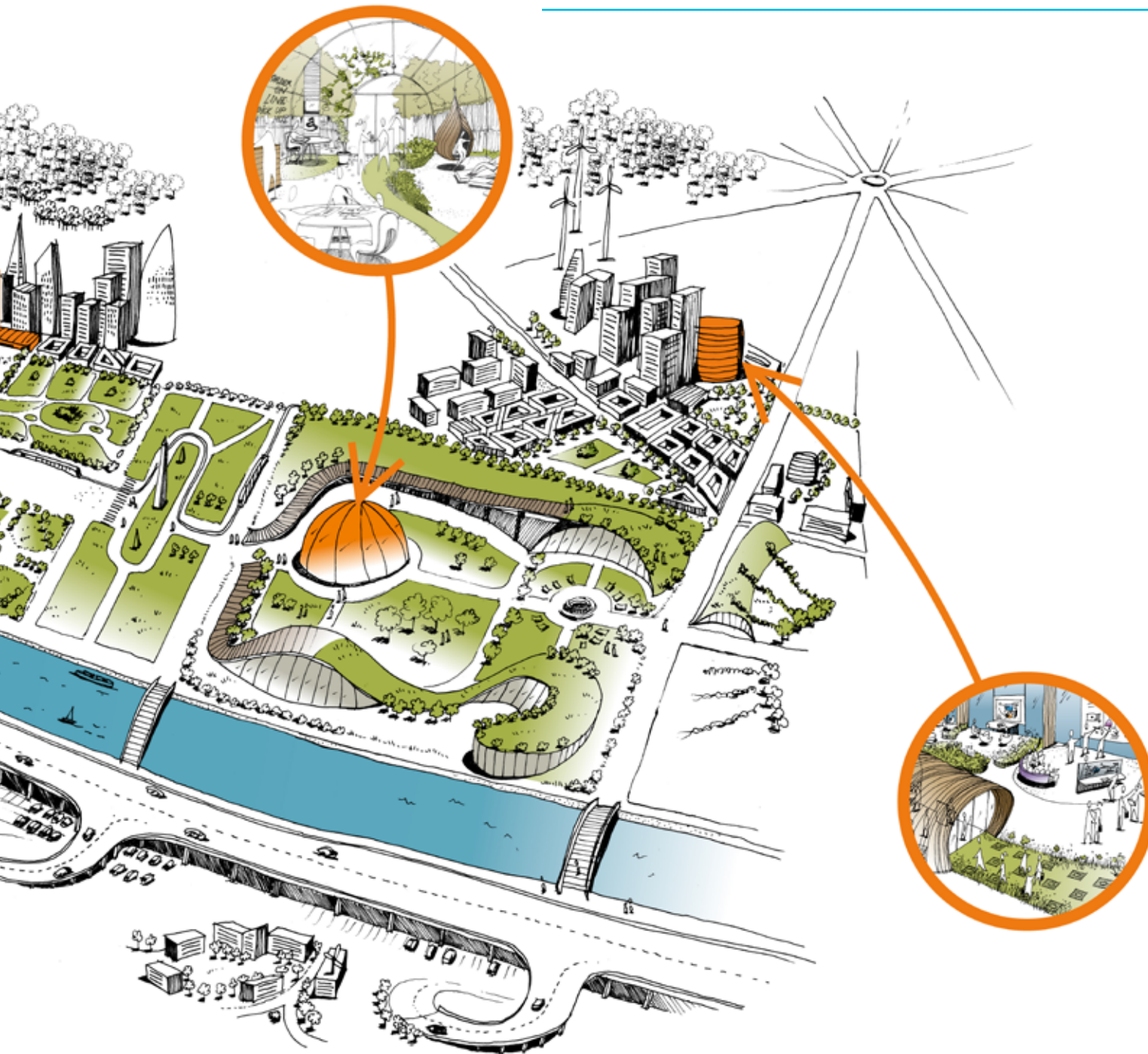
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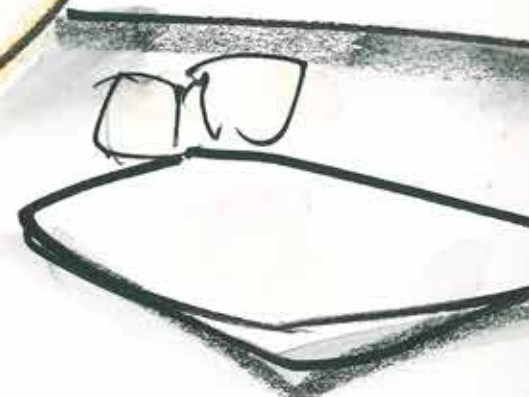
SPOT ON
1ST T TOO

I cultivate the relationships I CHOOSE making effective connections

IT'S MY EXTERNAL RELATIONSHIPS that create value

relationships
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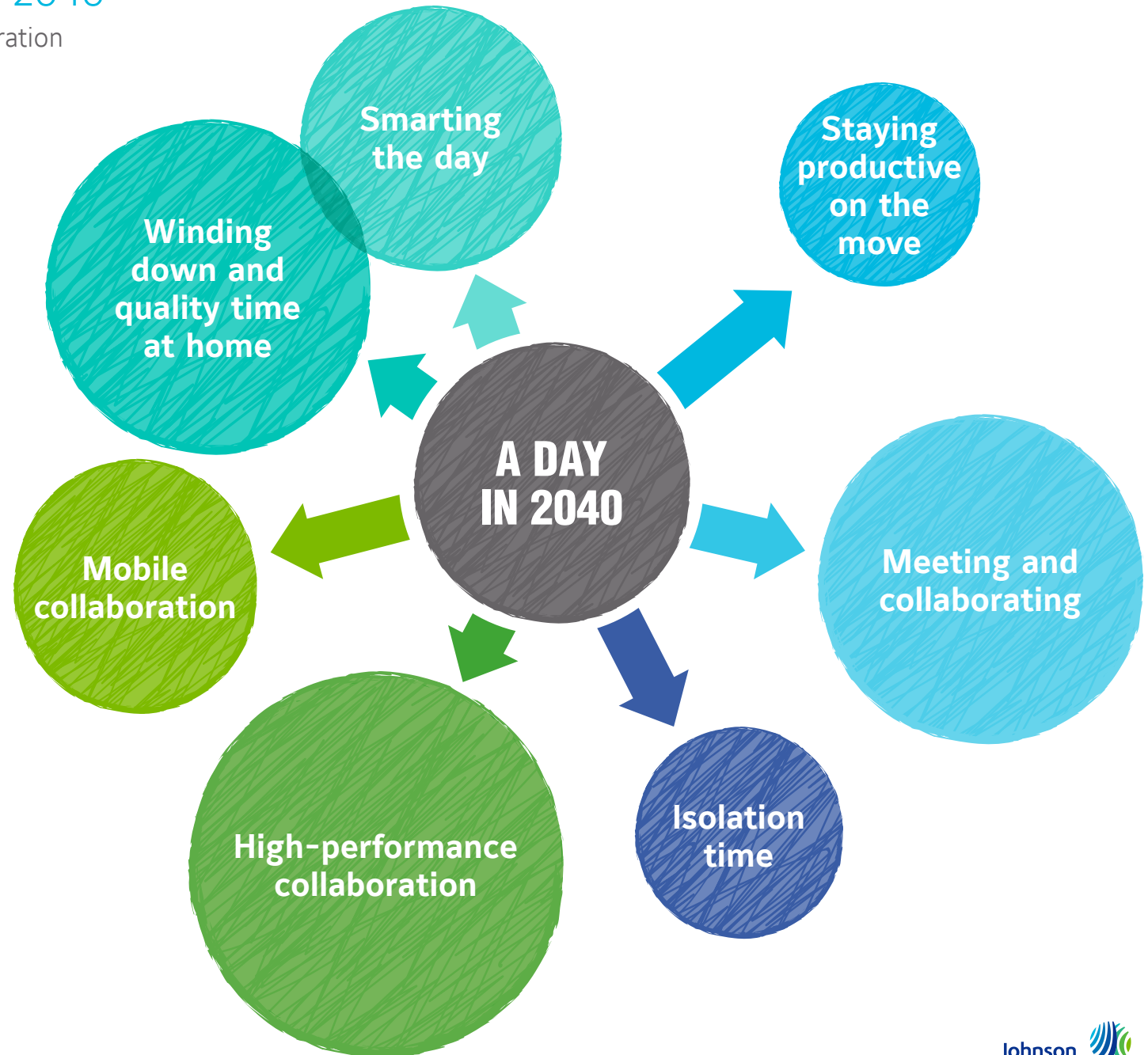
had interesting
create spaces



A day in the life of Nina in 2040

Dispersed, networked, focus on collaboration

Nina, our main character in the scenario, an entrepreneur and an artist, follows a very unconventional working pattern where it is all up to her to choose where and how she wants to work. Nina privileges working from her comfortable home environment, the Hive, and only when it is necessary reaches out to her local community to find refuge in dedicated working environments, either provided by her customer/employer, or in coworking hubs paid by the hour. Nina is a social animal, with a very active family and friend network. She focuses a lot on her health and wellbeing and does not hesitate to mix leisure activities into her unconventional working patterns as much as possible. A brilliant networker, she relies on the strong ties she has developed with her network of experts to develop unique projects and profitable yet flexible consulting opportunities.



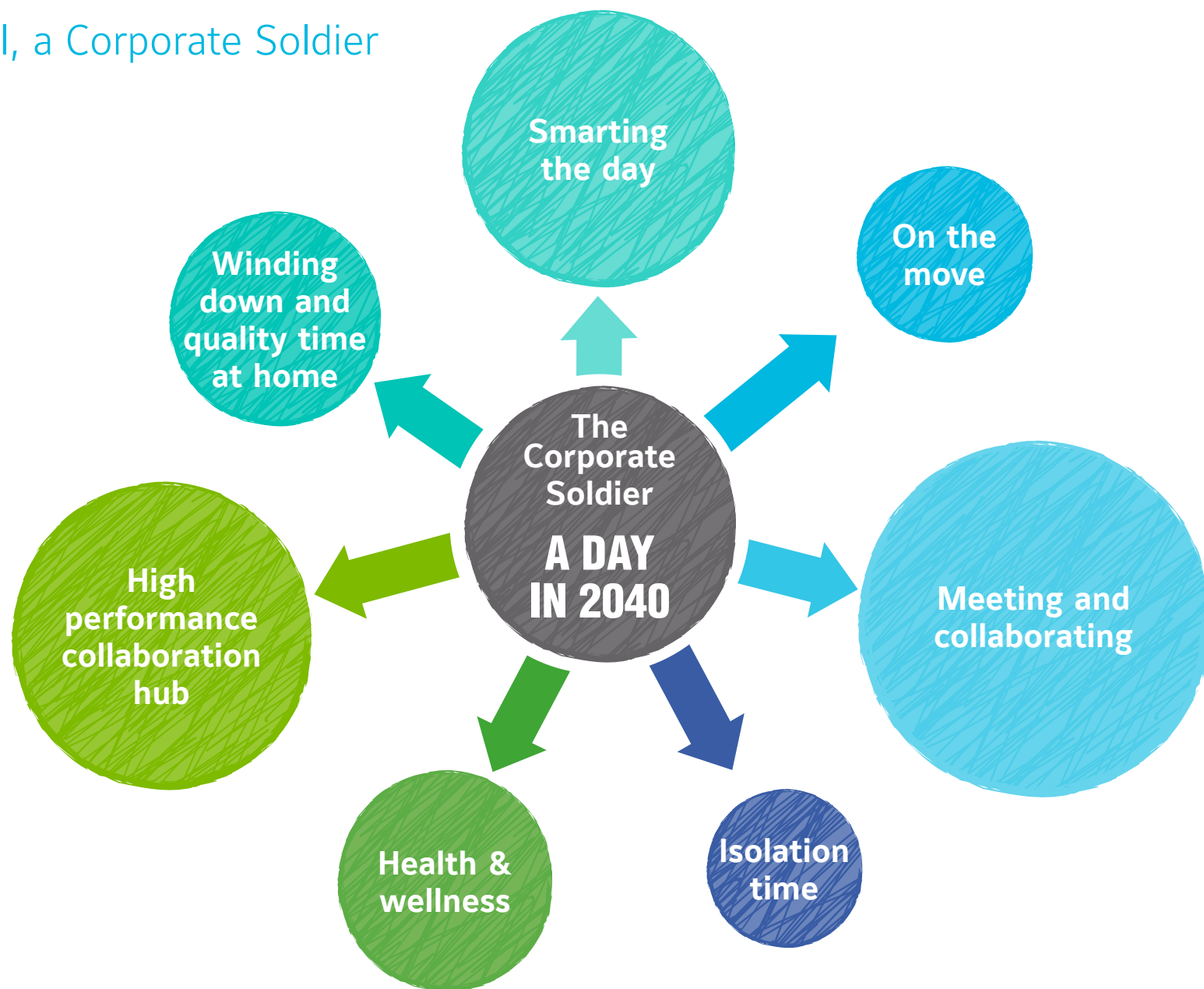
A day in the life of Paul, a Corporate Soldier

Paul is a Corporate Soldier, ambitious, a high achiever in his mid 40s. He privileges time spent with his team, collaborating and reaching out using his "Trophy Workplace" on the average three times per week, as is the case today.

The time spent at home early morning is dedicated to organizing and coordinating his day to achieve maximum productivity while he is working.

Throughout the day, a range of software applications allow Paul to maximize his performance and prioritize work tasks extremely proactively. Paul is also conscious of the impact of this heavy workload on his wellness and religiously keeps fit, whatever the circumstances. Fitness is a priority and he would not hesitate to take time off at the last minute for himself, and would also impose it to his collaborators to avoid Burn Out, the major cause of illness in 2040.

Moving from one task to another, working across three time zones at the same time, his preferred technology kit allows him to swiftly cope with it all, automatically rescheduling conflicts to be able to respond to last minute needs.



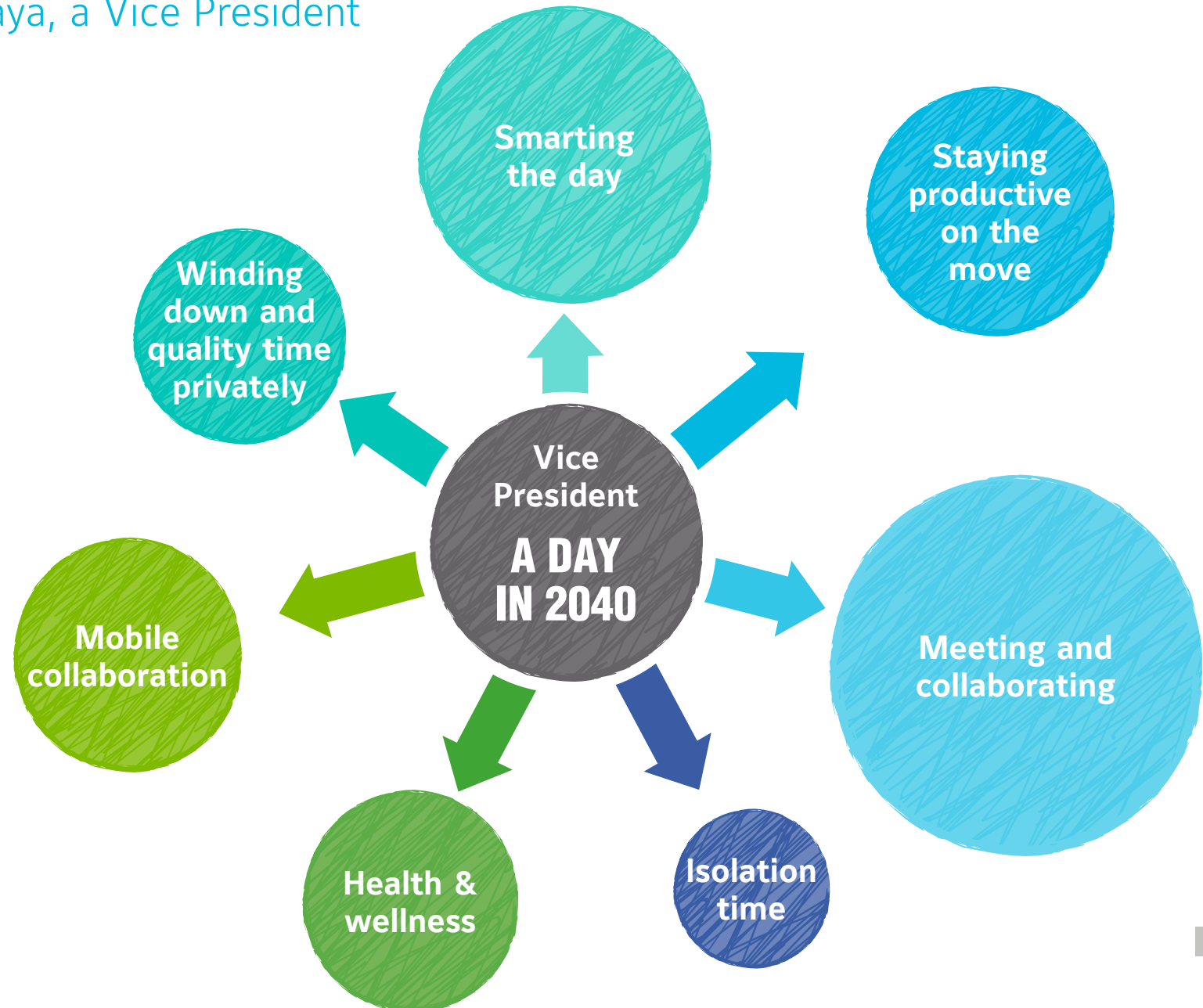
A day in the life of Anaya, a Vice President

Anaya is always “on the move”, physically or virtually. Working with a team of 250 people under her responsibility, today she decided to maximize her time at home to prepare for the day and schedule video conferencing meetings with her team in the Europe, US and Asia-Pacific.

