EUINNOVATE

D5.3 Detailed Future Scenarios report

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Forum for the Future

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Executive summary

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The scenarios in this report represent very different worlds & paradigms. The report uses qualitative descriptions and narratives to paint a picture of these worlds.The locus of interest is in the transition to sustainable lifestyles in Europe by 2050 and the role that users and entrepreneurs play in that transition.

The scenarios highlight a number of key future shifts, that when combined could fundamentally reconfigure the culture and dominant paradigm of Europe

1. Sustainability is a dynamic state of continual transition that's best described by the social conditions in society.
2. Sustainable lifestyles are interdependent, nested systems within a sustainable society - and are also dynamic by extension.
3. Achieving and sustaining dramatic resource efficiencies transforms capitalism.
4. Change takes place at an uneven pace of change along scenario pathways to 2050.

The scenarios also highlight that there is an increasingly important and role for users to influence the transition to sustainable lifestyles. Specifically this report has found that you can describe the role of future user-innovators in transition according to the following:

1. the significance of their contribution to sites for innovation for transition

2. their contribution to processes of innovation for social change:

3. whether they play an active, passive or resisting roles in innovation for transition and or are operating at an individual or collective level in relation to (1) and (2) above.

They are more likely to result in paradigm innovation and the innovation of governance and social structures if:

•the mind-set, values, skills and aptitudes of innovators enables system innovation and is aligned with sustainability (e.g. self-transcendent values, personal resilience)

•processes of innovation/ ways of working transcend traditional boundaries, flows and power structures as this has greater potential to forge new cultural practices.

•the way we frame and conceptualise users is expanded to take a large view on the meaning, one that reflects where power and agency to influence change is acknowledged.

Key questions the scenarios raise

What the scenarios make clear are that there are a number of future shifts are required in society for sustainable lifestyles to exist, and to enable transition to happen. The scenario content provokes new questions about how those transitions could emerge:

- How can you unlock potential of users, entrepreneurs, communities and citizens to play a role in the transition to a sustainable society?
- How can we expand the definition of users and entrepreneurs to fully reflect the potential they have for enabling sustainable transitions and ultimately systems change?
- What is the role of policy in managing the transitions to sustainable lifestyles? How can policy and management be a site of innovation as well as enabler of innovation for others?
- What will be the dominant paradigm that emerges from the future? How can that be catalysed and how can the transition/break down and shift of society be best managed? How can there be coherence across Europe to steward in the next paradigm?

It is important to keep in mind there are no answers to these questions as the future is unknown. But the scenarios provide rich and powerful stimulus through which to explore these questions.

Background to this report

The following document curates the future scenarios as developed as part of the EU InnovatE project. This scenarios report draws on empirical work to build on and identify measures for the SPREAD Sustainable Lifestyles 2050 Scenarios funded by the European Commission's Seventh Framework Programme. This work was carried out as part of Work Package 2 & 5 in EU-Innovate.

This document represents our workings for WP2 & 5, specifically activities 2.1 – 2.5 and 5.1-5.3 It aims to summarise the augmented future scenario and associated analysis as part of both work packages.

We've complied these findings based on:
• collaborative work with WP2 partners
• collaborative work with WP5 partners
• involvement of users, via the EU Innovate FutureShaper network
• Forum for the Future's futures expertise and analysis

This document is about cataloguing the future scenarios and making them available for others in the project to use.

This scenarios report will be tested with experts ahead of a final report submission at the end of 2016, D5.6 Expert evaluation report on detailed future scenarios.

The SPREAD scenarios

The SPREAD scenarios project (2012) defined four diverse futures for a 2050 Europe in which there exist sustainable lifestyles. Every future is normative, and so desirable, and describes a European society in a world where environmental boundaries are met. The measure of sustainability shared across all scenarios is the mass of resource consumption in Europe; on average under 8,000Kg per person per annum. The current average resource consumption in Europe was 40,000Kg in 2010. The challenge is significant to transition to any one of these futures.

The SPREAD Sustainable Lifestyles 2050 Scenarios explore if and how a paradigm in which consumption continues to grow through increased technological efficiency can be consistent with absolute reductions in material resource consumption. The measure of sustainability shared across all scenarios is that the mass of resource consumption is, on average, under 8,000Kg per person per annum. As the current average resource consumption in Europe was 40,000Kg in 2010, the challenge is significant to transition to any one of these futures.

SPREAD was a European social platform for exploring the relation between lifestyles and sustainable futures in which a cross-section of stakeholders from business, research, policy and civil society participated. Running from January 2011 to December 2012, it constructed four diverse futures for a 2050 Europe in which there exist sustainable lifestyles and that "(…) specifically take into account the complex and multifaceted nature of transitions (also called system innovations) which not only require the development and use of new technologies, but also involves changes in user practices, policy and regulation, infrastructure, networks, and institutional change.". The scenarios help to "(…) give insight in the various complex processes at work in system change [and] driving forces and main elements of promising combinations of technological, societal and institutional change".

1 www.sustainable--lifestyles.eu. Accessed June 2016.
2 Boelie Elzen, Frank W. Geels, and Kenneth Green, eds., *System Innovation and the Transition to Sustainability: Theory, Evidence and Policy* (Cheltenham, UK ; Northhampton, MA, USA: Edward Elgar Pub, 2005), pg. 4.
3 B. Elzen, F. W. Geels, and P. S. Hofman, "Sociotechnical Scenarios (STSc): Development and Evaluation of a New Methodology to Explore Transitions towards a Sustainable Energy Supply," *ResearchGate* (October 1, 2002), accessed June 30, 2016, pg. 10.

The EU InnovatE scenarios

The SPREAD 2050 work has been used as source material for the EU InnovatE project, specifically WP2 & 5. The scenarios have been augmented to understand the short and long term role of users in enabling sustainable lifestyles across Europe. These have been created through collaboration between WP2 & 5 partners as well as with input from FutureShapers across Europe. The resulting work is a revised set of scenarios that are summaried in this document.

This research demonstrates an innovative and appropriate use of scenarios that has enabled the exploration of possibilities for the future that would otherwise have been closed to us.

The need to transition to sustainable lifestyles is based on the premise that mass consumption is unsustainable and that sustainability is desirable. One of many examples highlighting the 21st century challenges for economies, environment and society is Flavin (2011) of the Worldwatch Institute who states "*The economies of mass consumption that produced a world of abundance for many in the twentieth century face a different challenge in the twenty-first: to focus not on the indefinite accumulation of goods but instead on a better quality of life for all, with minimal environmental harm*".

Another is Beddington's (2010) perfect storm in which demand for water, energy and food are on a trajectory heading for disaster. The SPREAD project (2012, D4.1) found that *"modern European lifestyles are unsustainable. They have become associated with overproduction and overconsumption. The impacts of our lifestyles are putting too much pressure on our natural resources and have adverse environmental, economic, social and health effects."*

The scenarios represent very different worlds & paradigms. It's very hard to put numbers to this - but the use of imagination and story, best describes these worlds. For this reason this document focuses on the qualitative description of the scenarios. The locus of interest is in the transition to sustainable lifestyles in Europe by 2050 and the role that users and entrepreneurs play in that transition. The analysis implies that social structures and governance should be prioritized in the transition towards sustainable lifestyles.

Next steps

This is an initial report that will be tested with experts (FutureShapers and organisations/businesses) from across Europe during the autumn 2016 as part of WP8 activities. The aim of this is to develop this content into a series of practical tools and activities

Some design work will be required to put the scenarios into a useable form for practitioners. The purpose of this being to enable societal impact from the EU InnovatE project. It is anticipated that the scenarios are great materials for:

- Users & entrepreneurs to reflect on their role in creating sustainable change - past, present and future

- Students looking to understand the future and the role users and entrepreneurs can play in enabling transitions and ultimately in system change

- A creative tool for acknowledging the importance of governance in society and starting a conversation about how innovation in that domain could be fosters

- Those who want to be deliberate about the transitions required towards a sustainable future. It is a tool/ provocation that can foster collaborative activity towards a sustainable transitions

We want to test the different use cases ahead of writing up the final scenarios report D5.6, due in month 36.

Approaches used in the scenario augmentation & development

Key stages & decisions taken

1. **Editing the SPREAD scenarios** – understanding what is relevant for the EU innovate project

2. **Rephrasing the scenario axis**

3. **Use of the Multi Level Perspective** (MLP) - in view of the fact it hasn't been used as a prospective tool before.

4. A methodology for **identifying and understanding the nature of user-innovators** within the scenarios and pathways, and the part they are playing in creating change.

5. To **evaluate user-innovators' part in driving change** towards a sustainable society, agreeing that the augmentation will focus on *both* the scenarios *and* the scenario pathways.

6. **Exploration of landscape factors**

7. **Transitions pathways and narratives**

1. Editing the Spread scenarios

- The Multi Level Perspective was used to draw out aspects of the scenarios and pathways that were most relevant for the EU-Innovate Project. (see D2.2 for full details)
- From the rich detail of the Spread scenarios and pathways, we drew out the most defining characteristics and the moments at which significant change occurred along the pathways.
- The objective was to create a simple 'scaffolding' for each scenario and pathway upon which to challenge and investigate that scenario, and to build a deeper picture of the domains (food, energy, mobility and living) and the role of user-innovators.