The time Anaya spends in her autonomous vehicle is optimized to catch up with her executive assistant based in Iceland, and dealing with the typical decision and approval requests received overnight. When Anaya arrives in her Trophy Workplace, all her time is spent with people, either customers or members of her team, and almost never alone.

Throughout the day, she finds some time for herself and to look after her health, doing some shopping or just taking a step back from work – to maximize focus and authenticity when interacting with others.

As she rarely arrive home early, the city is a great place to catch up with friends before arriving home and to relax.



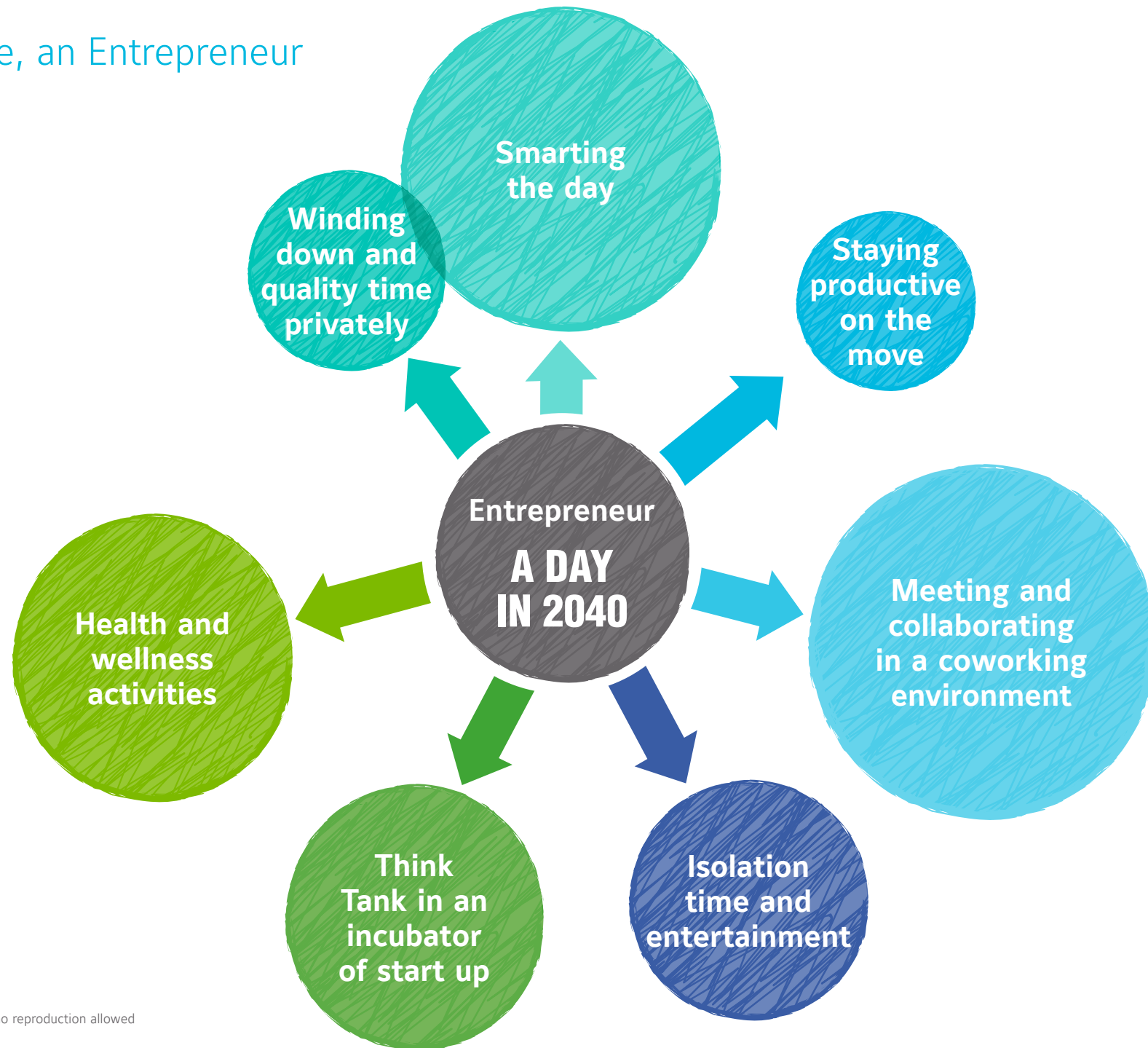
A day in the life of Kate, an Entrepreneur

Life as an entrepreneur requires the capability to manage a large network of people you may have never met face to face. This is the main "bread and butter" of Kate. She nurtures her network on a daily basis and gets 100% of her project work through network referrals.

Kate's pipeline of work is continuous, and on a daily basis she is accepting new projects, and rejecting and shifting other projects across her network. Going to a "workplace" is a reward for her. The co working environments she is a member of (she uses several) are all less than 10 miles away from her home, so she would always bump into someone she knows well.

Kate spends time at home to passionately look after her network, which is crucial socially as well as professionally.

On a normal day (if there is such a thing), Kate would get ready with her family, walk the dog to the park, take a delivery of grocery and network network network!



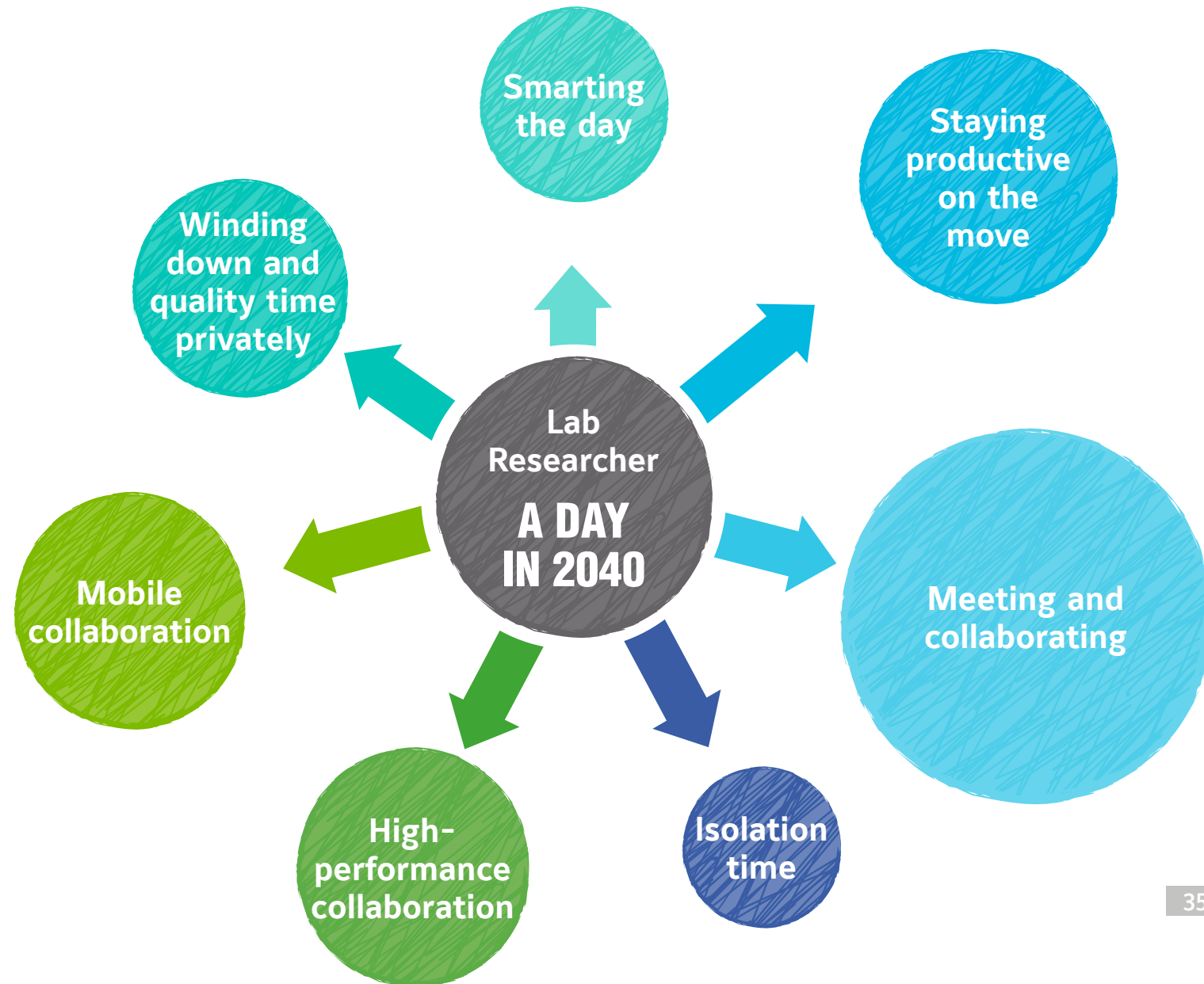
A day in the life of Max, a Lab Researcher

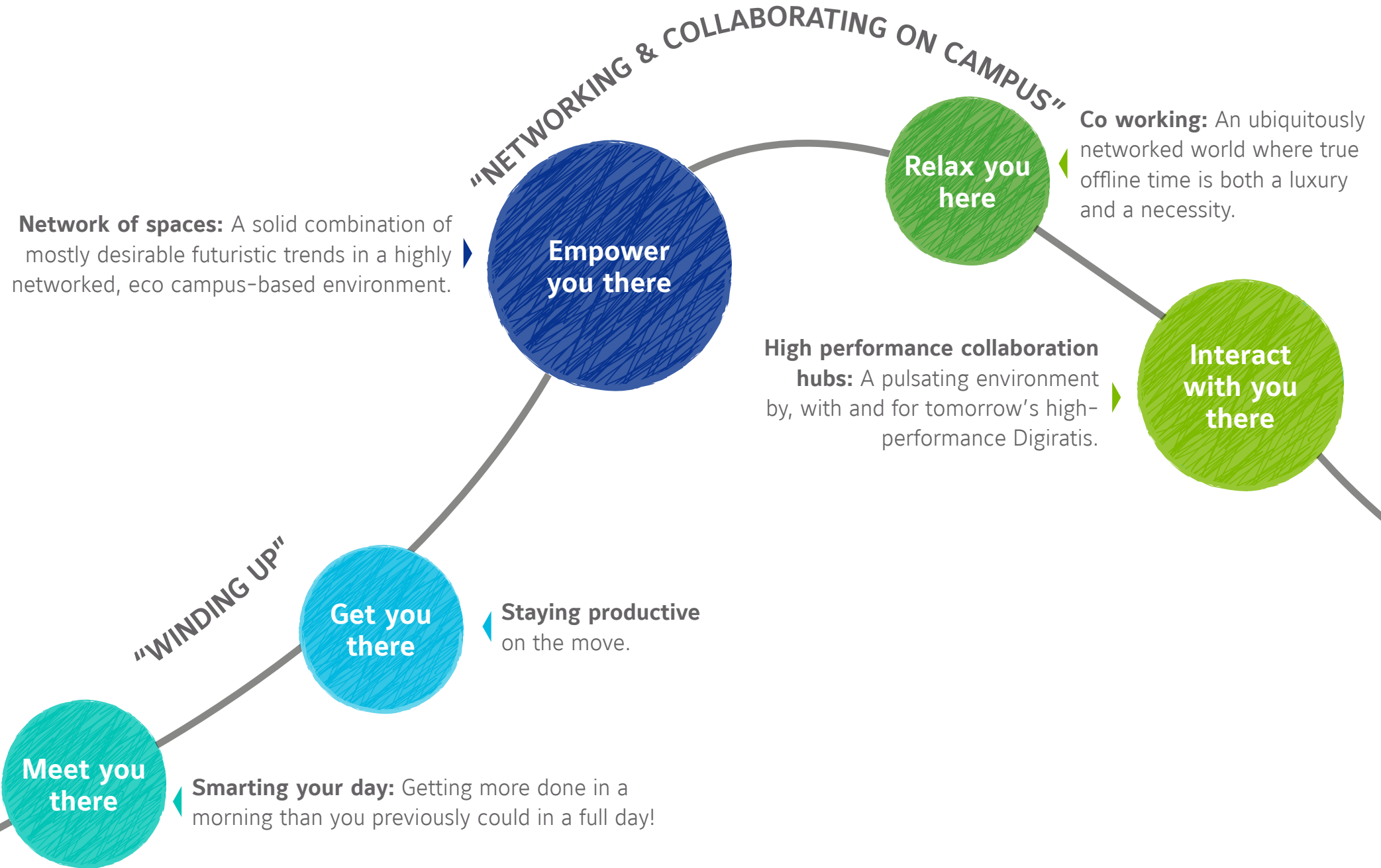
Max always had a passion for research. In the past 10 years since 2030, he had to adapt his way of working to the major transformations his industry had to go through: cloud-based R&D, on-line experimentations, robotic labs, dispersed R&D teams, fast computer calculations, new programming cultures, networked search engines...

He now spends the majority of his time with high-level architecture development and feeding requirements into his cloud-based programming service, and adding high-level human interpretations on top of real time data fed back to him through personal dashboards.

While he sleeps, his cloud is working, and while he is in his lab, 100% of his time is spent with his R&D team to analyze the results in front of the Virtual Obeya. The Virtual Obeya is an interactive wall that allows his team to interact with high-relevance knowledge and information, based on advanced, context-driven interaction logic, and allowing real time conversations with his dispersed team through holographic telepresence.

Max privileges private time to get around the city and get fit, something he can do anytime during the day in accordance with his flexible, global work schedule.





WINDING DOWN"



Taking off



City Summers: Let's experience together.

Scenario: a Day in the Life of Nina in 2040

Revisiting the "a Day in the Life of a Smart Worker in 2030" scenario published in 2009, in this report we map the actual versus projected developments in key societal and technology areas, and we use these in combination with consolidated input from three expert workshops and a broader study of trends to develop and present an updated scenario describing A Day in the Life of Nina in 2040.

Meet NINA in 2040

“In 2040, not two days are the same, not two weeks are the same, not two months are the same and not two years are the same.”

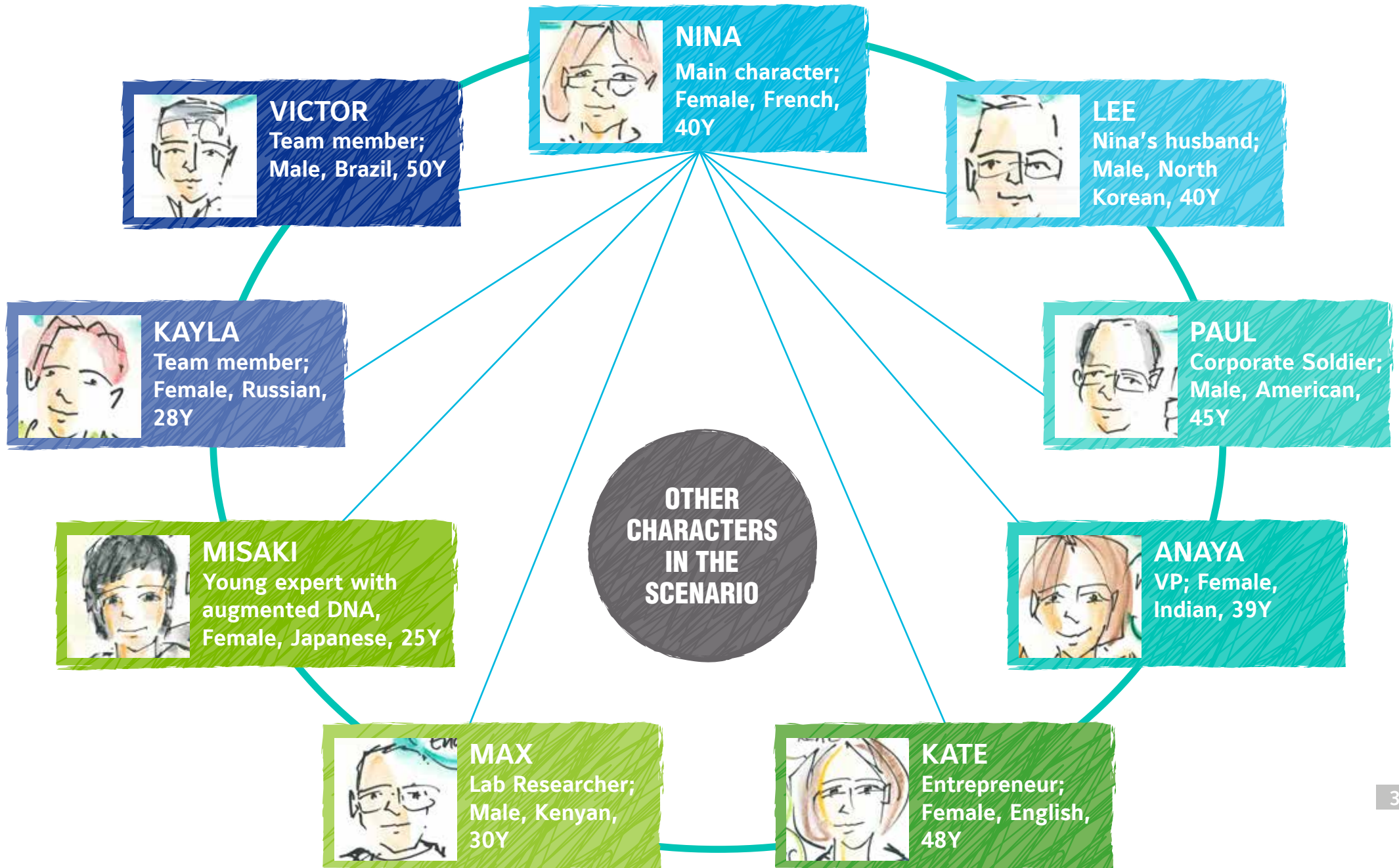


Meet Nina, the main character of our vision of the future of work in 2040. Nina has an entrepreneurial behaviour in the way she works. Self-employed, an artist outside of work, she lives in an urban park right outside a megacity. Nina is 40 years old in 2040 (she was 15 in 2015), married to Lee, 40 years old, a North Korea who escaped the dictatorial regime of Kim Jong-un in 2025. Nina is an early adopter in her day to day life. She rapidly embraced the radical changes imposed through the exponential growth of technology and nanotechnologies, Artificial

Intelligence (AI) and bio sciences brought by global research over the last 15 years. Although she pursued typical career track opportunities early in her professional life, Nina and Lee decided to turn around their lives radically when they had their second child towards and more balanced family life, also in line with sustainable Neocitizen principles. Nina and Lee jointly coordinated their working lives to meet their values: being human, remaining authentic, live through their community, provide the best educational experience to their kids (Sam, their youngest and Sarah, their eldest, a teenager), nurture their health & wellbeing, being bio conscious, supporting a collaborative society and protecting their environment. All of this by embracing a neo ecological behaviour.

Nina's profile:

- Working parents, this year Nina plans on working a maximum of 1200 hours, while her husband Lee is working 900 hours.
- Nina is working on the average four days per week this year (the new norm of 2040).
- Two children
- One iMaid Robot called Steve – the rock of the family as he can do everything in the house, as long as he is programmed for it! He can cook, shop, clean, order, check, enquire, talk, suggest, book, watch...
- No personal car – Nina books a car when needed, and she uses public transport hubs, the most efficient and fastest way to get around the city!
- Her home environment needs to accommodate flexible periods of work for her and her husband
- Eight years ago, they entered a co-living arrangement with a same sex couple with one adopted child. The house they share is built around a large communal space with a combined, modular multi-space including kitchen and living room, where each family have their own bathrooms, relaxing area and bedrooms.
- Nina loves going to the “office”... the place where she can meet and collaborate face to face with other co workers!
- Nina is a Digirati – digital solutions are engrained in her life at home and at work and she cannot live without it! She has the maturity to understand how to drive value with digital transformation.
- Nina has a moral compass in her DNA and like many people of her generation, she expects things to happen in real time – she is soonologist!
- She works with a lot of Achievers and she considers herself as an Explorer– in the new profile of knowledge workers (Digiratis), she is amongst the most successful of her network!



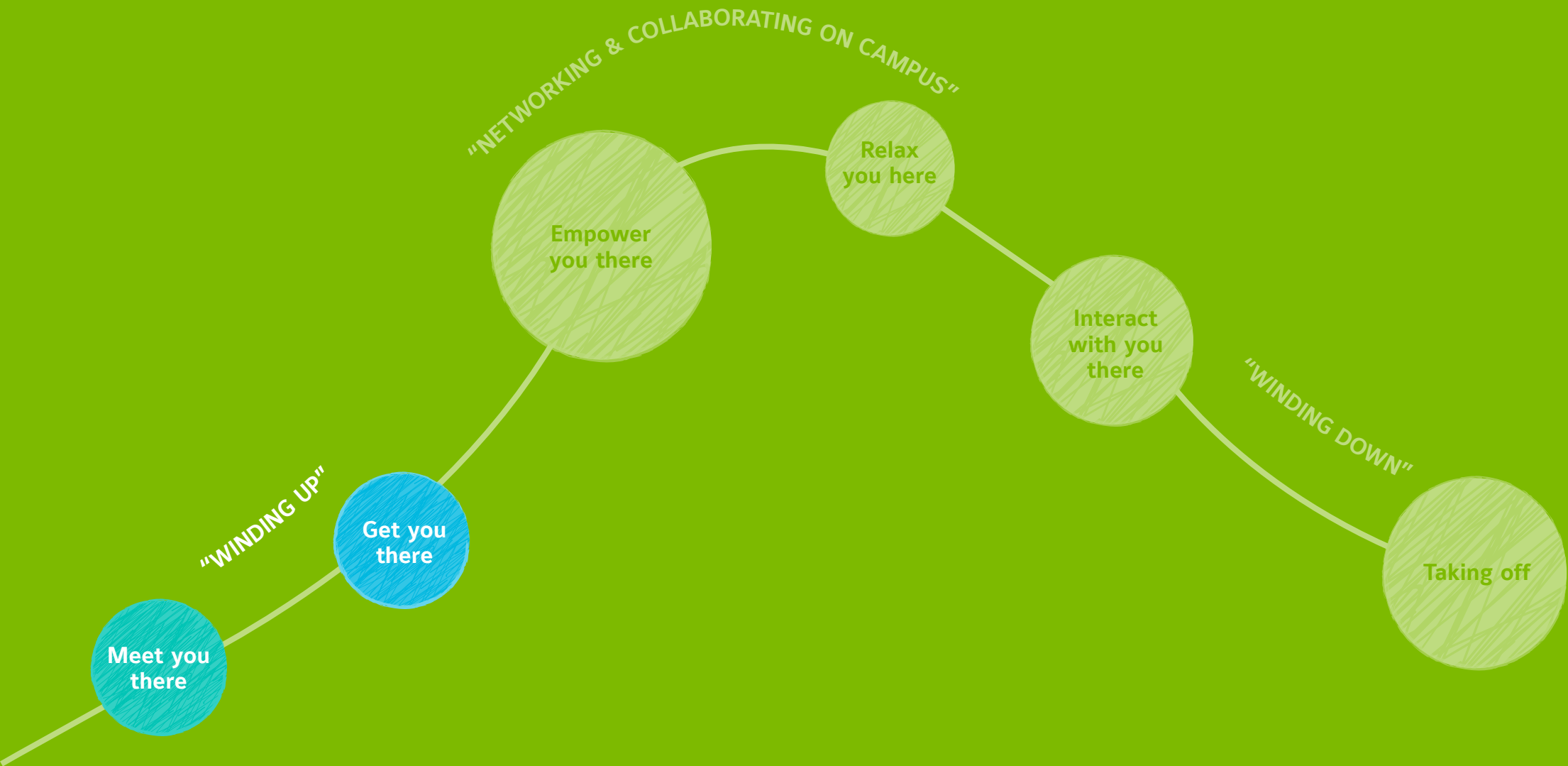
Born at the turn of the new millennium, Nina is a digital native, she has never known a world without the internet and has grown up in an environment shaped by advances in digital technology and driven by societal transformation that places a **premium on individual well-being**. Nina and other digiratis like her have high expectations around choice, experience and fluidity when it comes to work. She operates like today's entrepreneurs, relying on collaboration with experts and she isn't tied to any specific office. **For Nina and millions of other digiratis, work is something she does, not a place that she commutes to.**

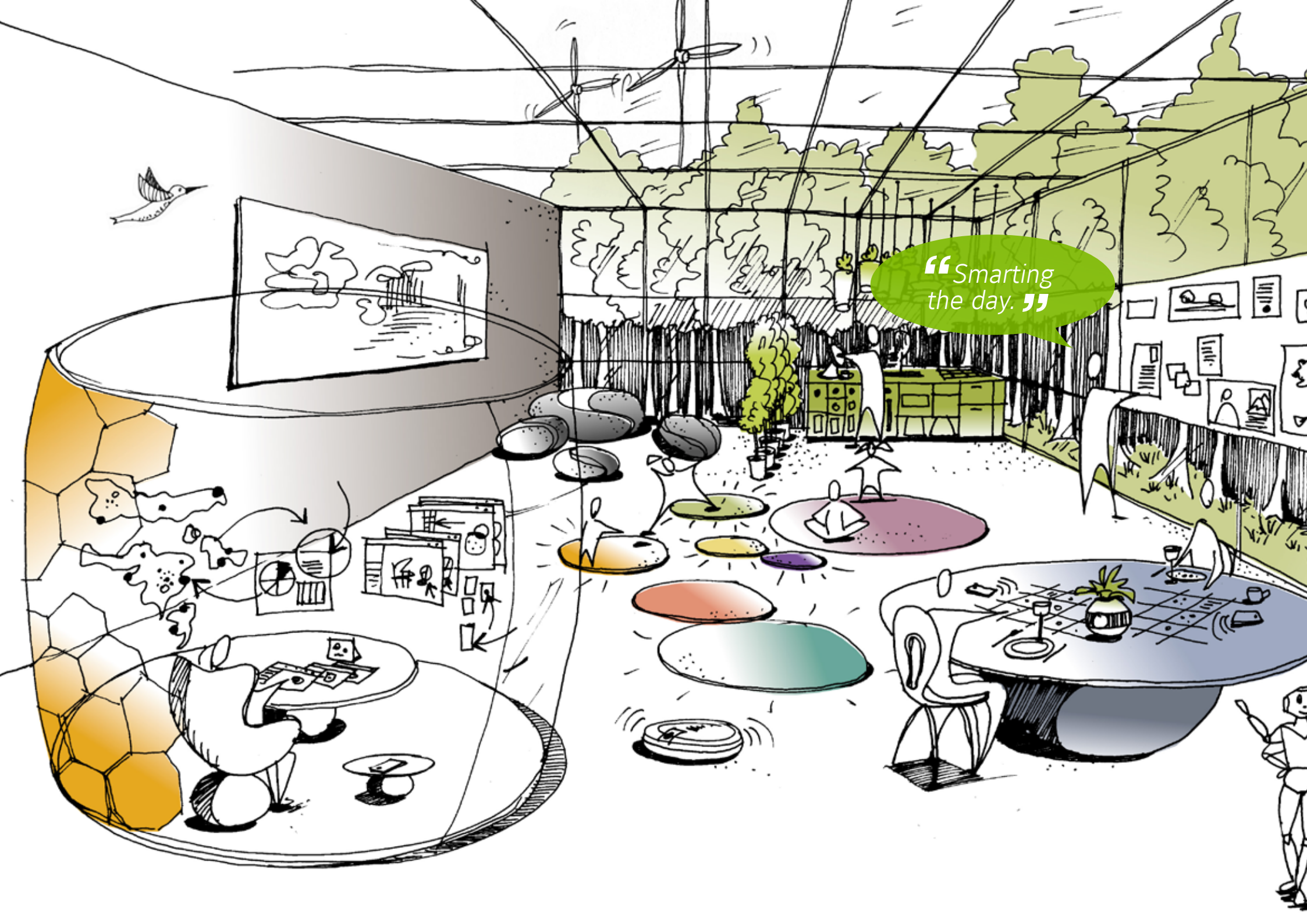
Nina lives in a smart home that adjusts light, temperature and ambiance according to her family's bio-health indicators. Intelligent machines carry out household chores such as cleaning or ordering and preparing food to match the family's daily nutritional requirements.

Nina doesn't commute to work every day, her patterns of work are radical compared with today. They aren't fixed around a place or timetable and she has a variety of choices about where to work. Her work schedule is fluid: often it's at home; sometimes it's with co-workers on an Eco Campus. When Nina wants to reward herself she can choose to visit a 'Trophy Workplace' where she can meet other digiratis to network in a highly experiential environment.

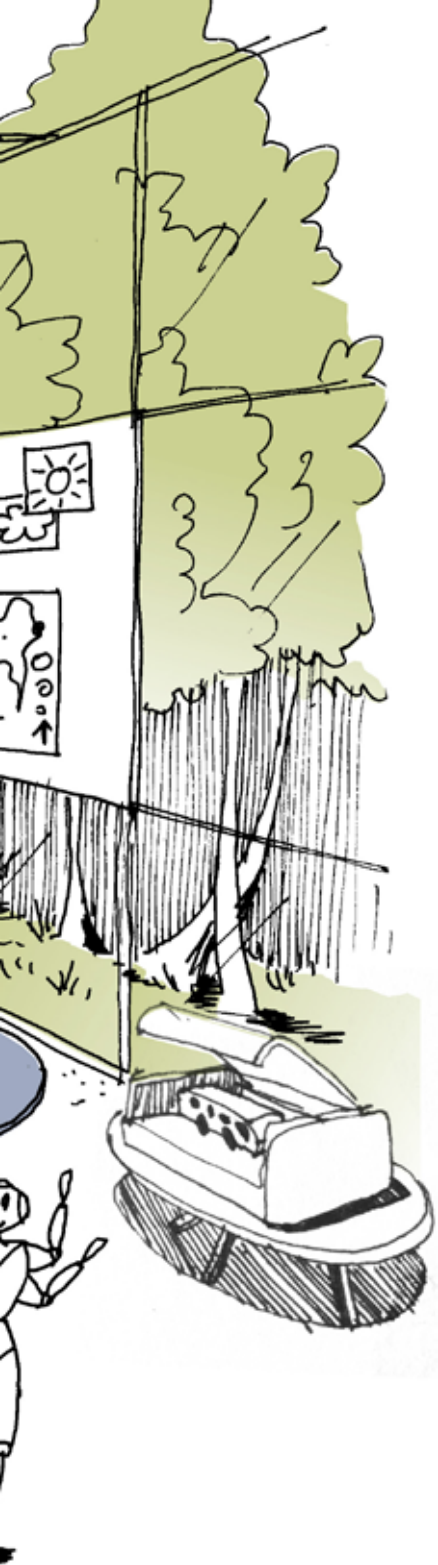


Winding Up





“Smartering the day.”



@ HIVE (Meet me there)

Getting more done in a morning than you previously could in a full day!

iMaid Robot; "Steve" - humanoid "quatropus" robot	Environmental indicators
Interactive wall	5D printing
Nutrimaster machine; for bio indicator-based BOOSTER breakfast with brainpower menu	Cloud-based executive assistant; IServeU Pro 3.0
Smart wardrobe - proposed outfit automatically provided from the automatic wardrobe. This life changer always keeps her body scan-based clothes clean, fresh and crease-free	Neocitizenship; Ethical Performance Indicators (EPis) - global citizen scoreboard
House activity monitor / smart house assistant	Smart contact lenses
Bio metrics / Bio health indicators	Dashboard/Orbs
Chip implant, an "epidermal electronic system" (EES)	Smart home "flow mode"
Dedicated home office space (Lee)	Integration of work and play
Agile home office on demand (Nina) with Telepresence (connected to Max) - Intelligent wall in MULTIROOM large communal space (as opposed to private spaces; bedrooms and private bathrooms)	Gamification of learning
	Smart noise cancellation
	Visual noise filter

Winding up @ HIVE (Meet you there)

“Soft and sweet” is Nina’s first thought of the day.

She loves waking up at home and not having to cope with extensive travel like she had in the past.

Getting more done in a morning than you previously could in a full day!

The home (the HIVE) is a hyper connected, adaptive and responsive environment supporting multiple requirements simultaneously.

The whole house enters into a “flow mode”.

Nina eat her breakfast with a special “brainpower” menu containing all the essential nutrients she will need until lunchtime (her “morning booster”).

After only five and a half hours of sleep, Nina wakes up. She knew that long dinner last night was not a great idea, but oh well – her friend Sara only turns 40 once and at least now technology should be able to cover some of the gap between Nina in her best shape and Nina as of this particular Thursday. Her **smart bedroom** started working 15 minutes ago, to make sure Nina’s transition from deep sleep to awake and ready for action is smooth, despite the rather short duration. Noisy alarm clocks? A thing of the past. As soon as Nina steps on her **smart floor**, the rest of the house enters **day mode**.

On her way to the kitchen, Nina quickly looks at the activity monitor in the hallway. It tells her that her husband Lee is in their home office in a telepresence session lasting a few hours already (he is working on an alternate time schedule this week, Nina does this more often than him but this week it’s him). On the other hand, Sam – their youngest – is just waking up, and Sarah – their eldest – is still sleep deprived. “Well”, she reflects... “There are some things, like sleep-deprived children, that technology just can’t fix.” Yet! Nina has an important meeting today, and she would really like to kick-start it as soon as possible. When asked by the **smart house assistant** how she feels today, she says “I’d really like a morning boost today”. This changes everything from lighting, ambiance music, scents in each of the rooms, temperature – into a **five sense immersive experience**.

The whole house enters into a **“flow mode”**, all aimed at empowering Nina in her quest to tackle today’s challenges. To really kick-start the day, Nina asks to have her **bio indicators** analysed for a booster breakfast. She really needs all the help she can get. As she enters the bathroom for a program shower, their **iMaid robot** (called Steve – Nina is a feminist, and would accept nothing but an androgynous robot at home!) greets her and quickly enters her bedroom to shake her pillows and make the bed. The humanoid “quatropus” robot with 4 arms is completing the task in record time.

When she is finished with her program shower of choice, she slips into the proposed outfit automatically provided from the **automatic wardrobe**. This life changer always keeps her body scan based clothes clean, fresh and crease-free. In the meantime, the family **nutrimaster machine** has already prepared a breakfast with a special **“brainpower” menu** containing all the essential nutrients she will need until lunchtime (her “morning booster”) – based on her **bio health indicators** (which are not looking great this particular day), personal preferences and personal objectives.

Nina still feels that old world problems persist even in this **age of disruption...**

Smarting the day

@ HIVE (Meet you there)

Travel is a luxury in 2040! The focus on health & wellness has been a major shift for our society and focus on exclusive locally based services and solutions is now the norm.

Nina takes advantage of the analysis of her complete task list for the next three weeks, performed by IServeU Pro 3.0, which automatically suggests what she should focus on, highlighting consequences of her good (or bad choices).

The system will suggest to Nina what she should do to maximise performance, not miss any important deadlines, and makes sure she allocates enough time for important tasks that are not necessarily urgent (chip implant)

Back to her agenda, Nina takes advantage of the analysis of her complete task list for the next three weeks, performed by **IServeU Pro 3.0**, which automatically suggests what she should focus on, highlighting consequences of her good (or bad choices). Nina knows that whenever she plans to get some report writing done, a two page recommendation doesn't take one hour including research (as she normally plans), it takes longer.