2. Rephrasing the scenario axes

Further to an MLP analysis by TU Eindhoven (D2.2), the scenarios axis were rephrased to provide clarity and usability for the EU InnovatE project.
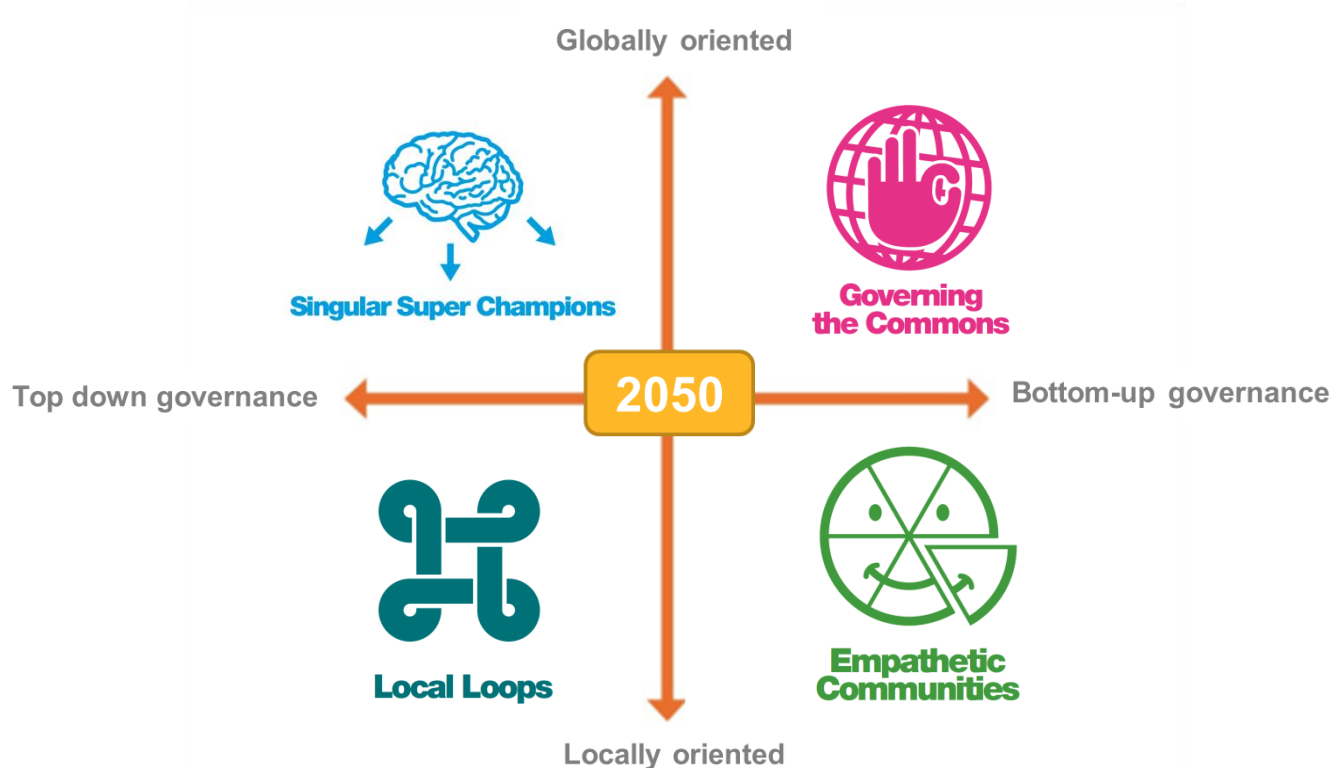
3. Use of the MLP

- The MLP has been used implicitly rather than in an explicit way in the scenario augmentation. It has underpinned our analysis of scenarios and pathways; used to explore the landscape, regime and niche levels and the dynamic interactions between them.

- First, the MLP was used to draw out aspects of the scenarios and pathways that were most relevant for the EU-Innovate Project. This content was then used in workshops with the Future Shapers Network.

- Second, we used the three levels in the MLP to investigate the detail of the domains and the role of user-innovators in those domains: food, energy, mobility and living.

- The methodology used to identify and explore the role of user-innovators was designed to work alongside the MLP framework. Using techniques from the discipline of design, we created a series of imaginary user-innovator 'personas' to represent the niche players that might play a role in pivotal moments of change along the scenario pathways and that might be driving change inside the 2050 scenarios. These personas were borne of an analysis of the landscape, regime and niche levels in the scenarios and on the pathways and where/ why/ how pressure for and resistance to change might be taking place.

- These personas have provided a 'window' into what might be taking place at the niche level and a means for interrogating interactions within that level, between the niche and regime and between the niche and landscape levels.

- See Appendix 1 for further details about of stages 1-3.

4. Methodology for exploring user-innovation

- Decision to incorporate insight from the FutureShapers Network, alongside academic research and analysis, during two workshops.

- As a network of user innovators, the FutureShapers' have a tacit understanding of the niche level today, and the motivations, activities, behaviours, needs and challenges they encounter today. The workshops sought to use these first-hand experiences to strengthen our investigation of user innovation in the scenarios and on the scenario pathways.

- The workshop objectives were:

    - To enhance the scenarios by drawing out the sources of innovation and user-innovator interactions, using input from participants.
    - To engage participants in analysing what enablers and barriers could support user-innovators to drive towards the four scenarios.
    - To build enthusiasm and develop the group's sense of purpose in participating in EU-Innovate and Future Shapers.

- Analysis of the roles developed in the workshops were then matched with the WP1 user typologies (historically rooted) to explore if they work in a future context.

5. Focus on scenarios + pathways

- Decision to explore the types of innovation that are needed to move Europe towards a sustainable society by exploring the pathways from 2013 to the sustainable scenarios in 2050, as well as exploring the scenarios themselves.

- The dual focus on both scenarios and pathways has enabled us to:
  a. test our assumptions about the types of innovation needed to enable sustainable life-styles
  b. 'future proof' existing typologies of user innovators by comparing and contrasting behaviours/ types of user innovation in the past with behaviours/ types identified in the future
  c. to make inferences about the role of user innovators in creating system change for a sustainable society by reviewing the findings generated in (a) and (b) against the insights gained from using the MLP to further develop the scenario and pathway content.

- New MLP transition pathways and narratives were developed aiming to illustrate and explain the scenario transitions.

6. Exploration of landscape factors

- A qualitative analysis of the augmented scenarios was undertaken to provide contextual information to express the nature of changes to the constitution, legislature, executive and judiciary in each scenario. This was necessary because the quantitative values and rankings of the indicators in step 4 alone did not substantiate their relevance for enabling sustainable lifestyles within and across the scenarios. Further detail was required about the actors involved and the outcomes produced, situated within events on the scenario timelines and the values and paradigm of each society.

- This process used the narrative captured from the scenario augmentation process to qualitatively assess how changes to the constitution, legislature, executive and judiciary of the scenarios enable low levels of resource consumption across energy, food, housing and mobility. This involved:

  - development of qualitative narrative for the purpose of identifying the potential for sustainable innovation in the four domains, energy, food, housing and mobility
  - production of qualitative narrative to describe the social conditions in each scenario and how innovation affects and is influenced by those conditions in 2050 production of narrative to describe wealth, health, economy, power and identity in the scenarios

7. Transition pathways & narratives

- Use multilevel perspective to further evaluate future shifts towards the 2050 scenarios

- This aimed to understand in more depth, the changes that take place to arrive at the 2050 scenarios; the most impactful opportunities to accelerate transition an the respective roles and contributions made by user, entrepreneur and business innovators and innovations.

- It also aimed to understand the role played by government, policy and management along the scenario pathways at different scales of governance across the EU. It used interactive working sessions with experts in Forum for the

- Further to analyse the SPREAD scenarios and drawing on the previous WP2 MLP analysis of the scenarios and the WP1 conceptualisation of active roles of users in shaping transitions.

Key shifts illustrated by the scenarios

Key future shifts illustrated by the scenarios

1. **Sustainability is a dynamic state of continual transition that's best described by the social conditions in society.**

1. **Sustainable lifestyles are interdependent, nested systems within a sustainable society - and are also dynamic by extension.**

1. **Achieving and sustaining dramatic resource efficiencies transforms capitalism.**

1. **Change takes place at an uneven pace of change along scenario pathways to 2050.**

Key future shifts

1. **Sustainability is a dynamic state of continual transition that's best described by the social conditions in society**

Sustainability and sustainable lifestyles are dynamic states that are socially constructed, and that can return to unsustainability. A human society that's on a sustainable footing is, therefore, one that has developed the ability to self-regulate:

- •'sustainability' is not a set of outcomes for society; it's a capacity or a function of society that can be realised in many ways
- •it is not an end state; it is socially constructed and dynamic, and can be both developed and lost
- •as society is in a constant state of flux, everything is dynamic so there will never be an end state.

While the state of the environment and society is quantified in the SPREAD scenarios - and while these measures are important indicators of a society that can sustain itself over the long-term, it is the ability of a society to evolve without overstepping these constraints that signifies a sustainable society.

While significant technological innovation occurs in all four SPREAD scenarios, social structures, governance and policy are vital for achieving and sustaining very low resource consumption. This is because they determine the ability of society to continually reconcile environmental, material and social priorities to achieve enduring equilibrium and advancement. While they impact material consumption within individual domains, they are most impactful at a whole society level. At this level, they can create additional efficiencies through greater systems integration across domains and influence the ways of organising, goals and paradigm of society as a whole.