IServeU Pro on the other hand, knows that given Nina's busy life and typical work patterns, Nina will try to fit that report writing into small blocks of time, and that it is neither efficient nor particularly effective. IServeU Pro will, based on her **chip implant**, an "epidermal electronic system" (EES), feeding the system with Nina's **bio health indicators**, systematically and free of any bias, analyse deadlines, work patterns and preferences (actual priorities, not perceived!). Based on this analysis, the system will suggest to Nina what she should do to maximise performance, not miss any important deadlines, and makes sure she allocates enough time for important tasks that are not necessarily urgent. Moreover, it does not prioritise work tasks over personal tasks – it's her tool for a balanced life. Nina regards it as a major investment to improve her work life balance and her company covers 80% of the cost, like in old years of the company car benefit. With a truly global economy that – either natively or through automatic translation services (also for voice) – speaks English, defending premium wages is an uphill battle.

Although her ethics tells her she is contributing to the **neodigital divide**, her neocortex is trying to convince her that in today's fierce competition, everybody is using whatever competitive edge they can get, within the law. "Hey, some companies are even sponsoring these chips 100%." Nina tells herself. She is absolutely convinced that all national politicians are now in fact **bionic creatures**. It cannot be that bad.

Smartering the day @ HIVE (Meet you there)

Getting more done in day than we previously could.

IServeU Pro is suggesting that Nina has a good learning potential today.

Nina is all excited about this – she loves learning, these days are among her most enjoyable. Facing the big **interactive multiroom wall**, she uses a combination of voice and simple hand gestures to navigate and format meaningful pieces of news, research updates, executive briefs and some fun facts she will use during her presentation later today.

Lee still occupying the main home office, their multiroom (lounge, living room, kitchen, gaming, news & entertainment room – all in one) is now Nina's **agile home office on demand**, as well as an interactive news hub. Through her "knowledge breakfast" – she is learning about the strategic repositioning the oil & gas industry to supply raw materials for the polymer and 4D printing industry. Chinese and Indian companies have flooded the world markets with modular, printed housing. This year they estimate that 2.5 million printed houses will be mounted in Sub-Saharan Africa alone. And the whole **DIY movement** is experiencing a tremendous boost – people are literally building their own houses, bought from their smartphones using mobile web step-by-step guides. In medium income neighbourhoods, **robots rented by the hour do the job**.

Even high-income neighbourhoods seem to overcome initial scepticism that this is second grade. The big shift started emerging when they had the chance to visit some medium income dream houses that were turning all preconceptions upside down. While upmarket printed houses differ in **embedded smart materials** use as well as custom options and of course size, the basic process is very similar.

Quality time with family

@ HIVE (Meet you there)

Time spent at home is a priority in 2040, whether around a family or with friends and your local community.

Nina prepares for her first **4D telepresence session of the day**. Adaptive white noise technology makes it possible to have a first rate TP session in an open environment with children running around.

The whole DIY movement is experiencing a tremendous boost – people are literally building their own houses, bought from their smartphones using mobile web step-by-step guides. In medium income neighbourhoods, robots rented by the hour do the job.

As her two children are entering the kitchen for their personalised breakfast, Nina prepares for her first **4D telepresence (TP)** session of the day. While quality telepresence required a predictable environment 20 years ago, **adaptive white noise technology** makes it possible to have a first rate TP session in an open environment with children running around. Besides the standard mode, Nina can choose between **custom background** (using her smart kitchen wall) and **adaptive greenscreen** (which only displays Nina, and masks out whatever visual background noise exists). Beyond the obvious applications in open office plans, the latter would basically enable Nina to run an acceptable TP session from a crowded Shanghai bus stop with few – if any – problems. Nina is the first person entering the TP room, so she asks to be notified when others enter and walks over to help her son with his school preparations. 3 minutes later, she receives the TP arrival signal, and she enters active mode in this first telepresence session of the day – on social entrepreneurship, with Max – a Lab Researcher.

Inspired by Bhutan's long time work on GHI (see also OECD's index) a Nepalese start-up that is a part of her company's **NGEL "next global ethical leadership"** sponsorship program is doing some really interesting work on **Ethical KPIs ("EPIs")** that work across companies as well as individuals and families. Their **Neocitizen** embedded app for all personal devices, offices and smart homes have been spreading like wildfire.

The app is basically a **global citizen scoreboard**, using the 2035 version of the renewed UN charter of human rights and sustainable behaviour guidelines as a basis. Smaller, innovative states like Singapore and Estonia has taken this further and are now exploring **dynamic taxation (smart taxes)** based on "**good citizenship**" (participation / contribution / sustainability / care), and where sustainable behaviour gives you citizen credits that can be redeemed for e.g. public transport, utility fee discounts, or saved as a **contribution towards public pension saving plans**. This has fuelled a wave of "**smart consumerism**" and collective expressionism around sustainability values, as a reaction against the strong individualism of the past. Max is working on the implementation of EPI algorithms.

Moving around in the multiroom, Nina hears the silent buzz of their home 5D printer – most likely a print job printing equipment for today's school activities. Or maybe Steve found something that was broken and he is fixing it. Nina doesn't know, and she doesn't care. Whatever it is – when it needs to be ready it will be there, ready to pick up for whoever ordered it.

taking the
time

TIME TO UPDATE

take a moment
for yourself

quality time

diversity
of character
knowledge
exper

VAL

Quality time home

@ HIVE (Meet you there)

Time spent at home is a priority in 2040, whether around a family or with friends and your local community.

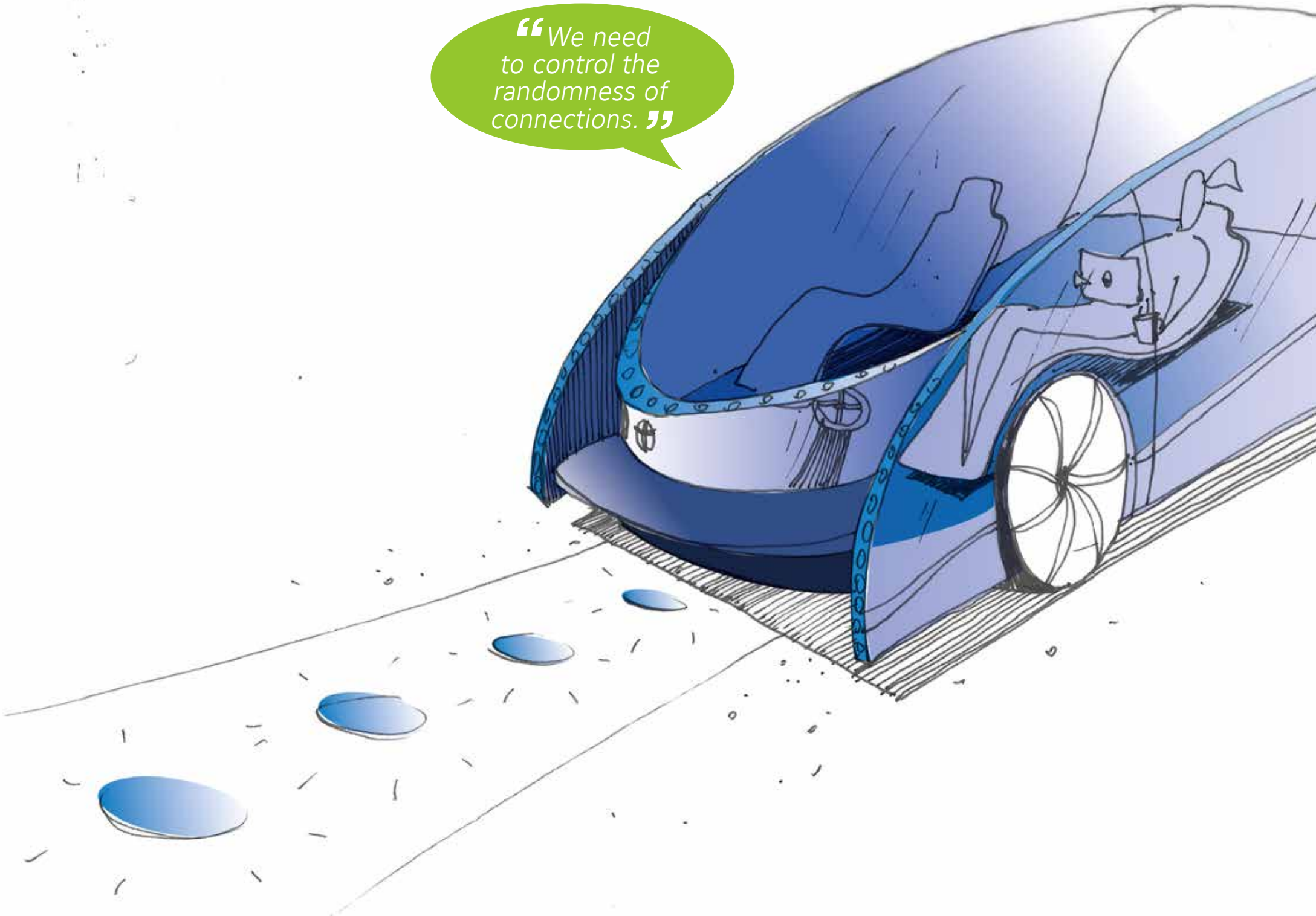
Health & Wellness is forever on her mind since it was recognized that your life span is critically linked to your well being.

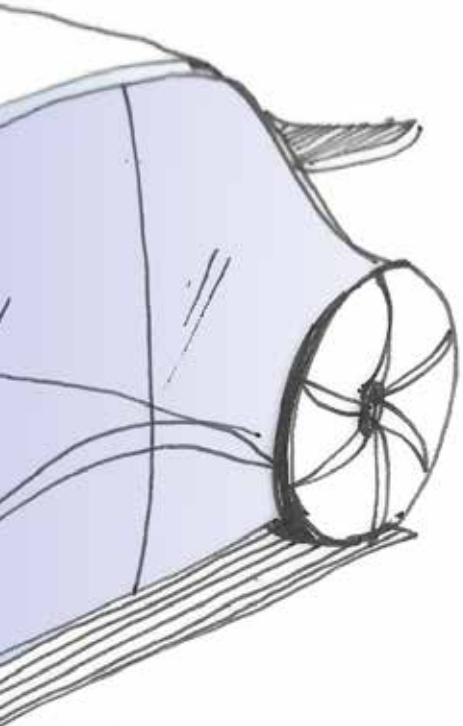
As Nina checks the environmental forecast for the day, her **interactive multiroom wall** and **smart watch** simultaneously notifies her that her transport is here, 3 minutes ahead of time – as usual. She loves the fact all the technology is integrated and so intuitive. She just needs to think about it and somehow, the house responds! Nina finds herself trapped between feeling outpaced by technology and struggling to keep up, and at the same time loving the benefits it provides.

She takes the last sip of her coffee and tells Steve to make sure the house is impeccable for the next week, when they return from a trip.

Before Nina gets out the door, she asks Steve if he can override the programmed menu and prepare mezze for their return. "I sure can, Steve replies – but since your husband had it for lunch earlier in the week, I think he might want something else". "Ah!" Nina says – "Great, thanks! What was I thinking? Make us a surprise dinner then – and you may go 50% over the normal budget!". "Perfect" Steve says – "I appreciate it! Have a nice trip!"

“We need to control the randomness of connections.”

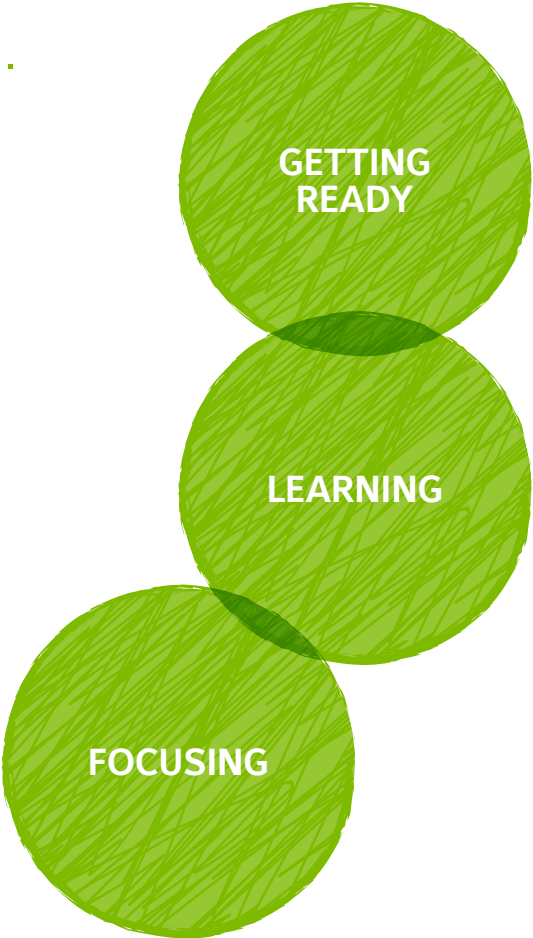




“Staying productive on the move.”

@ pHive (Take me there):
 The good thing is that it is all up to you.
 The bad thing is that it is all up to you.

- Driverless car / autonomous vehicle with mobile workspace
- Smart AR glasses
- eCorridor - Virtual corridor; virtual “serendipity space”
- VCR (Very Close Resemblance) avatar
- LOway / HIway
- Autonomous highway construction robots by the road
- Location-independent, high performance workflow support
- Megacity landscape in the background
- Poor air quality (some days)



Staying productive on the move

@ pHive (Personal Hive)

The notion of lost time is a thing of the past. In 2040, smart technology services that enable you to keep a high-performance workflow throughout a day and staying productive as you move across different contexts and situations, imply that being performance-driven is a choice, not an imperative.

Nina steps out and enters her unmanned, on demand pHive vehicle with her personal profile pre-loaded through her subscription service.

The pHive is a more productive environment than the co working hub at the client's HQ

Nina plays her recorded presentation back in last row audience mode. She notices a few transitions that were not quite right, and the AR gyro had also picked up that her head was tilting just a tiny bit too much forward, making her look closed and less assertive than she would like to be.

As Nina sits down, she is welcomed by the **pHive** introducing herself as Tino, commenting also that it is quite a coincidence that this was the first **driverless car** she drove in her life back in 2025. They share a short laugh and the pHive slowly rolls out of the driveway.

The car asked if she wants the scenic route or the fast route (there is low traffic today, so both are safe in terms of getting her to the meeting on time). Nina responds that it's a bit of a "tomato, tomato - potato, potato" question since neither are very scenic unless you are a total fan of Chinese post-2025 sustainable architecture. Nevertheless, she picks the scenic route - not because of the scenery but because this gives her 10 extra minutes in the pHive, which is a more productive environment than the **coworking hub** at the client's HQ. Often hanging out there is very productive, as she regularly bumps into project partners etc., but not today. She prefers to do a last run-through her presentation.

She puts on the **smart AR glasses** and preloads the meeting room based on a few photos she took with her smart glasses some months earlier. She reads out a few names of people she knows will attend the meeting, and asks the system to fill up the meeting room with five additional random faces. She would like to rehearse her presentation intro and the punch line.

She closes her eyes, pauses for a moment, and when she opens them again, she is in the meeting room, ready to give her presentation. She thanks Ralph, her main contact, for the kind introduction and runs through her intro again. After she has finished, she plays it back in last row audience mode. She notices a few transitions that were not quite right, and the **AR gyro** had also picked up that her head was tilting just a tiny bit too much forward, making her look closed and less assertive than she would like to be. "Damn it" she says, "why do I do that". Getting the reminder alerts her - and on the second run, it's just perfect. Transitions, posture, voice, she nailed it. She doesn't want it to appear too rehearsed, so she decides to leave it at that, ending on a high note. She decides to "stop by" the **virtual corridor** of the ECOOFFICE she will visit in person later that day. It's only 10:15, and there should be some people there by now. She says "Enter eCorridor" and is asked by iServeYou Pro what she would like to appear as. "Today, just as I am" she says, and her proposed appearance is designed in a split second based on the clothes she took out from her assisted wardrobe for wearing this morning. **Her VCR (Very Close Resemblance) Avatar** appears and Nina says "OK, good to go!"

Staying productive on the move

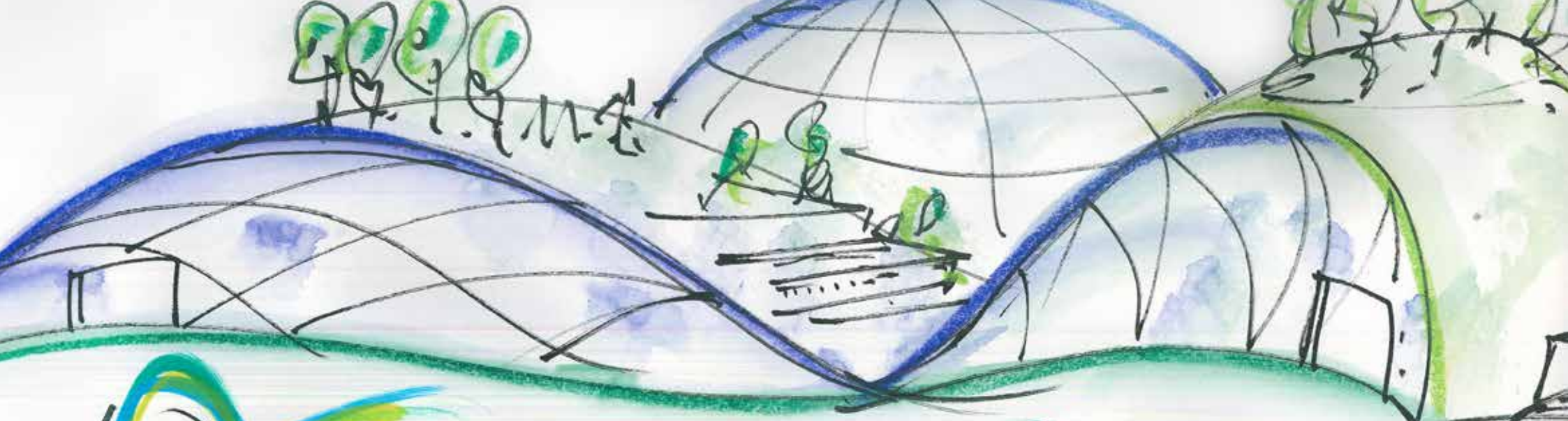
@ pHIVE (Quality time)

The good thing is that it is all up to you. The bad thing is that it is all up to you 😊

Nina reflects a bit on the rapid growth of all infrastructure that followed the introduction of autonomous construction robots.

She then enters the eCorridor, seeing people that are in the office (but not in the corridor) on an interactive wall. The ones that “hang out” in the eCorridor to network are in the hallway just like herself. She sees Paul browsing the interactive wall, and she walks over to say hello and they agree to discuss a new idea informally over coffee later that day. iServeU records the conversation, and Nina asks to be reminded about the informal appointment later in the day.

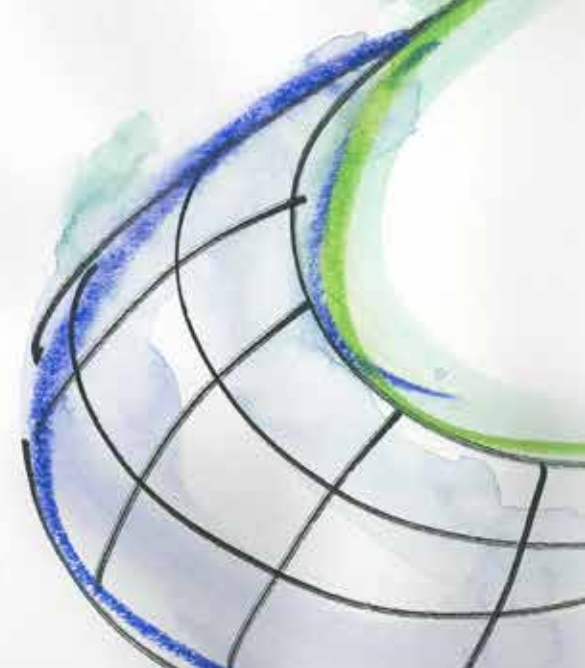
As her pHive leaves the “**loway**” (in 2040 terminology, “highway” is used for airborne transport (drones and manned vehicles; multiple layers in separate corridors for safety), while any surface transport – elevated highways or not – is called **loway**. Nina reflects a bit on the rapid growth of all infrastructure that followed the introduction of autonomous construction robots. Working lightning fast with robot precision and on 24-hour shifts has really changed things. Nina sees the logo of her client now, and her pHive slows down as it is entering the park that is close to her client’s corporate HQ.



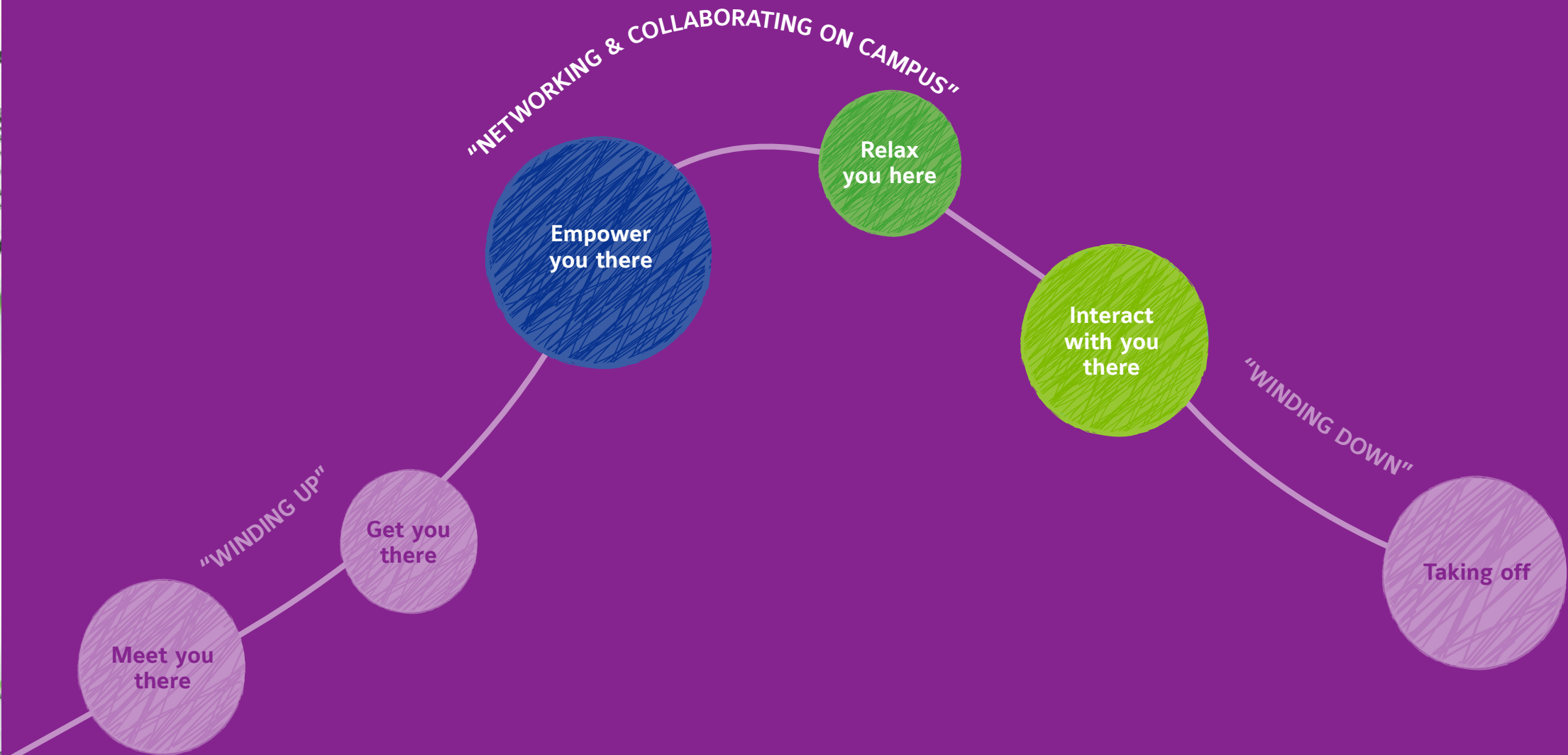
Go Campus

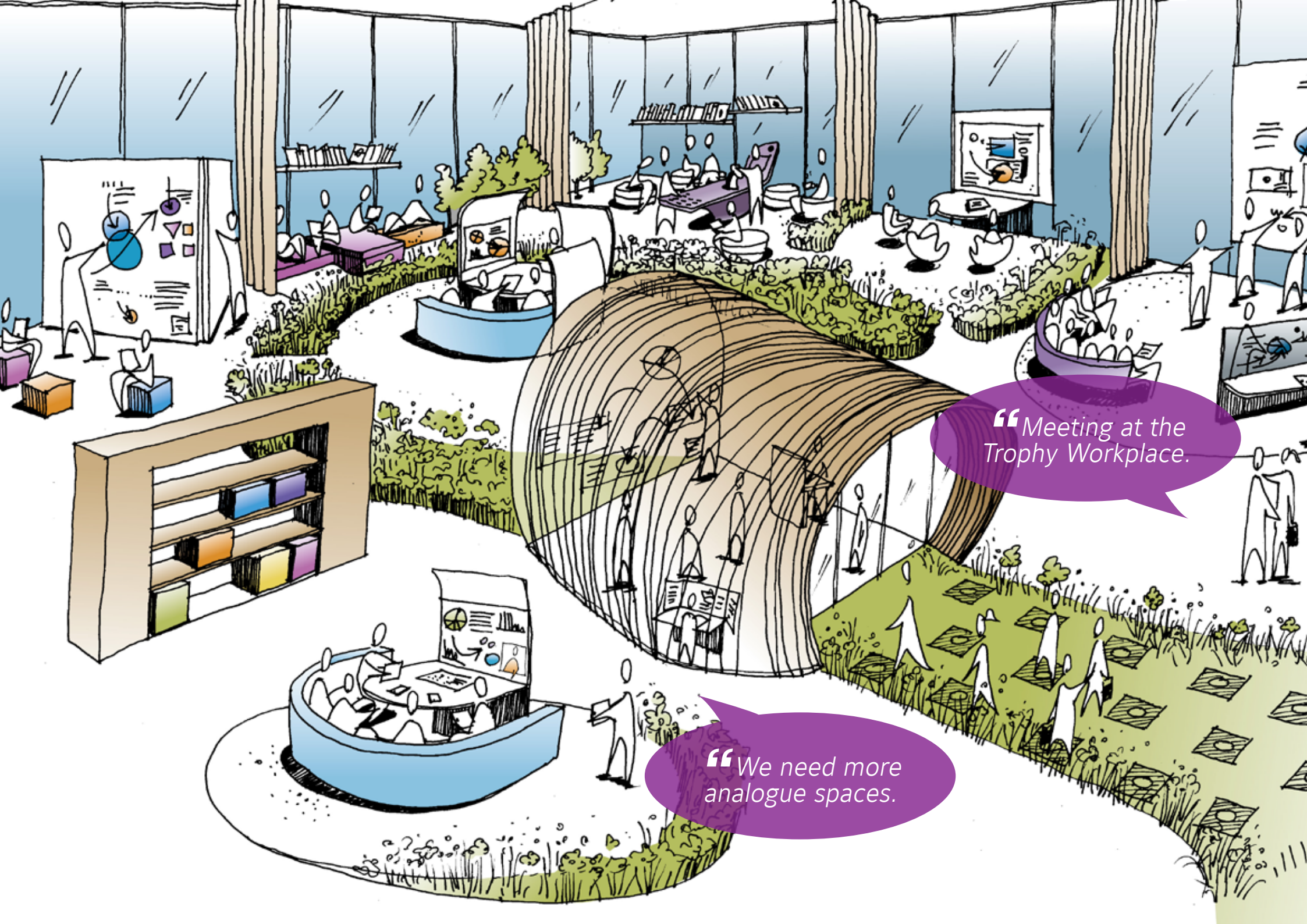
RE
PORATE

interacting
with the
environment
and community
around it



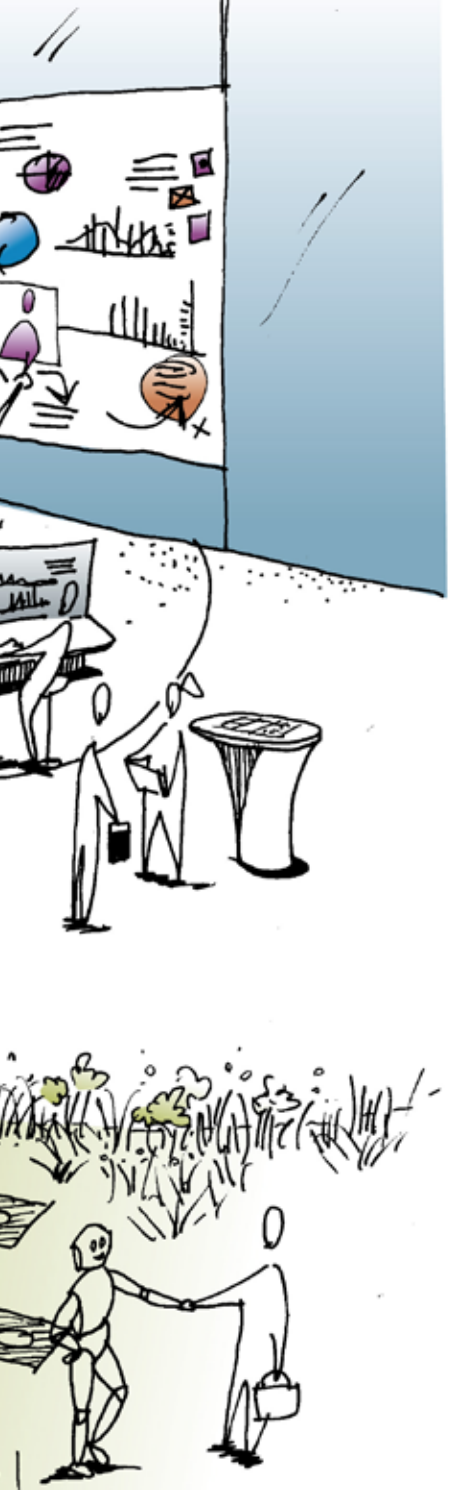
Networking & Collaboration





“Meeting at the Trophy Workplace.”

“We need more analogue spaces.”



@Eco Workplace (Empower you here)

A solid combination of mostly desirable futuristic trends in a highly networked, campus-based

Coworking campus – “town in a city” (or “city in a city”) built around communities built to human scale

Facial recognition

FM eReception

eFM card with profile-based services

Robus on-campus transport

Cleaning robot

More organic shapes; less “boxy”

BYOX; Bring your own “whatever you need”

Advanced Collaboration Space for Accelerated Decision Making

Being physically present perceived as more authentic / a luxury

Misaki – 25Y old subject matter expert with augmented DNA

Threat of AI-based computer viruses

Automated MOMs with task management synchronization

Interoperable task management platform

Bio-sensing - Being able to “read” each others moods, leanings, frustrations, cultural implications

MEETING &
COLLABORATION

DECISION
MAKING

NETWORKING

Collaborating

@ ECO WORKPLACE (Empower you there)

A solid combination of desirable and not-so-desirable futuristic trends in a single, networked building.

Industrial conglomerates resembling what you have seen in films. A solid combination of desirable and not-so-desirable futuristic trends in a single, networked building.

The topic of discussion is battling AI-based computer viruses

Finishing her ride in the pHive, Nina is approaching her coworking campus – CoCity – a city in a city. This is one of the developments she really embraces. It really addresses many of her most important needs – despite being a large, connected community, the whole concept is centered around small environments (“nooks”) that are all built to human scale. And while Nina often struggles with technology, the way technology is managed (or rather, manages itself) here on campus is really something she appreciates. The technology is there but it’s rarely intrusive, and mostly supportive.

Despite having a bit of a tough start of the day, Nina gets out of her pHive well prepared for her client workshop. She is definitely going to blow her client away today with some great ideas, now also properly rehearsed!

One of the implications of the latest shift is the array of services that were not available just a few years back. For instance, BYOD has expanded to **BYOX; Bring Your Own Software, Robot, Knowledge, etc.** For business critical information, Nina just needs to certify that the resources she uses satisfy relevant standards for quality, sustainability, ethics, etc. All pieces of hardware or software that are compliant with applicable standards, are plug and play – interoperability in 2040 is no longer a false claim – it actually means **real interoperability**. The standardisation ecosystem built around the IoT (Internet of Things) has really taken a huge step forward in the two decades leading up to 2040.

When entering the client campus, two cleaning robots have obviously either done a **facial scan**, or checked the meeting calendar and matched this with the pHive database. Nina makes this conclusion because they greet her by name and wishes her a productive day. She can’t help thinking that these robots are just getting a bit too smart.

They know a lot about her, and she knows next to nothing about them apart from the fact that they are both designed and operated by this particular client.

As she walks over to the **eFM Reception**, her name lights up on the wall right over the electronic badge slot. Nina puts her hand on the reader, and her eFM card is printed on 100% recyclable material. This provides her access to a range of services from coffee to catering, medical assistance and concierge services. As Nina is a frequent visitor, she enjoys the full range of services available for non-employees, even the hyper-speed 12G hologram network. As she retrieves her card, the machine asks if she would like one of her favourite responsible decaf coffees. She puts her hand over the coffee maker which automatically prepares the perfect coffee blend in accordance to her mood, body temperature and blood pressure. She selects the half size option, since her meeting starts soon. The client HQ has a sub-zero environmental footprint proportional to the total activity level, as Nina earns Neocitizen points by using the various services offered. These points are transferable to her own EPI scorecard, or can be donated to a charity.

Shortly after, her host Misaki picks her up, and they hop on the two person robot bus “Robus” Misaki ordered three minutes ago – the **automatic on-campus transport service**. Misaki is the well known for being one of the first human beings with **augmented DNA**. She is only 25 years old and already a world leader in her discipline. Her performance capabilities have been enhanced by carefully augmenting her DNA and providing her more resistance to high level of stress – to enhance her learning and knowledge absorption capabilities. They start discussing the agenda right away.

Collaborating

@ ECO WORKPLACE (Empower you there)

The workplace of 2040 is far more agile, the presence of technology is ultra predominant and human beings and teams are highly reliant on pervasive technologies.

The “do not hurt humans” algorithm is fundamental and considered failsafe.

Being physically present perceived as more authentic / a luxury

100% of the goods consumed on site are locally sourced and produced. All vegetables used in the catering department are produced on site.

With the combined effects of AI development, nano technology, Moore’s law (speed) and Metcalfe’s law (network effects) the complexity of security threats has changed profoundly in the years between 2030 and 2040.

The agenda of the day is to come up with an action plan for the new type of **AI-empowered computer viruses** that represents a threat for the proper functioning of the company’s thousands of robots. The **“do not hurt humans” algorithm is fundamental and considered failsafe**. However, certain other security mechanisms could be bypassed by breaking up harmful acts in several subtasks and using several robots that are unaware that they form part of a hidden, coordinated task force. This potential vulnerability could be used by criminals to attract interest or distract, it could be used for blackmail; it could even be used by terrorists.

To address this risk, Misaki has called for this **next generation empowered, collaborative decision making meeting in the ACSADM (Advanced Collaboration Space for Accelerated Decision Making)**. They pull up relevant information and decision support material that has been collected, shared and discussed by the entire team on the **on demand collaborative cloud wall** that has been set up to prepare for, run and follow up the actions from this meeting.