As such qualitative aspects of the scenarios are detailed later in the report

Key future shifts

2. Sustainable lifestyles are interdependent, nested systems within a sustainable society - and are also dynamic by extension

For sustainable lifestyles to exist in the SPREAD 2050 scenarios, individuals and households are - on average - using their personal agency to participate in and contribute to super-efficient consumption across all domains of consumption. In many cases, this is driven by new mind-sets and goals within and across the domains of consumption, and across society as a whole. It is difficult to conceive how this willing and sustained contribution to systems - and indeed how the systems themselves could facilitate such participation - without more fundamental changes across society as a whole.

Key future shifts

**3. Achieving and sustaining dramatic resource efficiencies transforms capitalism.**

WP1 identified four phases of consumerism/capitalism. The future scenarios help to provide stimulus for exploring what paradigm could proceed the previous.

Inventing consumerism (1850-1913)

Contested Consumerism (1914-1950)

Technocratic Consumerism (1950-1989)

Participative Consumerism (1989-present)

Singular Super Champions

Local Loops

Governing the Commons

Empathetic Communities
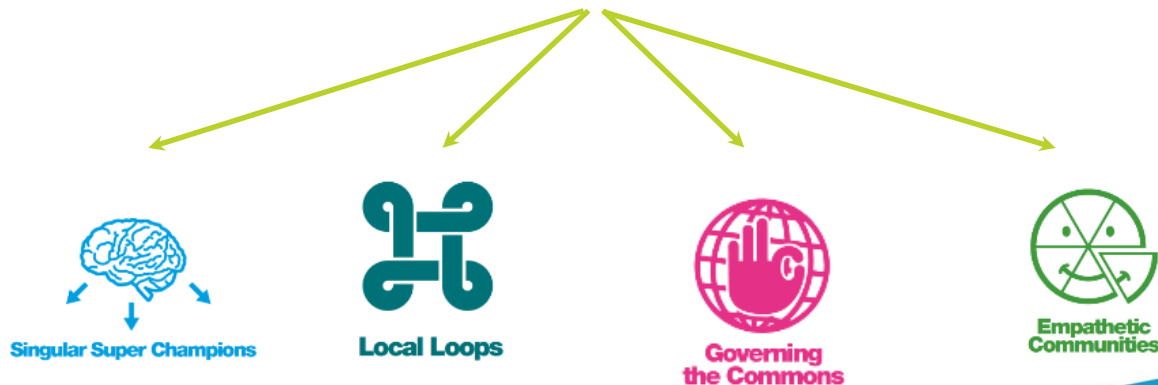
Key future shifts

The figure below shows the material footprint of the average European in 2050 for each scenario. Mobility and food show the greatest range and housing and energy show the smallest range respectively.

These variations reflect the cumulative impact of events on the scenario pathways on shaping those domains, and changes to the material economy in the scenarios. Food production is less efficient in Local Loops and Empathetic Communities because it takes place at a local scale. Housing, mobility, energy generation and the production of goods are all, also, localized and optimized geographically. Mobility is relatively high and food relatively low in Singular Super Champions because this is a globalized scenario in which goods are produced super efficiently at scale and people travel large distances for work.
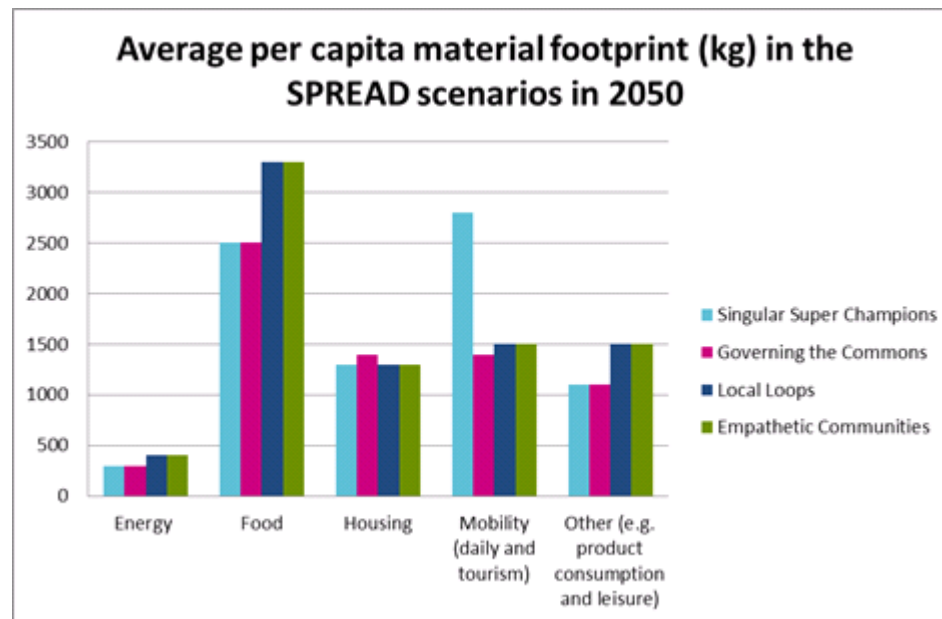

Figure: material footprint of a European in 2050 in the augmented SPREAD scenarios

Key future shifts

As a consequence the scenarios help to explore how the status quo myths, goals, identity, mindset and approach are disrupted and questioned through these scenarios. So there is a shift beyond the current held assumptions of society:

2016:
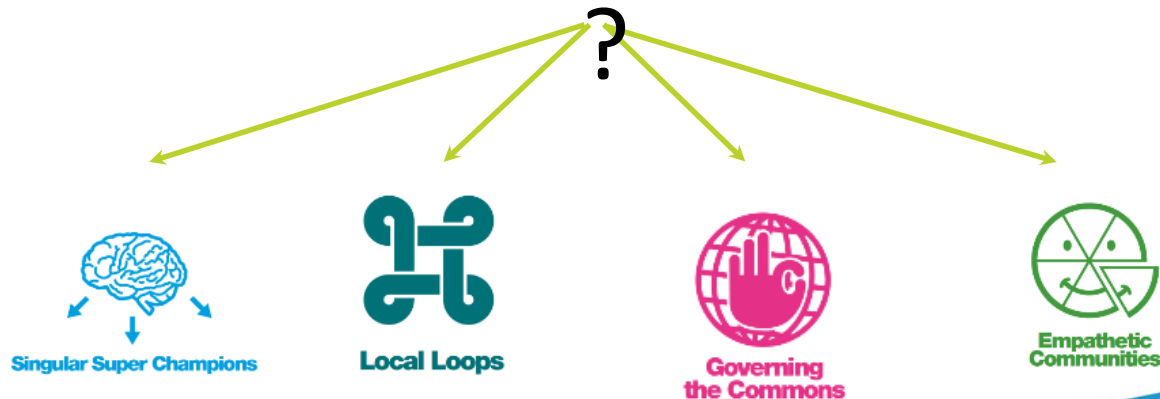
Myth: humans are the supreme species on earth
Goal: economic growth at all costs
Identity: with nation states (or fractured)
Mindset: caring, empathetic
Approach: economic growth and technological progress
Unsystemic approach: linear & mechanist

?

Singular Super Champions   Local Loops   Governing the Commons   Empathetic Communities
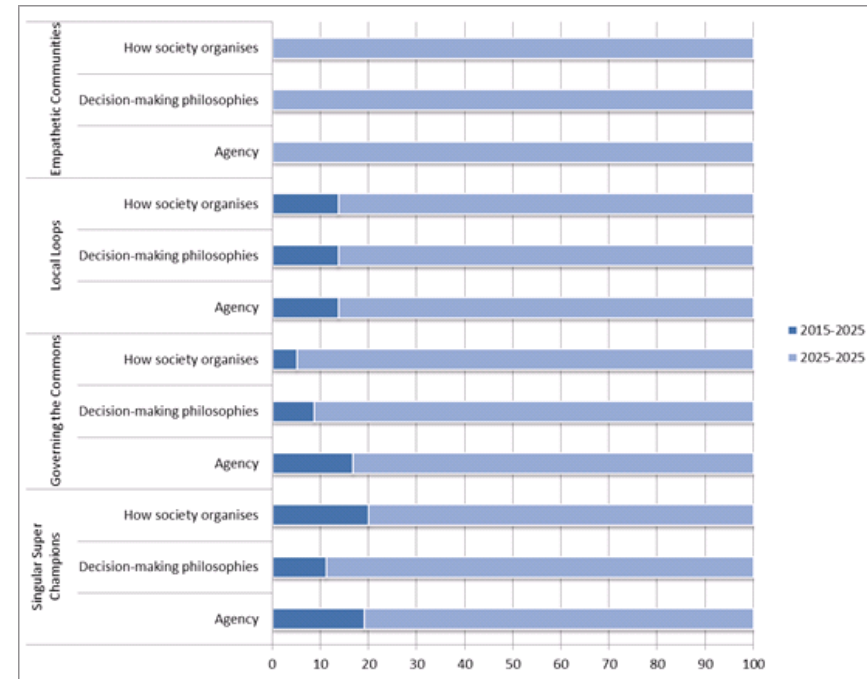
Key future shifts

4. Change takes place at an uneven pace of change along scenario pathways to 2050.

Complex change occurs on the scenario pathways to 2050, which means that the proportion of change that takes place between 2015 – 2025 and 2025 – 2050 varies across all scenarios.

The proportion of total change that takes place across the scenarios 2015 - 2025 does not necessarily represent a desirable and/ or useful, prospective indicator of resource efficiency and sustainability. In Governing the Commons, while changes in agency and how society organizes occur by 2025, long-term environmental policies are not introduced until late in the timeline. The shift towards sustainable lifestyles does not occur until decision-making philosophies change, bringing about stringent environmental legislation.