The physical environment still resembles what we used to define as a workplace (a physical location to support human activities with the objective to create, deliver or produce goods or services): a facility for Digiratis to meet, collaborate and work together, but only for a few hours at a time. The workplace of 2040 is far more agile, the presence of technology is ultra predominant and human beings and teams are highly reliant on pervasive technologies. Yet these technologies are “shy”, not intrusive, transparent, and highly reliable – failure is neither a possibility nor an option.

Nina reflects a bit about the difference between being here and participating from home or where she is going later in the day, to interact with Anaya and other decision makers. While technology has made a huge leap forward – there is still something about being present. She concludes that the impact is indirect – by feeling more present, she is also more present – more authentic, more engaged – in the discussions. At least in this particular meeting.

They proceed with the discussion, including possible industrial espionage and bio-hacking scenarios. Conclusions, decisions and action items are documented in real time and automatically synchronized with each participant’s preferred **interoperable task management platform**.

After the meeting has finished, they decide to go for an on-campus lunch together. On her way out, Nina passes by the Neocitizen station by the eFM Reception. The station reads out her points earned, a presents and number of choices: she could claim the points for her own smart taxation scheme, she could donate to a range of charities, or invest. Being a firm believer in social impact bonds, Nina today decides to invest in one of the youth unemployment schemes designed to provide learning opportunities to youth that need to improve their skills to compete with the massive replacement of service and manufacturing jobs that has taken place over the last decade. While not called unemployment for robots, even recently manufactured fully functional robots are sometimes idle after having been replaced with the latest AI-based robots these days.

“Our cognitive absorption capacity is very intense.”





@ The "Faraday" Bistro" - (Relax with me here)

Ubiquitously networked world, true offline time both a luxury and a necessity.

“Faraday Lunch.”

100% shielded environment on campus (indoor; outdoor is free)

Fast drone delivery of recently ordered package - multi-level airborne city transport & logistics

Advanced ordering kiosks; interactive menu selection (holographic, based on diet preferences)

Biometric payment

Powerwalks; Electric sidewalks

Human service as a premium offering

Locally sourced food

DISCONNECT

SOCIALISE

HEALTH & WELLNESS

Lunch

@ "Faraday" Bistro (completely offline)

A place to escape from the business and production-oriented environments normal workplaces offer. The intensive knowledge based economy of 2040 is exhausting, draining your energy faster than ever before. AI solutions allow Digiratis to transfer some load to Robots Personal Assistants, but it feels great to escape the buzz of 2040 life in a Faraday Bistro.

In an ubiquitously networked world, true offline time is both a luxury and a necessity. Shielded bedrooms and offline restaurants are widespread.

Today is a sunny day, so they all pick the Sun as soon as they enter the Faraday Bistro, designed as a solarium, shielded from urban life

When walking over to the lunch place, Nina admits to Misaki and the rest of the team that she is very appreciative about the help offered by the technologies she has been using today, because lack of sleep sometimes causes a terrible migraine that is now starting to really affect her, but that she has been able to function more or less OK throughout the day due to the combined help offered by her services and tools (and of course good colleagues as well)!

The campus is connected through a network of **powerwalks** as them call the (electric sidewalks). They basically have four lanes, two in each direction. People eager to get to the next place pick the lane moving in the same direction (the "current" lane). Athletes and others interested in extra exercise pick the lane next to it, moving in the opposite direction (the "countercurrent" lane). As she walks onto the same-direction lane, Nina reflects on the fact that this has to look very strange from above.

Based on the principles laid out by the great **Faraday**, the dining area of this café is a totally **shielded environment** containing no electromagnetic radiation whatsoever. Although not the main purpose, it leaves you conveniently offline as well.

After dropping off their gear, they go over to the ordering booth where they use large touch screens to select their lunch menu and extras. All menu choices have 360 degrees rotating views, and full nutrition facts are only one click away. You can also load your suggested diet onto the system via NFC and get some suggestions that are in line with your requirements, as well as deviations highlighted if you go outside suggested choices.

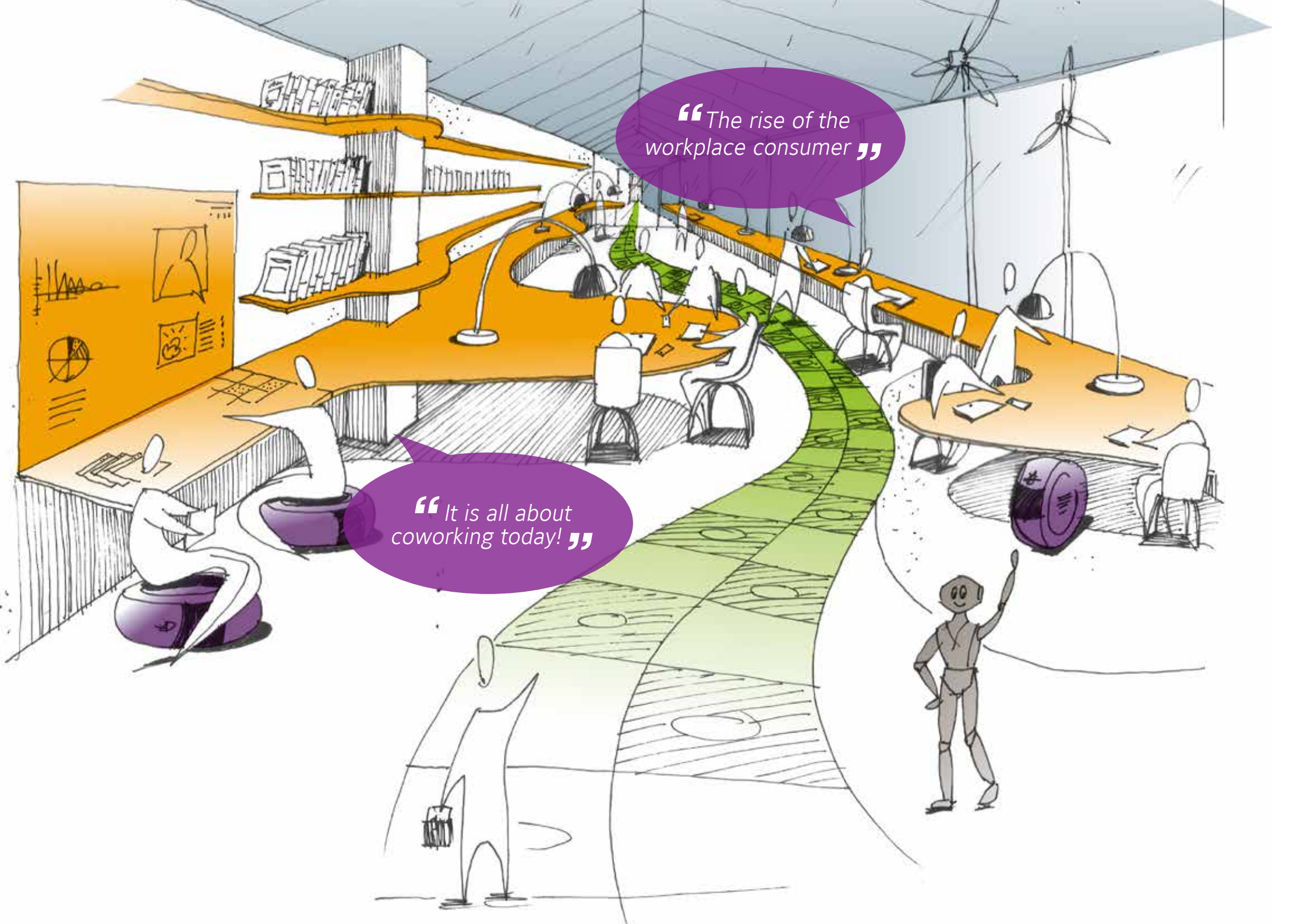
Services are based on personal preferences and user input, and charged to your business expense account using double biometry verification. They enter the cage itself, and are taken to their table by their waiter. This is an upmarket lunch venue – in an era of cheap, hard-working robots, only upmarket places like this now offer personal service.

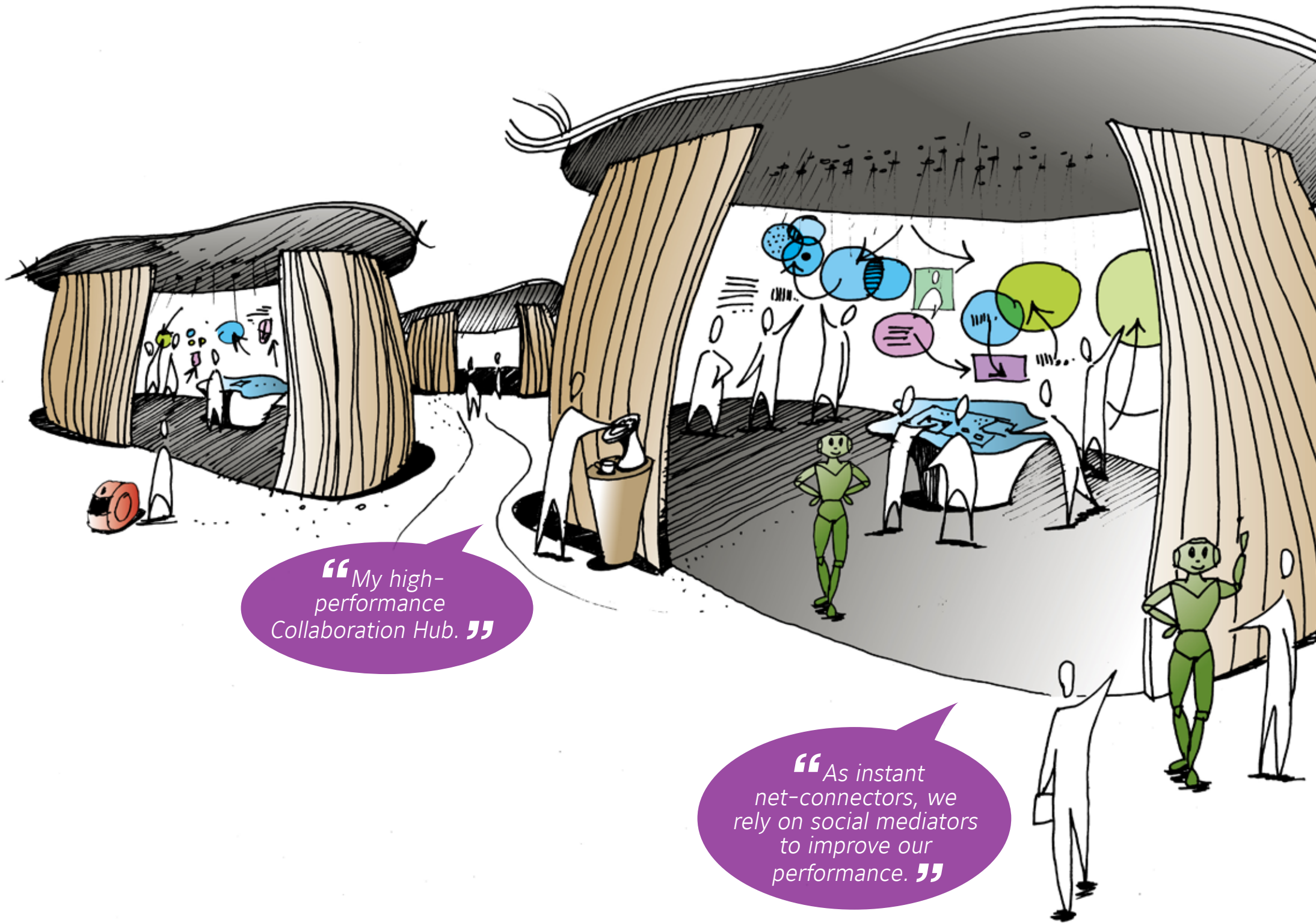
The service is great. They are really enjoying the freshness of the ecological, locally sourced food, freshly squeezed fruit juices and the hand brewed coffee.

After they finish eating, her colleagues head back to other meetings, while Nina decides to hang around in the terrace section of the Faraday Café for some personal time. The terrace is located next to one of the small lakes around the campus – and it's one of Nina's favourite spots around campus. Today, she counts 3 swans and 15 ducks plus numerous small birds. Nina had originally planned to do some reading, but seeing the weather she doesn't really feel like it and she decides to do some personal shopping instead. When completing the order, she finds out that with express drone delivery, the clothes she orders should be delivered before she leaves for the day – great! Just in time for her family trip this upcoming long weekend!

“The rise of the workplace consumer”

“It is all about coworking today!”





“My high-performance Collaboration Hub.”

“As instant net-connectors, we rely on social mediators to improve our performance.”

@ Smart Workplace (Interact with me there):

The new office – a pulsating environment by, with and for tomorrow's high-performance Digiratis.

Office designed using "collaboration first" - principles
Rich typology of available coworking spaces
iCocoon; personal flash centre
Professional, personalised, and proactive FM services
"Globot" - Expert robot as meeting participant - Having robots and avatars on the team changes the dynamics of the meeting
Holographic conference (4D Telepresence)
Pixels everywhere
Sending your Avatar to represent you in a meeting
Robox (described in last section)
Virtual Obeya: Gesture- and eye movement enabled activity space
Transparent audit trail: Relevant references and data sets are linked to each discussion item, decision point and follow-up action to maintain a fully transparent audit trail
Smart contact lenses

COLLABORATION
& NETWORKING

PERFORMANCE
IMPROVEMENT

LEARNING /
PERSONAL
DEVELOPMENT

High-performance collaboration hub

@ Smart Workplace (Collaborate with me there)

The new office – a pulsating environment by, with and for tomorrow's high-performance Digiratis.

The new office – a pulsating environment by, with and for tomorrow's high-performance Digiratis

Workplace design based on "collaboration first"-principles

Nina decides to catch up in the personal flash centre. This is a micro-environment that helps Nina accelerate her knowledge cycles.

After lunch, Nina is all geared up and eager to stop by her "second oasis" (the first one being her home) – this one being on campus. She stops by her club hub to learn, touch base with colleagues and networkers, and to accomplish things that are difficult to do in other settings; "things you cannot do anywhere else, and could not do at all in 2030". While Nina does feel at home on campus in general, this is where she really "lands" – this is her home community.

The Eco Office is like an onion; layered around a core – based on "**collaboration first-principles**". The core acts as a "**human knowledge accelerator**"; extractor, blender, oven – while the outer layers represent a mix of different zones and environments. There is a rich typology of spaces available – some are technology-rich, others are distinctively not. It all depends on personal choice and what is needed or desired to do (or not do) certain things. Before today's collaboration activities, Nina decides to catch up in the **iCocoon, a personal flash centre**. This is like a micro-cave cocoon that helps Nina accelerating her knowledge cycles, in particular internalizing the results of her previous meeting and combining recent experiences and material she has come across into meaningful concepts.

Fifteen minutes in the **iCocoon** typically produces results equal to one or two hours in a neutral environment. Indeed, Nina has one of those much appreciated Eureka moments also today – imagining a very innovative combination of otherwise disconnected concepts that she had not thought about before. Besides, the iCocoon confirms that there is only a 15% chance that this idea is known – after having crawled all available patent and creative commons databases, using automated translation services.

One day she would like to try using it for a full day, Nina thinks – although it might be too intense, exceeding her cognitive absorption capacity. At least this particular day, where she is still struggling a bit to keep up. Only one way to find out, she concludes.

Stepping out of the iCocoon, she benefits from the **new generation P3FM environment (Professional, Personalised, and Proactive FM services)** – her environment is scanned through her smart watch, the temperature and the humidity in the building checked. This is adaptively adjusted based on the preferences of all the people present in the office. At this moment it is quite OK, so Nina confirms and then presses the FM attendant button. She browses through the holographic tag cloud hovering over her smart watch and selects collaboration services followed by experts on demand. Under collaboration services she books a **Virtual Obeya for doing research and making decisions**. She needs some additional input for her client project based on the outcomes of the meeting, and the Eureka moment she had during her personal flash centre update.

She then sends an open invite for chargeable contributions using the platform Decision eXchange. **The platform crawls LinkedIn and activates LinkedOut**, a sourcing and transaction platform built on top of the latest version of Elance. She needs a strong team, and to her surprise, two of the suggested people on this ad hoc task force, Anaya and Kate are actually available in person in the Eco Office today. The three other specialists, Kayla, Victor and Max (whom she spoke to this morning), will join virtually.

High-performance collaboration hub

@ Smart Workplace (Interact with me there)

Having robots and avatars on the team changes the dynamics of the meeting – calling for a new type of leadership.

A workforce made out of true global staffing, really a mixed team. Nina is joined in the high-performance collaboration space by four of the five specialists plus one avatar.

With the new opportunities driven by a combination of cloud resources, open data, computing power, speech recognition, translation services and powerful ad hoc dashboard generation technologies, complex data can be collected, aggregated, visualized and interpreted in real time – as input for quality decisions.

Starting the meeting, Nina realizes what an exciting team she has at her disposal. The room she is in is fully equipped with the latest touch and sound technology to visualise and retrieve valuable data. The 4D Telepresence system which enables her to not only see, but feel and sense other human being behind the screen, is an amazing innovation. The Holographic application brings even more depth to the virtual exchange. All the walls surrounding the room are interactive activated by voice and gesture recognition, and there are telepresence robots there as well. In less than a minute, Nina is able to set up her meeting room. She suddenly realises that the room is full of pixels!

She voice-activates the **Holo-conference (or Honference)**, and one minute later, Nina is joined in the high-performance collaboration space by Anaya, a Vice President and the principal decision maker in today's session, and Kate. Then Victor connects. He is located in another collaboration hub (it seems), while Max is clearly connecting from his home office. Kayla could not participate in person since she was double booked, but **she sent her avatar to comment on known agenda items and read out a pre-recorded position statement. This is true global staffing, really a mixed team.** "What a salad", Nina can't help thinking.