In both Governing the Commons and Empathetic Communities, changes in agency and how society organizes bring about informal changes to the constitution, executive and judiciary of those societies that are eventually institutionalized, resulting in changes to its legislature. The Local Loops scenario sees the early introduction of a comprehensive, European-wide policy framework for guiding economic development and environmental management, and experiences gradual, progressive change along the pathway. This is the result of a change of discourse about economic development in Europe in response to a period of prolonged, low growth and the emergence of successful, alternative economic models in certain European regions.

Key future shifts

When combined, these shifts have the cumulative effect of catalysing the the cultural changes that take place that enable sustainable lifestyles, which include:

- shifts in the materials economy beyond the forms of capitalism and finance of 2015

- moves beyond the goal of growth; 'wealth' and 'prosperity' are reconceptualised

- the emergence of new concepts of humanity, self; personal and collective identity; notions of health

- new ways of organising and relating to one another that foster/ respond to new ideas of participation and citizenship and accountability – related to new power dynamics

- the introduction of new philosophies of life and death, and attitudes towards the past, present and future

- new flows and uses of power and influence

Role of users and entrepreneurs in the scenarios

Overview of the role of users and entrepreneurs in the scenarios

A key insight from across the scenarios is to recognise that the role of users becomes increasingly more important in the transition to a sustainable society. In order to take advantage of the full impact of these changes, the notion of how we understand 'user' will also need to change to allow for the full transition to take place.

The most significant role played by user-innovators in the transition to a sustainable society is through bringing about changes in culture and governance that enable society to 'self-regulate' a stable relationship with the living systems of the Earth: either through accepting and helping to co-create changes in governance and cultural change put forward by the regime or by bringing forward those changes in a context of inaction and resistance by mainstream institutions.

From our analysis of the SPREAD scenarios, we put forward a typology that describes the role of user-innovators in transition according to their active, passive or resisting role in:

1. **Innovating at key sites needed for the transition** to a self-regulating society. These fall into four types: product and service innovation; place and network-related innovation; innovation of governance and social structures and paradigm innovation. (see table on the following page)
   - •User-innovators contribute to all of these across the four scenarios – to varying degrees.
   - •These sites for innovation create change through direct and indirect impacts and through contributing to wider sociotechnical transition. Their systemic effects vary according to context. For example, the same place-related innovation could have the effect of building capacity for change in the Local Loops scenario, while disrupting and displacing the status quo in Empathetic Communities.

2. **Contributing to processes of innovation for social change:**
   - •enabling radical innovation to happen
   - •fostering new meanings and cultural practices through the journey of innovating
   - •enabling social change outcomes through innovation
   - •enabling wider systemic impact.

1. Role of users innovating at key sites needed for the transition

The following table highlights the very diverse roles at all stages of the innovation process users/ citizens/ communities play in the scenarios.

Contribution to transition	Direct impacts	Indirect impacts
Product and service innovations	Digitally-enabled transparency: users develop, test and use these new services to help monitor where their goods come from, across domains Mass uptake of digital fabrication changes the product and service manufacturing processes and disrupts industries. Services and experiences are created by/ for media and advertising professionals that promote empathy, sharing & change.	Mass uptake of digital fabrication has a knock on effect to product and service innovation in energy, food, housing and mobility – and forces a shift in business operations from value chains to networks. Changed personal behaviour and mind-set of individuals in media influences mainstream advertising and communications messages – away from consumerism towards collaboration.
Place and network-related innovation	Experimentation leads to the reinvention of 'guild' structures for artisanal and other small businesses. It leads to hyper local product and service innovation in food and consumer goods.	'Modern subsistence' living emerges in neighbourhood cooperatives
Innovation of governance and social structures	Development of new education systems that identify and nurture those with high potential through specific educational tracks. This helps to foster a systems-orientated mind-set.	Innovating perceptions of self. Platforms for dialogue and processes for community building, governance, conflict resolution and decision making emerge.
Paradigm innovation	Dominance of 'living life online' – shifts people's identity, this impacts how societies organize and, where & how people consume. and also alters the mental model for perceptions of self and connection to each other	Successful 'Professional Guilds' are noticed by European policymakers. This gives rise to a new economic policy narrative and ultimately to the 'Local Loops framework' for city regions in Europe. A new paradigm of empathy emerges after a prolonged period of economic collapse and established institutions disappointing the expectations of citizens and civil society.

# 2. Role of users in contributing to the process of innovation for social change

•What makes citizen and user-driven innovation interesting for sustainability is the potential to cultivate the aspirations, beliefs and goals needed for social change – through collaboration as part of networks, communities, with business and entrepreneurs.

•While markets concentrate on intellectual property and technological innovation, citizens and 'users' are free to innovate in the gaps above and between able to operate across traditional boundaries. Future citizens and 'users' have both the motivation and means to tackle the sustainability challenges that outstrip business and government.

•Digital data, platforms and services mean everyone has the tools to communicate their ideas, forge collaborations, build prototypes and develop them – and they use them to create not just whole new ways of organising, living, producing and consuming, but philosophies and beliefs.

•This makes users impactful agents of change; developing niche practices that influence and displace aspects of the regime when the conditions for this arise.

•As the potential for what can be innovated, and by whom, is diversifying over time, the conditions that could afford users, entrepreneurs and others greater agency to innovate for sustainability, will generate resistance too.

•The primary contribution made by user-innovators to the transition to a 'self-regulating' society is through accepting changes in governance and cultural change put forward by the regime and helping to co-create the evolution of existing systems; or by bringing forward those changes in a context of inaction and resistance by mainstream institutions.

The importance of collective and collaborative users

A consistent pattern across the scenarios is that of the increasing importance of collective users.

•Opportunities for Community Innovation to play a role in moments of change along the scenario pathways have been identified

•The community innovation quadrant is a potential destination typology for the future.

•Collaboration amongst users/ citizens is getting easier as technology connects people all over the world in ways that haven't previously been possible. People are increasingly working together to solve shared problems or to act on shared interests – this relates to products and services, and beyond.

This suggests that we need to look to expand the scope of 'user-innovation' as we look to the future. Although community Innovation has happened in the past, but does not tend to feature in historical literature about user innovation.
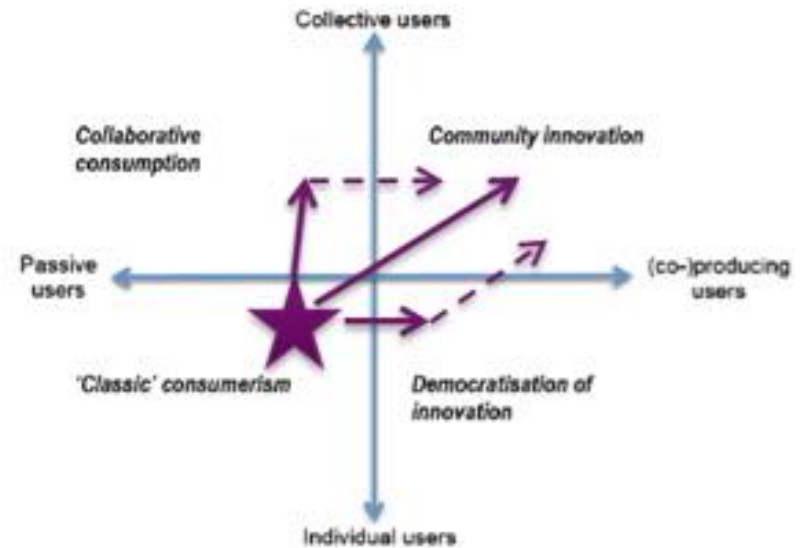
Resistor and proactive user roles

It is also important to acknowledge that the same forces that allowing users, entrepreneurs to have more agency towards sustainable lifestyles, could also be a force for resisting sustainable lifestyles as explore in (as documented in D2.1) and in the diagram below. Although we see a proliferation of 'users' creating change in the scenarios, we must acknowledge that the same sense of agency and ability to act ill also be used by those wishing to block and resist change. The reality is likely to mean that those who desire positive change will coexist with those looking to resist and prevent change from happening too.

The additional challenge identified by the scenarios, is that each individual will be playing more than one role at any one time. The complexity of our lifestyles means that you may choose to be an active producer in one domain (e.g. in terms of food) and at the same time you may be resisting change and being a legitimator for counter movements (e.g. in terms of the energy domain).

collective
role

RESISTANCE NEUTRAL/PASSIVE COPRODUCTION PRODUCTION

individual
role
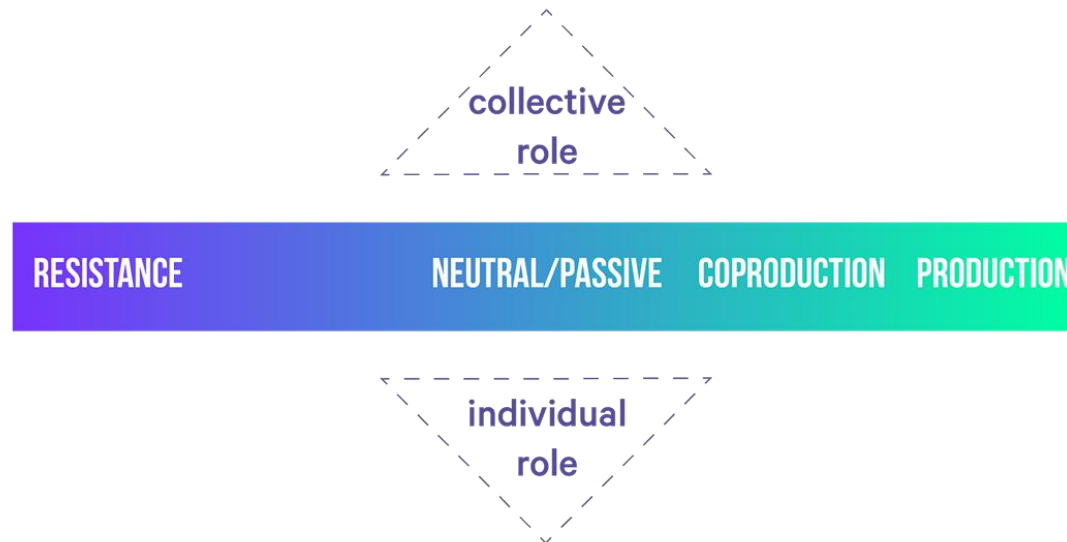
WP1 User typologies

WP1 created a typology that outlines the historical active roles users have played in in facilitating transitions. These include:

1) **User-producers** invent experiment and tinker with radical technologies, creating new technical and organizational solutions, and articulating new user preferences. They perform second-order learning processes.

2) **User-consumers** mainly use their power to buy products. They define their lifestyle through a variety of consumption practices. They may also be involved with maintenance and repair work and perform first-order learning processes. They will have developed more fixed preferences which enable the stabilization of the new socio-technical regime.

3) **User-intermediaries** are involved with niche cumulation: they enrol new actors and broker contacts between them, they help to create a space for producers, users and regulators to meet and attempt to achieve the alignment of technologies, actors and rules.

4) **User-citizens** engage in politics of regime shift lobbying for a particular niche and against the regime (or other niches).

5) **User-legitimators** shape the values and worldview of niche actors giving meaning, purpose and rationale for their activities. They provide interpretations of developments at the landscape level. By drawing on both local and global cultural resources they provide a cultural 'glue' which helps to ensure a sense of belonging, identity and social cohesion.

WP1 User typologies

When applying these existing typologies to the future scenarios, we found some limitations:

- they don't capture the full diversity of user-roles on the future SPREAD scenario pathways
- they don't reflect the mind-set, values, skills and aptitudes of the innovator which are important for innovating the changes in governance and culture needed for the transition. As they are unknowable and complex, they must be brought to life through imagination, experimentation and discovery, which places an emphasis on the qualities of the people doing the innovating.
- they don't capture the fact that user-innovators create impact not only through the 'innovation adoption' but through the act of innovating – and through interventions to further the impact not just of their own, but others' innovations.

By using the existing typology from WP1, you fail to
Recognise the diverse roles and potential of users in
Enabling a transition.

Therefore, how you frame and conceptualise 'users'
 becomes very significant. The term 'user' becomes
inappropriate and the different scenarios and we see the
possible evolution of terms which better reflects where
power and agency to influence the transion and change the
system. Identify of the 'innovator' has a big impact over the
levels of agency possible. Some alternative framing of 'users'
are suggested in the diagram to the right.
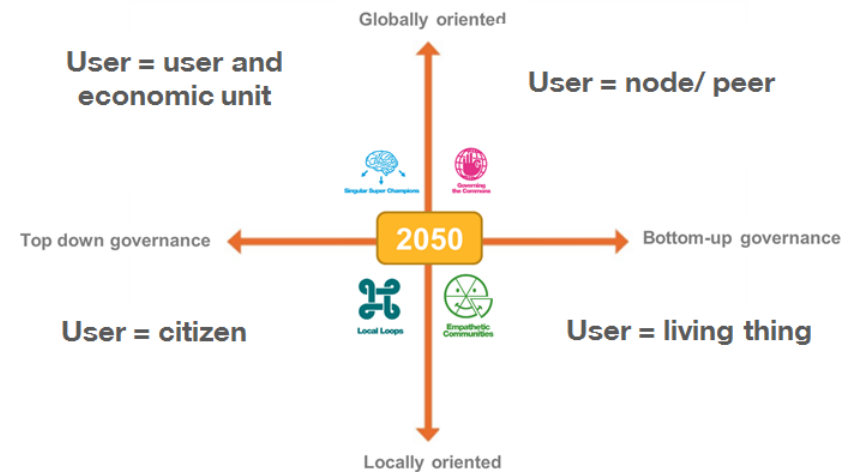
Describing user-innovator roles in transition

We can describe the role of future user-innovators in transition according to the following:

1. the significance of their contribution to sites for innovation for transition
2. their contribution to processes of innovation for social change:
3. whether they play an active, passive or resisting roles in innovation for transition in relation to (1) and (2).

They are more likely to result in paradigm innovation and the innovation of governance and social structures if:

- the mind-set, values, skills and aptitudes of innovators enables system innovation and is aligned with sustainability (e.g. self-transcendent values, personal resilience)
- processes of innovation/ ways of working transcend traditional boundaries, flows and power structures as this has greater potential to forge new cultural practices. E.g.: users collaborating with other users in Europe and beyond; community innovators learning from and working co-creatively with other community innovators; institutions engaging with community innovators, community innovators engaging with institution;new relationships and flows of value between users, institutions, communities, entrepreneurs and businesses.

The overall effect of users on sociotechnical transition is dependent on wider, complex processes of systemic change taking place in society. The effects observed on the scenario pathways include: building the capacity of mainstream organisations and systems for change; fostering the skills, capabilities, mind-sets and values that can foster a self-regulating society; reconfiguring existing infrastructure systems and associated governance systems; nurturing alternative to the status quo so that they exist; disrupting/ displacing the regime with these alternatives; destabilising accepted wisdoms and ways of organising that characterise the regime.

Future personas: user-innovator roles in transition

To give a sense of the diversity of user roles, the following personas are imaginary user-innovators who are involved in community innovation in the future. They were created to explore the nature and role of citizen/ user innovators at key moments along the four SPREAD scenario pathways. These individuals represent some of the possible ways that users/ citizens might use the means at their disposal to act in the interest of sustainable life-styles collaboration with others

•**Lizzie, France, age 28: entrepreneur: Local Loops Scenario: 2025**

Started-up a small/ lean, sustainable clothes company; has strong networks and is often using her connections to innovate new value networks in her community. She wants to pollinate her passion for good quality, sustainable clothes, and sees herself as a 'trust architect' brokering relationships between community groups, businesses and individuals in her locality, to help make 'circular fashion' a reality.

•**Sebastien, 32, Spain, business owner: Governing the Commons: 2019**

Using peer-to-peer networks to lobby for policy and regulatory change. National laws and regulation to protect intellectual property relating to 3D printing are failing. They need to be global to be effective and they need to be enforceable. At the moment that's impossible. He is using his influence through social networks, participative digital platforms and the internet of things to pilot the concept of global self surveillance to get global decision-makers' attention. His bigger vision is using self-surveillance to enforce global environmental legislation.

•**Clara, 67, Poland: retired: Governing the Commons : 2032**

Clara found out she has a rare health condition and is now galvanising those with similar and related conditions to fill gap in research and health services, in order to treat them. She is using virtual networks and citizen science platforms to connect with people that share her condition. Many of the treatments needed can be delivered remotely; so hers is a global initiative.

Full personas can be found in the full scenario write up sections of this report.

Scenario comparisons

An overview of the augmented scenarios

Scenario comparisons

The following pages show a series of comparisons of the different scenarios. These help to demonstrate the key differences between the different scenarios. While radical social change occurs in all four of the SPREAD 2050 scenarios, it develops and plays out very differently in each. The most important social changes that occur are in:

•the nature of governance: constitution; legislature and judiciary, and executive functions

•the prevailing culture of society: the organising structures, goals, values, mind-set and paradigm.

These comparisons have been chosen as those things that best illustrate how different the 2050 world could be from today.

1. Scenario boundaries
2. Scenario analogies
3. Cultural context
4. How people relate/attitude to others
5. Governance
6. Economy
7. Identity & status
8. Lifestyles
9. Key innovations
10. Leverage points
11. Key innovators
12. Role of users and entrepreneurs
13. User and entrepreneurial roles
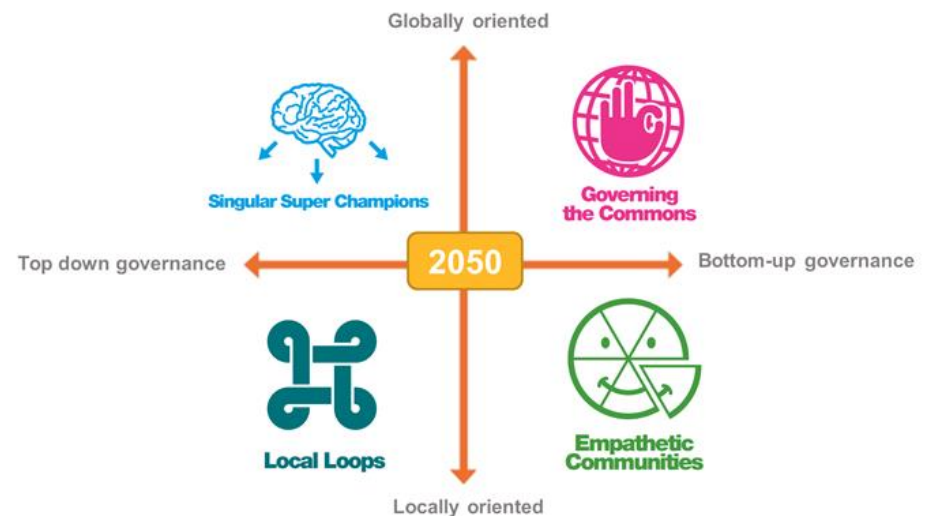
1. Scenario boundaries

The measure of sustainability shared across all scenarios are as follows:

- 8000 kg material footprint per person (current European average is 27,000 to 40,000 per person)
- Sets social system boundaries by using indices from statistics and research by UNDP and UN Population Division.
- The material footprint boundary of 8000 kg p.a. for one person's lifestyle is based on the worldwide recognition of these social system boundaries.