Through **4D telepresence** the only way Nina can tell if it's not a real person, is the avatar indication in the system. To round up the team, they have three robots ("globots") with AI as well: one from Paris, one from Hong Kong and one with an on demand competency profile (software) loaded to fit the purpose of this meeting.

Having robots and avatars on the team changes the dynamics of the meeting – calling for a new type of leadership. It's very different than meetings in the past, where information needed to be compiled in advance to be sufficiently meaningful. With the new opportunities driven by a combination of cloud resources, open data, computing power, speech recognition, translation services and powerful ad hoc dashboard generation technologies, complex data can be collected, aggregated, visualized and interpreted in real time – as input for quality decisions. **The robots are continually checking facts and assumptions in real time**, keeping track of relevant scores and visualizing the validity and robustness of the meeting outcomes.

Relevant references and data sets are linked to each discussion item, decision point and follow-up action to maintain a **fully transparent audit trail**. This type of enhanced collaboration brings world class computing power and analytics directly into her decision making process.

In the Virtual Obeya, they work their way through different task and decision boards that brings up relevant knowledge and filters out less relevant items. **The space is gesture and eye movement enabled, so navigation is fast and easy.** The team follows the most recent agile and assisted decision making process. They discover, learn and challenge each other as they move through the different parts of the agenda. Interesting facts and stats are automatically indexed for rapid future reference according to each individual's personal interests and preferences.

High-performance collaboration hub

@ Smart Workplace (Interact with me there)

Being able to host and effectively support such complex teams is one of the key benefits of the ECO OFFICE.

The human and computer resources in the meeting play different roles.

In 2040, competitiveness is created in the intersection between robot-assisted decisions, AI / advanced analytics, and human judgement / "fingerspitzgefühl".

The human resources in the meeting are primarily concerned with setting direction, articulating questions and reflecting on possible emotional and social consequences of decisions made.

On the other hand, the robots (globots) and computer resources provide answers to questions, statistics and real time reality checks of assumptions made. They also run complex calculations and simulations.

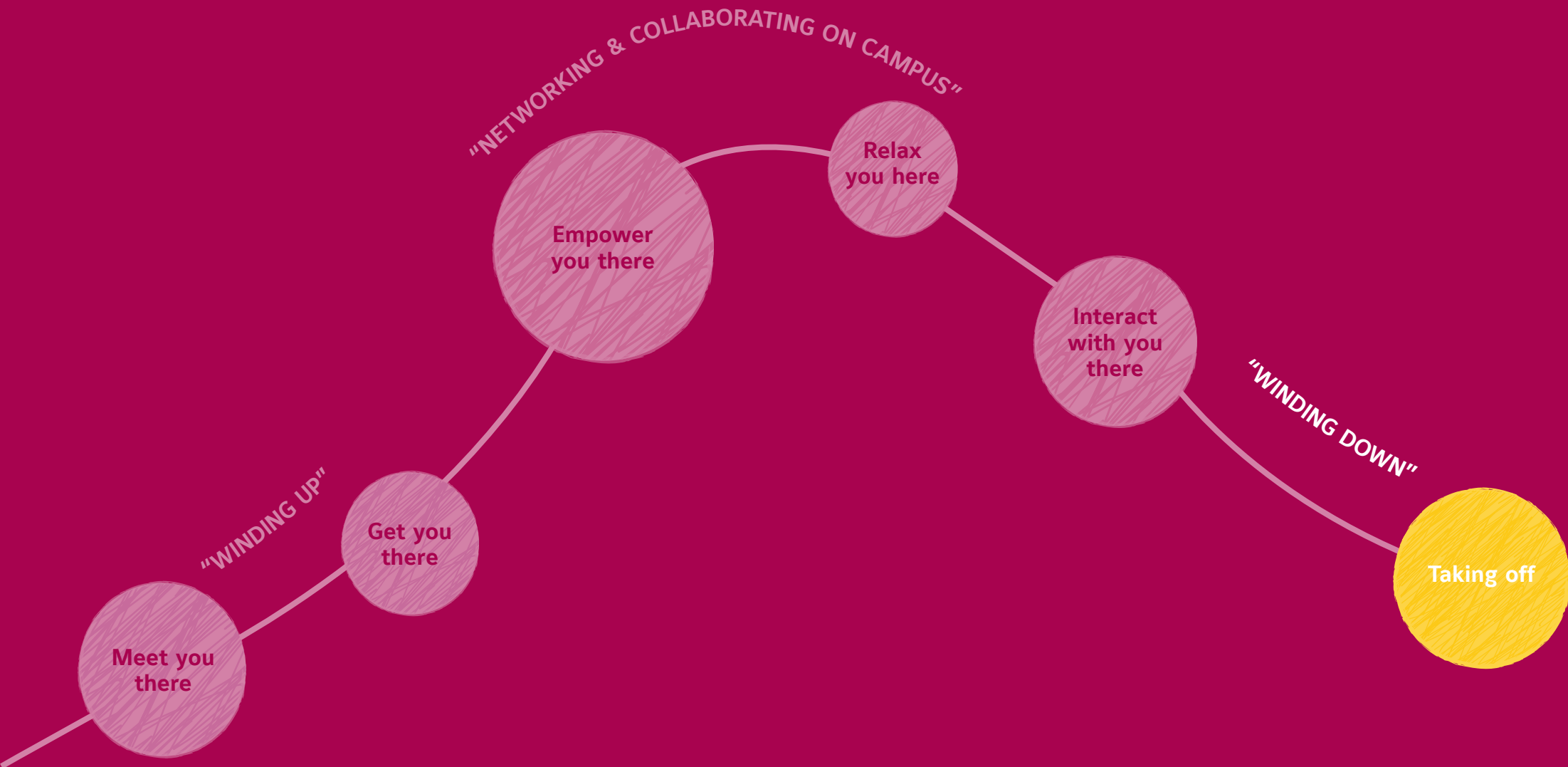
In this blend, **imperfections play the role of "the new black"** – a quest for meaning in a world that is increasingly analysed and perfected with a strong rationale behind. Nina reminds herself of the fact that the beauty of human craft is appreciated, and people like products and services with a human touch – just knowing there is a human behind makes a difference. Despite numerous advances, traceability of decisions and designs, people still buy into human stories.

For Nina, being able to host and effectively support such a complex team is one of the key benefits of the ECO OFFICE (also called iOffice or iFFICE). This is an example of a workplace that offers broad, proactive support along all three performance dimensions effectiveness (unprecedented goal fulfilment), efficiency (resource optimisation; doing the same with less) and expression (brand, image, inspiration, attract leading knowledge experts).

As Nina approaches the mingle zone, her smart watch gives a noticeable, but discrete buzz. She look down, and it turns out IServeU reminds her of her informal appointment with Paul. Maintaining her pace, Nina strides over to where Paul normally hangs out (the tech corner) as she had never planned for anything else. She lights up seeing Paul, "so good to see you, I was afraid you had left already" she tells Paul. Paul, having just been reminded about the appointment himself, plays the same game. They catch up that idea over coffee, and the idea turned out to appear very promising for the both of them, enough for it to be stored directly in the idea management system.

Upon leaving, she stops by the reception, charges her daily space utilisation onto her membership account – and just as she had hoped, the clothes she ordered only hours ago has already been delivered to the ePO Box. She checks and it's all there. She packs them neatly in her Robox ("autonomous robot box", meaning powered suitcase) that Steve has prepared and sent over earlier, and takes off. Her solar powered Robox follows her – 1 metre behind, like a small R2D2.

Winding Down



“Technology will grass you up...”

“Moving on and mobile collaboration.”

@ WARP WORKSPACE:

Get you there - The array of transport choices is likely to be very wide, and new business models will drive innovation.

Campus forest route
City maglev tube station on campus
Automated, connected minute taking
Personal work / infotainment screens on public transport
Pay-per-slot global expertise on demand with transaction logic
Unified task list managed by agent
48k screens
COLIBRIS electronic birds (Collaborative, Open-area, Learning, Internet-enabled Birds for Responsive Intelligence and Surveillance)

LEARNING

EXPERT
GUIDANCE

Public transport

@ WARP WORKSPACE:

(Get you there). While transport used to be exhausting, unsafe and overcrowded, in 2040 it is the opposite: public transport represents pleasant environment, extremely secure and a place you spend a minimum of time to go from A to B.

In 2040, the array of transport choices is likely to be very wide, and new business models will drive innovation.

Lower costs of energy and unmanned vehicles in combination with high costs of owning your own vehicle, plus high parking costs in densely populated megacities, benefits new sharing regimes. In essence – New Public Transport – on your own terms.

Getting out of the high performance collaboration hub, Nina pops in her headset with smart noise filtering and walks the «green route» over to the campus station on the City Maglev Tube that covers an increasing portion of the megacity.

On her way there, she sees the ever-increasing number of **drones and personal air transport vehicles** humming above her. Nina can't help wondering about how life used to be when basically all transport within a city took place on the ground level. Sure, she hears stories about the occasional drone accident, but the statistics are clear – while accidents still happen, the decline in street level accidents has been much more rapid than the growth in drone accidents. The emergency signal they emit when they on rare occasions fall from the sky can be heard from far away. And with the latest versions, they are actually able to assist each other, hooking into the mandatory emergency parachute, assisting a controlled descent or even safe transport to an open space suitable for landing.

Arriving at the station, Nina sits down in her seat, and activates the 30 inch 16k screen that comes with her transport subscription type. It instantly connects to her cloud, and Nina wonders for a second what she will do. Time for winding down a bit! She closes her eyes for an instant, processing this rather eventful day that started with the lack of sleep from yesterday's dinner. Nina is very happy with how the day went. Specifically, she is happy that decisions could be made and documented throughout the day, with limited need for time-consuming follow-up actions.

As the Maglev Train enters the evacuated tube and accelerates to cruising speed, iServeU notifies her of an important opportunity. "Now what?!" Nina thinks, a bit annoyed by being interrupted in her own reflection moment. It turns out that Susan Martinez, a world reknown expert, is available in case she wants to talk to her, at a rate of 350€ / hour, with a possibility to pay per 15 minutes. She has been trying to get in touch with her for weeks now, so she has asked iServeU to keep track of her availability through LinkedOut. It's expensive, but then again she is a world class expert on sustainable robotics. She authenticates the charge, and initiates the call. During the next 15 minutes, they discuss trends and priority actions in this field, Nina is very happy that she got to pick Susan's brain, if only for 15 minutes. It turns out that the call was very relevant for her social activities as well, not just for work.

Nina is now through the critical task list for the day, so iServeU suggests some other tasks important for her. This time, reviewing the plans for her husband's surprise party next month comes up. "That's great", Nina thinks – she had forgotten about that. She reviews that plan and is just able to finish it before she arrives at her stop, the airport. Family trip time!

DATA

World of trust
PRIVACY

SOCIETAL NORMS

GENDER
POLITICS

WE HAVE
CHOICE?

MAKE LIFE BETTER?



emotionally?
biologically?
wellbeing?

How can I get
appropriate
skills
for the new
technology?

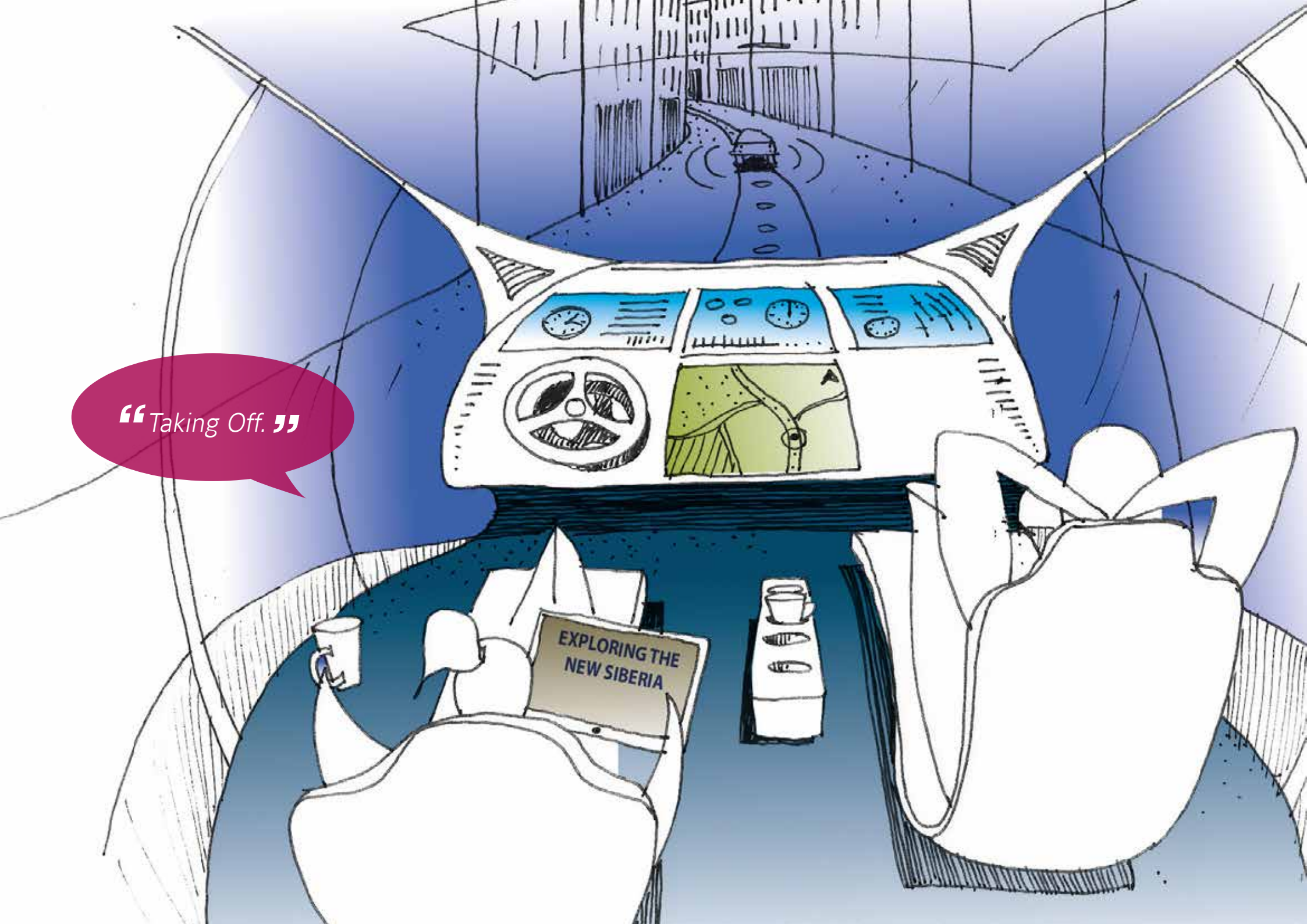


a different
relationship
with technology

WHAT
IS
THE
NORM?

Law abiding people
have nothing
to worry about...

“Taking Off.”



@ MY NEXT PLACE (Taking off):

Let's experience together

Robox – autonomous, solar powered robot suitcase with anti-theft mechanism and backup handle in case power runs out

Future aircraft

Being human; good citizenship recognition

Reuniting with family; Lee, Sarah and Sam

Large travel screen, that upon touch presents all the info she needs (and doesn't need) regarding her itinerary. Coupons.

Idea: Virtual, immersive vacation preview on large screen

3 or 4 day workweeks

Change catalysts the new labour market champions

Flexible retirement options, based on advanced, analytics- and scenario-based financial forecasting



EDUTAINMENT

BEING HUMAN

Winding Down

Time to go!

As Lee and their two children left home, their two electronic birds take off from their cage.

Getting off the **City Maglev Tube**, she stops for a second reflecting on how portable everything is these days. Her mother keeps reminding her of these annoyances of the past from time to time; the need to lug big portable computing equipment around, always looking for a nearby power outlet, always searching for connectivity... Nina is happy that these distractions are long gone – the future is here and despite confusing here from time to time, all in all the technological progress is a very good thing.

Nina walks over to the travel screen, which upon touch presents all the info she needs (and doesn't need) regarding her itinerary. It's all available on her personal devices as well, but Nina is a bit retro in this aspect. While browsing things to do at their destination, she downloads some food, event and shopping coupons to her account – sometimes she gets offers here that is not available on her phone. She then notices that her **Robox** emits a beep and gently places itself touching her left leg with a red blinking signal on top. Nina is comforted by this – she didn't notice that suspicious-looking person that was approaching her suitcase. While biometric technology would most likely leave her data safe, theft is sadly enough still a problem – and having all the clothes she bought for the trip stolen, would make her very angry.