There are three, common distinctions between the societies in the 2050 SPREAD scenarios in comparison with Europe in 2015:

1. 'whole system efficiencies' have been achieved both within key domains of consumption - energy, food, housing and mobility – and across them
2. intensified consumption in one domain is counter-balanced with reductions elsewhere, to keep absolute resource consumption at a low level
3. individuals are using their personal agency to contribute to efficiency within and across all domains on an ongoing basis.
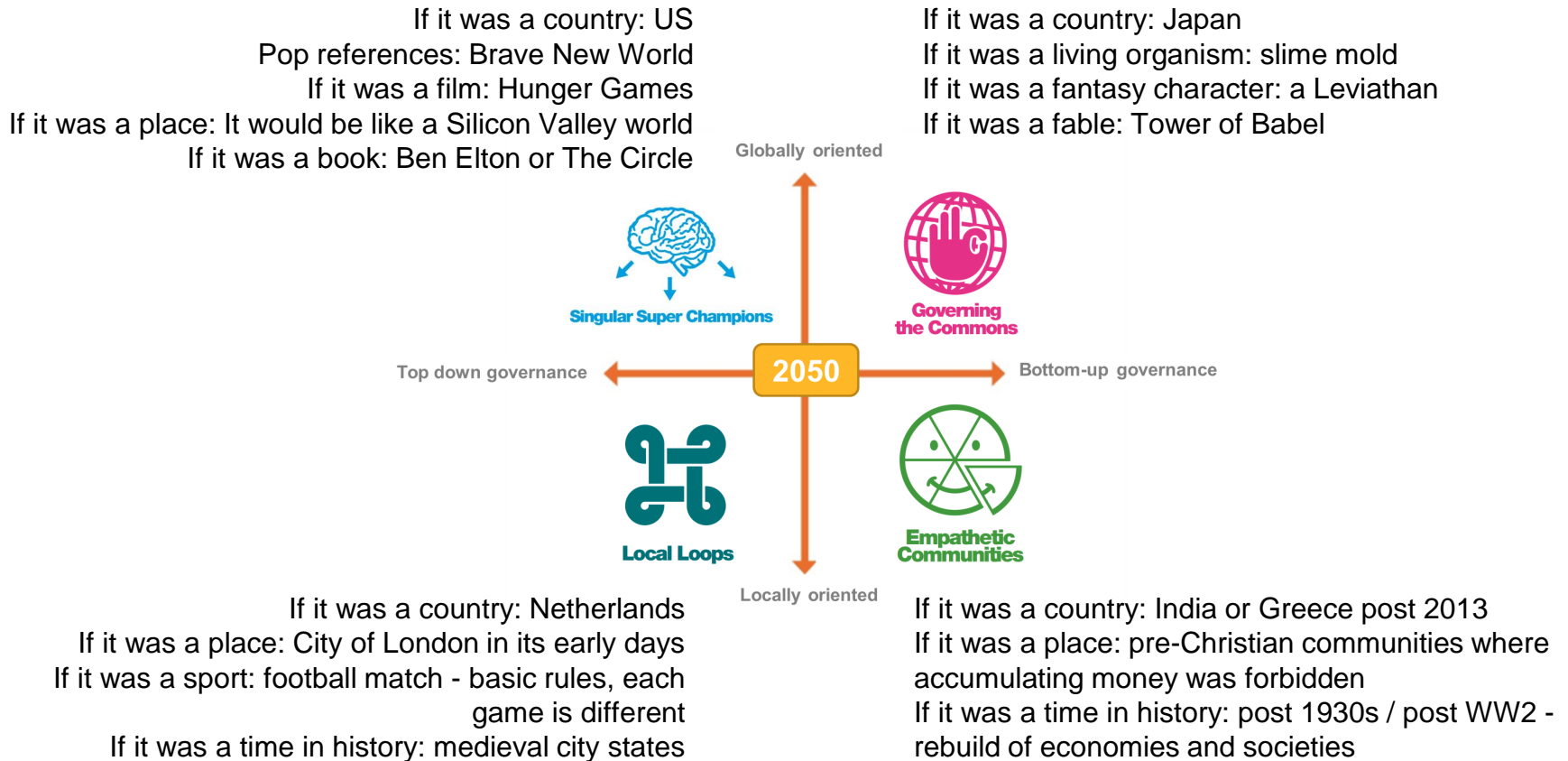
Environmental boundaries

Earth-system process	Current value	Boundary value
Climate change Atmospheric carbon dioxide concentration (ppm by volume)	387	350
Biodiversity loss Extinction rate (number of species per million per year)	>100	10
Biochemical Anthropogenic nitrogen removed from the atmosphere (millions of tonnes per year)	121	35
Land use Land surface converted to cropland (percent)	11,7	15
Fresh water Global human consumption of water (km³/yr)	2600	4000
Ozone layer Stratospheric ozone concentration (Dobson units)	283	276

Social boundaries

Human development	Current Value	Goal 2050
Human Developed Index (measure of life expectancy, literacy, education and standards of living)	0,63	0,77
Years of education in less developed countries (average years)	6	8
Life expectancy (global average)	70	>75
GINI coefficient (Measure of the inequality: a value 0 expressing total equality and a value 1 maximal inequality.)	0,7	0,55
Global population (billion)	7	8,9

2. Scenario analogies

Scenarios are a creative tool that require imagination in order to be used most effectively. To help get into the scenarios, we've characterised the scenarios by making pop culture references to help paint a picture of these worlds.

If it was a country: US
Pop references: Brave New World
If it was a film: Hunger Games
If it was a place: It would be like a Silicon Valley world
If it was a book: Ben Elton or The Circle

If it was a country: Japan
If it was a living organism: slime mold
If it was a fantasy character: a Leviathan
If it was a fable: Tower of Babel

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance ← **2050** → Bottom-up governance

Local Loops

Empathetic Communities

Locally oriented

If it was a country: Netherlands
If it was a place: City of London in its early days
If it was a sport: football match - basic rules, each game is different
If it was a time in history: medieval city states

If it was a country: India or Greece post 2013
If it was a place: pre-Christian communities where accumulating money was forbidden
If it was a time in history: post 1930s / post WW2 - rebuild of economies and societies

3. Cultural context

Myth: technology will save us
Goal: progress through efficient growth
Identity: obligation to fulfil one's potential. Achievement through tangibility
Mindset: mechanistic, rational, logical, data and evidence led
Approach: efficient neo-liberal ideology, rational, logical
Systemic approach: systems thinking

Globally oriented

Singular Super Champions

Governing the Commons

Myth: shared and distributed power allows for a more equitable society
Goal: fairness, equality and distributed access
Identity: unique to individuals, made up of a patchwork of affiliations
Mindset: global, networked
Approach: Dynamically stable, digitally networked
Systemic approach: unconscious living system – not sure of the direction or purpose

Top down governance — **2050** — **Bottom-up governance**

Local Loops

Empathetic Communities

Myth: regional diversity and devolved power will enable greater resilience and regional flourishing
Goal: sustainable, flourishing and resilient regions
Identity: strong sense of local identity, sense of being European
Mindset: love and respect for of diversity
Approach: distributed and devolved, valuing different approaches and celebrating diversity
Systemic approach: systemic thinking

Myth: we are earth, ever growing and evolving
Goal: healthy and flourishing continuum and evolution of living things
Identity: we identify with other living things/beings
Mindset: caring, empathetic
Approach: Caring & empathetic collective action creates unstoppable forces
Systemic approach: living systems co-evolvement

Locally oriented

4. How people relate in the scenarios

Social contract:
- Obligation to fulfil one's potential as an asset to the economy.
- Participation in systems for electing and acting on decisions made by elected officials.
- Self-actualisation as an organising principle.

Attitude towards others: "my uniqueness is my strength"

Social contract:
- Service your own needs; champion and act in the cause of others who share those needs.
- Achievement by acting to make changes in the interests of all, providing they support/ are neutral to yours (and don't undermine them).
- Self-reliance as an organising principle.

Attitude towards others "my needs matter; our needs matter"

Globally oriented

Top down governance

2050

Bottom-up governance

Singular Super Champions

Governing the Commons

Local Loops

Empathetic Communities

Social contract
- Help to secure resources and safeguard the economy by helping your Professional Guild to flourish.
- Advocate for your guild and members in city governance processes, and by supporting the politicians and policies that will protect Local Loops for Europe.
- Ecological design as an organising principle.

Attitude towards others: "the beauty of synergy is that it serves to add, not subtract"

Social contract
- Care for your neighbour and they will care for you.
- Invest your time and creativity for the good of the community.
- Fulfilment through supporting those who are less fortunate.
- Empathy as an organising principle.

Attitude towards others: "touch others not just with your hands, but with your heart"

Locally oriented

5. Governance across the scenarios

Strong global, EU and national institutions; centralised power and control

Talent is concentrated in global organisations creating two classes in society: 'entrepreneurs' and 'super talented multinationals'

Change is driven by multinational companies and governments

How society operates: Cities track resource flows to protect/ manage multiple 'Local Loops'; place-based procurement; Owned and controlled data; data rich; automated; user-centred

Global governance and policy-making is focused on scientific expertise; strict global regulation based on global treaties on biodiversity and other environmental issues; emphasis on science-led

Strong, far-sighted and coherent national and EU governments; devolved governance to cities

High trust and participation in politic; new power dynamics driven through 'Wikidemocracy'

Traditional global, EU and national governance systems eroding; decentralised networks, flocks and swarms dominate decision making and governance. These are relevant globally.

Local governance dominates; national and European government replaced
How society operates: Cities formed into self-sufficient neighbourhoods; new municipal partnerships and cooperatives; new models of work and welfare; 'Public Private People'
How society operates: High unemployment (in 2014 terms); work takes place collaboratively in hubs

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance | **2050** | Bottom-up governance

Local Loops

Empathetic Communities

Locally oriented

44

6. Economy across the scenarios

Dominated by the pursuit of 'efficient' monetary growth

The circular economy is a key driver and ambition for many

Global economy: equitable economy; faith in enterprise

Fragmented sources of income; 'multi-professional self-employment; micro-tasks

Economy: global, digitally based, fragmented, dynamic, based on cryptocurrencies and next evolution of blockchain technologies

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance   **2050**   Bottom-up governance

Local Loops

Empathetic Communities

Locally oriented

Sharing economy; service-based consumption; local culture is highly valued and celebrated

Global economy: efficient local clustering of business and industry; local employment

Global economy breaks-down; absence of global financial and political systems creates new forms of more localised exchange

Economy: Hands-on work that contributes to the community is highly valued; consumption is geared towards meeting basic needs; communal living
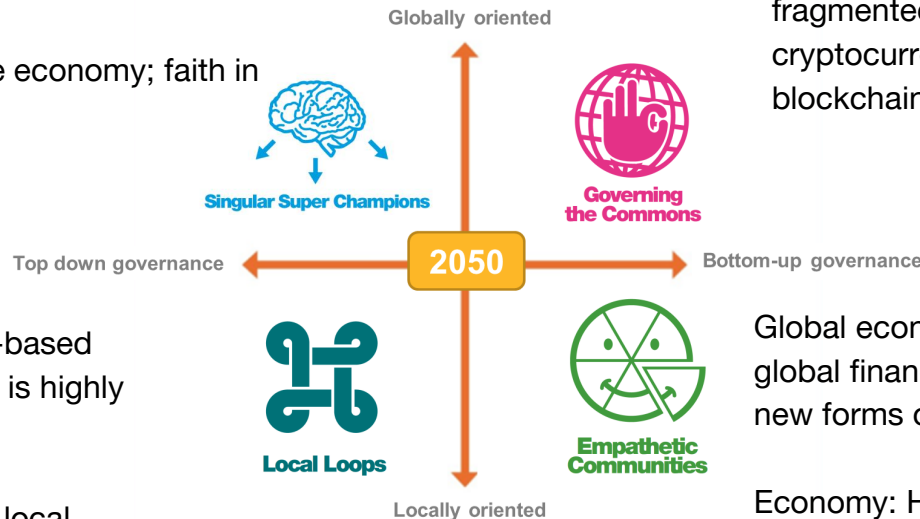
7. Identity and status across the scenarios

Status is achieved through learning and expertise

Less desire for material goods: meanings and symbols get consumed more than products.

Peer-to-peer networks give sense of security and belonging; everyone has a patchwork identity and affiliations with many different things.

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance ← **2050** → Bottom-up governance

Local Loops

Empathetic Communities

Locally oriented

Status gained by hard work and craftsmanship; mutual, problem-based learning and teaching. Strong associations and affiliations to your local area & guild

Emphasis and importance placed on public health and health prevention; quality of a person's lifespan is more important than its length
Status relates to local social hierarchies; those with collaborative leadership qualities have a high status and respect

8. Lifestyles across the scenarios

Automated, smart living has taken over and shapes daily life
How society operates: It's a competitive, personalised & data driven world; transparent

Life is lived in the digital realm, with rules that don't exist in real world
User-centred; personal optimisation is at the heart of work and welfare
Augmented reality and digital services; emphasis on virtual not material consumption
Ethos informal 'learning by doing'; everyone has something to offer peers; this drives status
Where change comes from: time bound flocks and networks swarming around an important issue, changing it as required

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance — **2050** — **Bottom-up governance**

Local Loops

Empathetic Communities

Locally oriented

Business, social life and politics based on professional communities called Professional Guilds located within local resource loops

People helping one another becomes a guiding principle for everyday life; technology enables people to use empathy; political decision-making reformed
Where change comes from: individuals and communities relating with one and other differently, finding a shared purpose and ways of being that start to show society operating from a different state of consciousness.

9. Key innovations in each scenario

Collaborative platforms

Data and transparency standards

Digital fabrication (3&4D printing) at scale

Digital governance & surveillance

Hyper efficient & personalised products and services

value networks & communities

Globally oriented

Personalised & long terms contracts (insurance/health)

Identity – our digital self

Digitally enabled utilities

Singular Super Champions

Governing the Commons

Bio-technology for key resources

Top down governance

2050

Bottom-up governance

Local value networks – flows of resource

Societal values

Community energy and food tech/ production methods

Local Loops

Empathetic Communities

Modes of storytelling – role of media and advertising

nity governance

Local governance frameworks

Locally oriented

Organisational forms

Collaboration & co-creation processes

Non-financial exchanges

10. Type of innovation in each scenario

What innovation?	Significance and nature of role played by user-innovators in transition	Systemic impacts of user-innovation (MLP)
Product and service innovations	Very significant and active in Governing the Commons Significant and active in Local Loops Less significant, passive and resisting in Singular Super Champions Non-existent in Empathetic Communities	Building the capacity of mainstream organisations and systems for change Fostering the skills, capabilities, mind-sets and values that can foster a self-regulating society
Place and network-related innovation	Significant and active in Local Loops and Empathetic Communities. Non-existent in Singular Super Champions	Reconfiguring existing infrastructure systems and associated governance systems Nurturing radical innovation that's an alternative to the status quo In some cases, disrupting/ displacing the regime
Innovation of governance and social structures	Very significant and active in Governing the Commons and Empathetic Communities. Significant, active and resisting in Local Loops Less significant, passive and resisting in Singular Super Champions	
Paradigm innovation	Significant and active in all scenarios except Singular Super Champions Low importance, active in Singular Super Champions	Destabilising accepted wisdoms and ways of organising that characterise the regime

11. Scenario leverage points

For each scenario the key leverage points (and key locus of innovations) have been mapped onto Donella Meadows system leverage points. They illustrate that each scenarios has a different driver for change. The further to the right of the spectrum you go, the greater the scale and impact of transformation there is.

It illustrates that the 'quality' of change and sustainability is not equal across the scenarios and that there are very different leverage points required to transition to these changes. It also suggest that the route and starting point for transition is very different for each of the options.
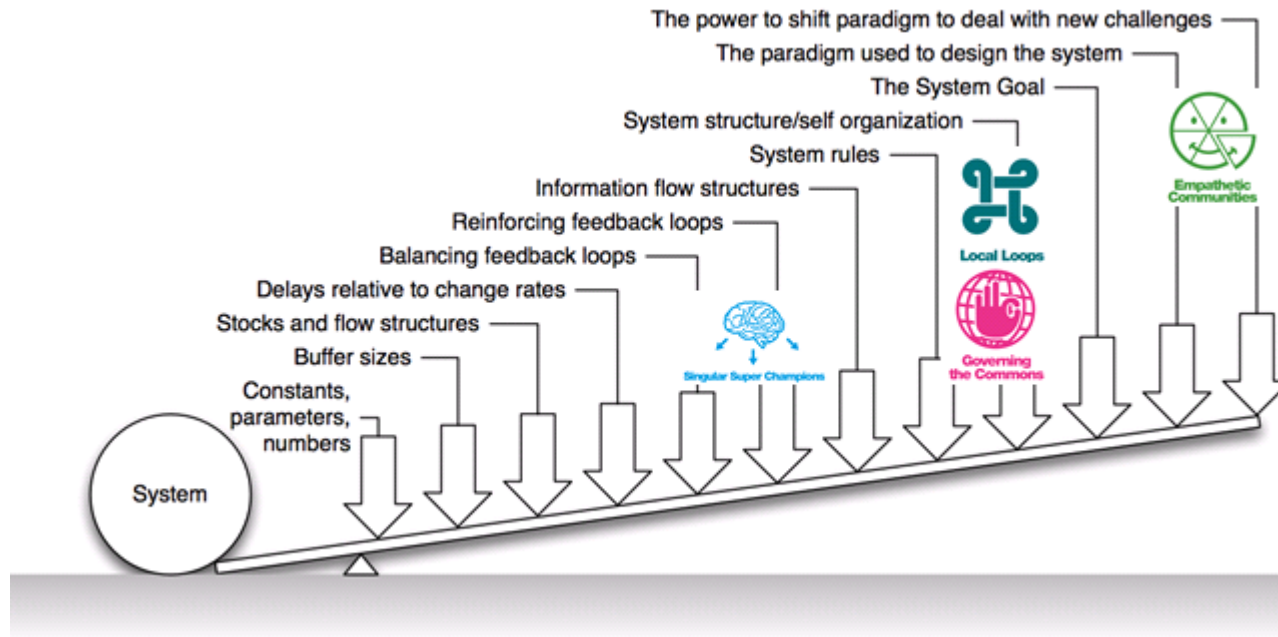
12. Key innovators / agents of change

Governments

Mega-multinationals

Data entrepreneurs

Everyone has the digital tools

Virtual networks

Globally oriented

Singular Super Champions

Governing the Commons

Top down governance ← **2050** → Bottom-up governance

Hyper-local communities

Local Loops

Empathetic Communities

Guilds/Communities innovating together

Charismatic community leaders

Locally oriented

Culture makers

Business networks working at a local level

13. Role of users and entrepreneurs in the scenarios

The following provides an overview of the broad role of users in the future scenarios:

In Local Loops:

- the policy frameworks introduced to increase the 'self-regulation' in the use of resources across Europe through instituting regional, circular economies – around guilds – occurred in response to innovation by users and entrepreneurs
- the decentralised nature of governance encourages prolific and diverse innovation by users and entrepreneurs in city-regions; this encourages adaptiveness to the resources and other geographical conditions in different parts of Europe
- over time, the varied agents involved in these complex 'innovation ecosystems' evolve their own cultural memes, narratives and goals – and this has the knock-on effect of developing a no-growth materials economy in Europe by 2050.