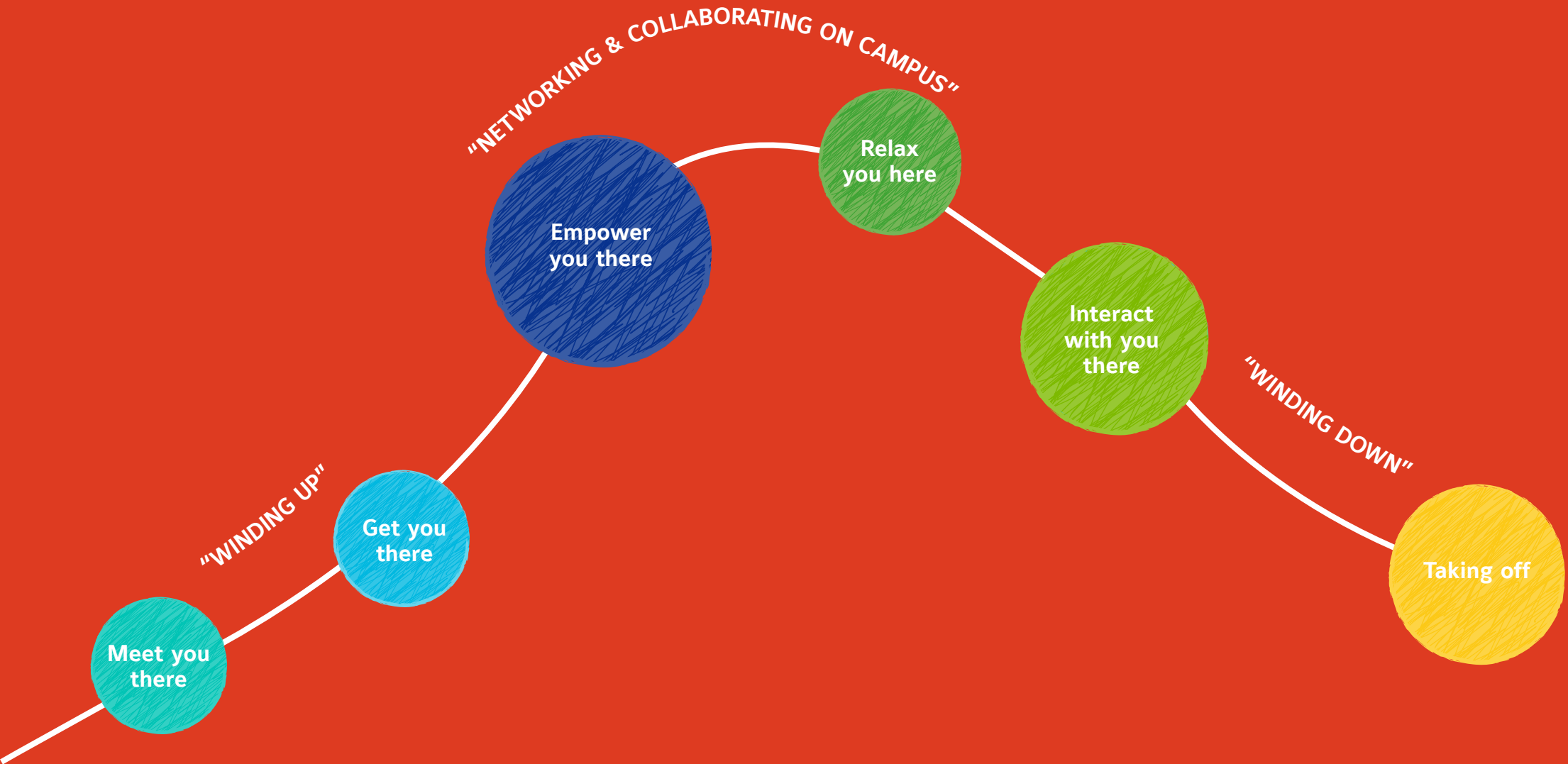
In the meantime, as Lee and their two children left home, their two electronic birds take off from their cage. They are called **COLIBRIS (Collaborative, Open-area, Learning, Internet-enabled Birds for Responsive Intelligence and Surveillance)**, adding another level of security beyond what can be achieved through Steve keeping an eye on things and **AAD OCTV (Automatic, Activity and Deviation-based Open Circuit TV)**. COLIBRIS are autonomous, micro-sized unobtrusive security drones disguised as pets.

When the family is home, they also proactively **monitor the microclimate** around their house, as well as air quality and CO₂, CO₂ and NO_x levels, besides a long range of potentially hazardous substances. Providing these data into an open database lowers costs as the family receives citizen credits for doing so. At the same moment, Steve initiates the thorough cleaning program called **PCWHE (Predictably Clean Welcoming Home Environment)**, to make sure the house is good as new when they return.

Nina finally sees Lee, Sarah and Sam just on the platform, and she smiles. Time to take off! They have been looking forward to this trip for a month now, they've done a good job reducing their carbon footprint and their **citizenship credits** are in the top category, so they can afford this little treat without feeling bad about it. Where are they going? Only Nina and Sam knows (if Sam has been able to keep his mouth shut, that is). They form this year's secret travel committee. They don't even know what they have in their roboxes – Steve has done the packing, with input from Sam and Nina. Time to go!

During the trip, Niina and her husband are (again) debating when they will retire. Lee argues that he would like to retire around 75, while Nina would like to go on for some more years – at least some kind of pro bono work. With the average number of working hours she has been putting in over the last decade, she doesn't really get neither bored nor exhausted. Scaling down is fine, but Nina is sceptical of leaving her profession for good. She is not done contributing quite yet – but then again, that could change in 30 years. Nina knows next to nothing about what 2070 will be like – thinking back 30 years and projecting that level of change 30 years into the future? She quickly dismisses that thought. Too much to think about. Now it's playtime!

Conclusion



Conclusion

The research has far reaching consequences for organizations, Corporate Real Estate Management (CREM) and Facilities Management (FM) functions

Imagine a future world of work in 2040 where the next generation of knowledge workers - 'digiratis', are totally in control of where, how and when they work. Our new report, the Smart Workplace 2040, describes a future day in the life of one of them, a digirati called Nina. Born at the turn of the new millennium, Nina is a digital native, she has never known a world without the internet and has grown up in an environment shaped by advances in digital technology and driven by societal transformation that places a premium on individual well-being. Nina and other digiratis like her have high expectations around choice, experience and fluidity when it comes to work. She operates like today's entrepreneurs, relying on collaboration with experts and she isn't tied to any specific office. For Nina and millions of other digiratis, work is something she does, not a place that she commutes to.

Nina lives in a smart home that adjusts light, temperature and ambiance according to her family's bio-health indicators. Intelligent machines carry out household chores such as cleaning or ordering and preparing food to match the family's daily nutritional requirements.

Nina doesn't commute to work, her patterns of work are radical compared with today, they aren't fixed around a place or timetable and she has a variety of choices about where to work. Her work schedule is fluid: often it's at home; sometimes it's with co-workers on an Eco-Campus. When Nina wants to reward herself she can choose to visit a 'Trophy Office' where she can meet other digiratis to network in a highly experiential environment.

Far from being the scenes from a science fiction movie, these scenarios are the result of sophisticated future trends research carried out by Global Workplace Solutions (GWS), verified by industry experts.

The Smart Workplace 2040 will be radically different and redefined by:

- **Adaptable, radical working patterns** which will meet private needs and family constraints where there are no set hours for work, as long as the work is done. A typical day may include a blend of mobile productivity; virtual, holographic and face-to-face collaboration; offline time and quality time at home. Flexible contracts will be the norm.
- **Choice** - workers will decide where and how they want to work. Through smart, connected home technology that automates household chores and analyses productivity, the home will become the main place of work. digiratis will also have a broad choice of alternative work venues.
- **Location - 'Trophy Workplaces'** will be offered to workers seeking highly experiential environments to meet and network with other individuals, making visits to the "office" a luxury and a form of reward.

Conclusion

The Smart Workplace 2040 will be radically different

- **Entrepreneurship will be the norm** – technology will enable access to a wide network of skilled entrepreneurs who will flourish in incubator like workspaces.
- **Collaboration** – will be a major driver of enterprise performance and will be a core competency for every employee. High levels of interaction will be supported by team workspaces that have in-built collaborative technologies such as holographic telepresence.
- **Services** – *human services* which will be seen as a premium offering: support services will enhance the experience as users interact with their surroundings. For example, digiratis will receive coffee that is blended in accordance with mood, body temperature and blood pressure.
- **Wellness** – digiratis' wellness will be prioritized over work with more time devoted to healthy (sporting) activities and personal time.
- **Networks** – digiratis will rely on an extremely broad network of experts to carry out their work. Tasks will be shared amongst this team of experts users to "crowdsource" product ideas and co-create new features.

There is no scientific methodology to clearly assess what the future holds, but there are ways we can anticipate the impact of major societal and technological transformations and evolutions in our world and measure the impact of these changes and developments on our industry. This is what this report on the future of work attempted to do, backed up by the reviews and recommendations of our twenty eight experts.

We concluded that the world in 2040 will be all about:

- **CHOICE**
- **FLUIDITY**
- **IDENTITY**
- **CARE**
- **EXPERIENCE**
- **INTUITIVENESS**

Conclusion

Our role in our industry will be to grasp this future and embrace change

We assessed, using our roadmap of trends, that we – as a society – will be taking a different direction from the one we have today, one which will be focused on aligning our way of living to the planet's constraints and limitations, adapting to rapid and radical change in our working patterns, and evolving towards a life more focused on health.

As a consequence we can conclude that by 2040:

- **The search for authenticity and humanity** will be core to our ways of living: back to basics, back to our roots, like a renaissance of our society
- **The community will be our world:** we live and grow amongst a community, sharing and giving, being more participative
- **Social ties will be used as a driving engine:** we rely on our network to work and live
- **Wellness and wellbeing will be a priority:** at the core of our life, more private time is dedicated to healthy activities
- **Technology will play an important role in our life:** a major part of our day to day activities are linked to a technology innovation

Our role in our industry of Facilities Management and Real Estate will be to grasp this future and embrace change by decoding users' experience and transforming our service offering to match in real time users' expectations and demands. The role of technology to support this change will be critical and failure of the complex system is neither an option nor an escape to slow down the transformation of our industry.

Organizations will need to adapt to the changing demands, aspirations and expectations of end users' and our industry of Facilities Management and Corporate Real Estate to the demand of both end users and customers:

- **Adapt** service delivery models to fit, proactively and in real time, with the increasingly complex requirements of digiratis regarding: Choice; Fluidity; Identity; Care; Experience and Intuitiveness in their daily lives
- **Redefine** real estate models to meet the demands of digiratis wherever they are and at any given time of the day
- **Redesign** working environments (single facilities, shared facilities, local amenities, service delivery and support services) to meet increasing real time digirati demands
- **Digitize** simple service delivery and support services to focus on human centric services that enhance digirati performance. This would include developing intuitive web and mobile interfaces as well as invisible 'shy' technologies (eg. motion detection) to track user activities and experience.

By 2040, we will not own facilities, we will consume them. Our Real Estate portfolio will resemble a network of workplaces, and our workplace will be a coworking environment spread across an eco campus. The Smart Workplace 2040 anticipates important changes to our working environment. A concerted response from CREM and FM, Workplace and HR functions will help to ensure that businesses are fully prepared for the changes ahead.

Recommendations

Technology will be ultra predominant in every aspect of our daily lives. The predicted turmoil of change we are facing towards 2040, calls for a major transformation in our society, our lives, in organizations, as well as in the way we design and operate our shared workplaces. This transformation will include:

Human Resources:

- Shift towards a large proportion of “flexwork” contracts to enhance the mobility of employees and entrepreneurs and support a range of unconventional and radical working patterns
- Radically dismantle the 9 to 5 model for a total flexible working approach to meet fluid annual targets and employees expectations

Organisational Structures:

- Train senior managers to work with a highly dispersed team across a wide geographical area and equip them with advanced technological and software solutions
- Transform employee behaviours to adopt a flexible working mode and never rely on one single location to carry out their work

Technology:

- Create packaged solutions and on demand solutions and products to meet employees highly mobile behavior and market’s innovations – short term vs long term technology and innovation roadmap
- Integrate the most advanced technological solutions and powerful analytics on the fly and be prepared to adapt tools and cloud services to sustain high productivity, empowered work patterns and demands

Health:

- Provide health services in the workplace model or at close proximity to sustain the wellbeing of employees highly affected by “burn out” syndromes in 2040 and focused on their wellness, physical and mental health
- Allow highly flexible working hours to offer freedom of choice to employees



**FLEXWORK
CONTRACTS**



**TRAINING TO MEET
EMPLOYEES CHOICE**



**WELLNESS
& WELL BEING**



**SOFTWARE BASED
PROCESS DELIVERY**

Recommendations

The turmoil of change we are facing towards 2040, calls for a major transformation in our industry of facilities management and real estate, and the way we design and operate workplaces:

Facilities Management:

- Shift towards enhanced user specific services: focus on end users needs and demands, and human services as a premium offering
- Develop technology based services: technology and software user interfaces, robotic solutions, intuitive software applications

Real Estate:

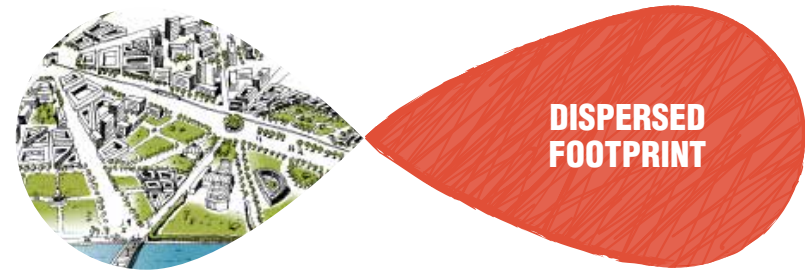
- Consider a dispersed real estate model: with mixed facilities and multi purpose environments to allow fast response to utilization patterns and demands
- Design shared facilities to answer a broader demand from users dispersed across a large geographical region: co working facilities, access to local collaboration hubs, leisure and entertainment facilities within close amenities

Workplace:

- Design social, cohesive and adaptive working environment empowering users and teams across different work contexts and collaboration modes
- Develop intuitive user interfaces to enhance user experiences: immersive solutions and services, technology based services

Service Delivery:

- Create user focus applications: a range of services designed around the web and mobile interfaces to respond to a new demand of highly connected users
- Integrate invisible shy technologies in facilities: to track user activities, record user experience and respond in real time to user demand without intrusive technologies within the environment



Sources

- **iCocoon:** <http://www.designboom.com/technology/icocoon-gaming-and-virtual-reality-pod/>
- **Unicyclo Noah:** http://luxurylaunches.com/transport/the_noah_is_a_two_tired_unicycle.php
- **Face recognition:** <http://credenzeinfra.com/face-recognition-system.php>
- **Chip Implant:** <http://www.fastcompany.com/1773065/vibedecks-youtube-service-fake-apple-stores-google-post-riot-social-media-crackdown-ch>
- **EU-funded robotics projects:** http://europa.eu/rapid/press-release_MEMO-13-11047_en.htm
- **Nanotubes:** <http://www.igi-global.com/newsroom/archive/carbon-nanotubes-will-change-world/1751/>
- **Bionic legs:** <http://ted.us1.list-manage1.com/track/>
- **Moore's Law:** http://en.wikipedia.org/wiki/Moore%27s_law#Major_enabling_factors_and_future_trends
- **Sensor-enabled medicine:** <http://techtrends.accenture.com/us-en/business-technology-trends-report.html>
- **Robotic exoskeleton:** <http://www.bbc.com/news/science-environment-27812218>
- **Singularity & Ray Kurzweil's predictions for 2045:** http://en.wikipedia.org/wiki/Predictions_made_by_Ray_Kurzweil#2045:_The_Singularity
- **The evolution of robotics:** https://www.bcgperspectives.com/content/articles/business_unit_strategy_innovation_rise_of_robotics/
- **Artificial intelligence meets the C-suite:** http://www.mckinsey.com/insights/strategy/artificial_intelligence_meets_the_c-suite
- **Workplace shifts:** http://www.cbre.com/o/international/AssetLibrary/Genesis%20Report_Exec%20Summary_1029.pdf
- **Decoupling:** http://www.mckinsey.com/Insights/Public_Sector/The_Great_Decoupling
- **Manager and machine:** http://www.mckinsey.com/insights/leading_in_the_21st_century/manager_and_machine
- **Robots as managers:** <http://newsoffice.mit.edu/2014/want-happy-worker-let-robots-take-control>
- **A Room Where Executives Go to Get Help from IBM's Watson:** <http://www.technologyreview.com/news/529606/a-room-where-executives-go-to-get-help-from-ibms-watson/>
- **EU funded robots:** http://europa.eu/rapid/press-release_MEMO-13-11047_en.htm
- **Shy Tech:** <http://www.trendone.com/en/trend-services/trenduniversum/mega-trends/mega-trend-detail/shy-tech.html>
- **Computing power:** «Data centre in a refrigerator»: <http://rt.com/news/166680-hp-silicon-photonics-computer/>
- **Hyperloop revolutionary mass transit system:** <http://www.wired.com/2015/02/construction-hyperloop-track-starts>
- **Virtual Obeya:** http://www.linkeddesign.eu/files/LinkedDesign_Deliverable_5.1.pdf + <http://www.linkeddesign.eu/>
- **Estimate of the probability of computerisation for 702 detailed occupations:** <http://www.oxfordmartin.ox.ac.uk/publications/view/1314click?u=07487d1456302a286cf9c4ccc&id=095cbcea71&e=272586cfff>
- **Cricket protein:** exo.co
- **Shorter workweeks:** entm.ag/1naSDBU
- **The good country index:** bit.ly/Ts2UOX
- **High performers and technology access :** bit.ly/1sXPZDw
- **Robots tasting wine:** tcrn.ch/1ymGCRs
- **People would rather take orders (control authority) from a robot than a person:** http://interactive.mit.edu/sites/default/files/documents/Gombolay_RSS_2014.pdf
- **AI meets the C-suite:** <http://email.mckinsey.com/19843eefdlayfousib5foegiaaaaabzdevd7ddg7wiyaaaaa>
- **Robot Pepper – Personal Assistant:** <http://www.japantimes.co.jp/news/2014/06/05/business/corporate-business/softbank-unveils-pepper-worlds-first-robot-reads-emotions/#.VBwYJ5SSy4d>
- **Happiness:** http://en.wikipedia.org/wiki/Gross_national_happiness and <http://www.grossnationalhappiness.com>
- **Grocery Shopping in 2065:** <http://www.fastcoexist.com/3036119/this-is-what-your-grocery-store-will-look-like-in-2065>
- **Huge 3D Printng:** <http://inhabitat.com/large-3d-printer-can-print-an-entire-two-story-house-in-under-a-day/>
- **Digital Advantage:** https://www.capgemini.com/resource-file-access/resource/pdf/The_Digital_Advantage__How_Digital_Leaders_Outperform_their_Peers_in_Every_Industry.pdf