In Singular Super Champions:

- users play the least significant role in sociotechnical transition in that it is lead through strong partnership between government and business; introducing new fiscal frameworks and furthering changes in governance where they tackle perceived risks to growth.
- changes to the constitution, legislature and judiciary and executive functions are market-led and allow society to regulate those aspects of its relationship with natural systems deemed to be economically significant
- citizens/ consumers/ users participate in change through compliance and participation in these changes.

In the Governing the Commons and Empathetic Communities:

- users and entrepreneurs play the most significant role in sociotechnical transition
- low growth, in-fighting and the cost of social unrest lead to both a lack of investment in upgrading existing infrastructures, services and enabling innovation to further growth and a lack of investment and enabling of alternatives
- institutional paralysis causes citizens to displace institutional governance with radically different constitutional, legislative and judiciary and executive functions.

13. Role of users and entrepreneurs, building on WP1

The following analysis takes the WP1 typologies and looks at who and how these roles maybe understood in each of the scenarios.

Globally oriented

User-producers → campaigning activists
User-consumers → consumers (no change)
User-intermediaries → catalysts
User-citizens→ no active role in change
User-legitimators → communicators: prophets of capitalism

User-producers → producers (no change)
User-consumers → aggregators
User-intermediaries → connectors
User-citizens→ nodes
User-legitimators → translators

Top down governance ← **2050** → **Bottom-up governance**

User-producers → local-value generators
User-consumers → collaborative 'makers'
User-intermediaries → enablers
User-citizens→ cultivating new forms of participation
User-legitimators → 'guild' masters

User-producers → innovators
User-consumers → citizens
User-intermediaries → community leaders
User-citizens→ culture makers
User-legitimators → hyper-local experts

Locally oriented

Detailed scenarios

Full details of new scenario material created through the WP2 project

Taxonomy of scenario material

For each scenario the following material has been created.

SCENARIOS

Overview of the pathway, key innovations and innovators, summary of the domains and characteristics of the world in 2050

SCENARIO PILLARS

GOVERNANCE	HEALTH	WEALTH	CITIZENSHIP	ECONOMY	ENVIRONMENT

SCENARIO STORYTELLING

SCENARIO PATHWAYS
What are the journeys to 2050?

USER ROLES ON PATHWAYS
What are the roles users play on the journeys to 2050?

PERSONAS
What are the characteristics of the people in these worlds?

QUESTIONES RAISED BY THE SCENARIOS

Taxonomy of scenario material

An overview of the activity source is included below.

All components shared in the subsequent part of the report will be structured in different ways in order to create ready-made content for workshop flows, including slide decks, facilitation agendas and specific workbooks and proformas. The content can also be curated for a variety of dissemination formats, such as podcasts or blog posts.

Components	What are they building on?
Scenario pillars: elements of governance, health, wealth, economy, environment, citizenship	Augmented from SPREAD 2050 scenarios & D2.2
Personas	WP2 Future Shaper Workshops A2.2
Transition pathways	WP5 Modelling and expanded narrative WP2 MLP analysis
User roles on transition pathways	Building on WP1 deliverable D1.3
Implications for policy and management	Building on deliverable A 2.4

Singular Super Champions Overview

Of the pathway, key innovations and innovators, summary of the domains and characteristics of the world in 2050
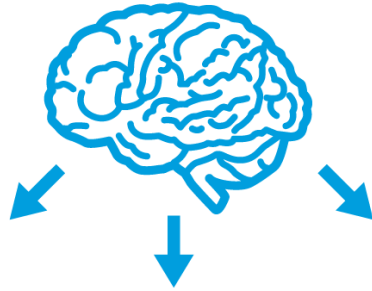
Singular Super Champions

2050 Scenario summary

> This is a hyper-efficient world where many environmental challenges have been fixed by technology solutions, and the availability of data - driven by the high cost of resources.

>EU-wide policy incentives have made carbon-neutral housing the norm; homes have got smaller and optimise resources due to property taxes and subsidies for construction of small flats. People live in dense cities, making flexible use of space.

> Innovation and EU policy has driven a circular economy; in which consumers and households are passive players; resource recovery systems are automated and driven through service contracts.

>Education is fair, but competitive. Opportunity is based on skill and inherent ability, rather than nationality or social standing; learning is as much a leisure activity as it is related to work.

>Health issues, energy demand, waste management and food production are managed and personalised on individuals' behalf, which allows them to focus time on learning and professional enhancement.

>Meanings and symbols are consumed more than products; they are an important form of self-expression

>High trust in business and government to analyse one's data and recommend decisions big and small on a daily basis; people are too busy and obligated as citizens, to manage their personal assets (knowledge, expertise) to invest time making low value decisions.

>Equitable society, imposed through high taxation. The state is viewed as a parent, however this is a socially unequal society.

The shadow side of this scenario?

>People living for an awfully long time without the pension support they need to have a respectful and dignified old age

>The focus on environmental efficiency means that this is a socially unequal society that can quickly and easily create a 2 tier 'cast system' whereby the clever are picked up and fast tracked, while those left behind create apathetic ghettos; denied opportunity

>There's not a meaningful role for everyone in this scenario which means there can be a lack of individual agency to innovate and interact with wider society.

>Mental health is a key challenge - people feel trapped and claustrophobic by the system but don't have any ability to influence the direction of their lives as things are so controlled for them.

>Those who aren't competitive fall to the back of the line, which creates demonization of non-University graduates

>Highly tech based – if you can't afford it you drop out

>Mega corporations could take over the world (Tesco fighting Denmark example)

>Relations based on genetic compatibility; could mean cloning, genetically modified babies, arranged marriages.

> Very quickly people could be marginalised who can't or choose not to fit in with the mainstream.

>If this society is to continue to be in a sustainable state, it needs to be continue to evolve and recognise the social challenges.

Headlines

Singular Super Champions

Myth: technology will save us

Goal: progress through efficient growth

Identity: obligation to fulfil one's potential. Achievement through tangibility

Mindset: mechanistic, rational, logical, data and evidence led

Approach: efficient neo-liberal ideology, rational, logical

Systemic approach: systems thinking

Globally oriented

Top down governance

2050

Headlines
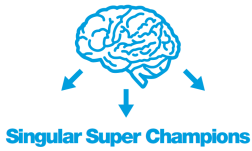
Singular Super Champions

Lifestyle: Automated, smart living has taken over and shapes daily life

How society operates: It's a competitive, personalised & data driven world; transparent

Where change comes from: Change is driven by multinational companies and governments

Economy: The circular economy dominates

Identity & status: Status is achieved through learning and expertise

Resources: Resources are expensive; people concentrate in urban metropolises

Global economy; equitable economy; faith in enterprise

Governance; Strong global, EU and national institutions; centralised power and control

Resources: Knowledge, skills and expertise are key assets as technology develops so fast

Identity & status: Less desire for material goods: meanings and symbols get consumed
    more than products. Talent is concentrated in global organisations creating two classes in
society: 'entrepreneurs' and 'super talented multinationals'

Globally oriented

Top down governance

2050

Landscape factors

Wealth	Health	Economy	Environment
Earning enough to live well and contribute to your professional skills and development to enable environmental efficiencies to be made Maximising your own capacity to learn and achieve; to be high achieving compared with your peers Success is often linked to strong relationships with those in the regime.	Using data to optimise your body's potential. Sharing data with digital service providers in order for your life to be lived as efficiently as possible in terms of wellness, use of time, resources and money.	Driven by availability of data, growth and competition; environmental efficiencies are fully embedded in society. The power houses of the economy are large companies and institutions with close links to government. Data and trust of the regime/ status quo drive economic financial growth and decision making	The pursuit of environmental efficiencies is paramount in this scenario. The desire for this is achieved at the expense of social sustainability – it continues to be a very socially unequal society.

Governance and power

Governance	Identity & power
Efficiency is the central organizing principle for society. Competition is a key mechanism in achieving this. Governments and large institutions and businesses make decisions about society; they are highly trusted to work in the best public interest. It is accepted that all outcomes are secondary to the priority of economic efficient growth. Decisions are informed by abundant data. Citizens are comfortable sharing their most private data, mediated through digital platforms that represent the interests of different segments of the population to those in power.	People identify with their nation state and with Europe. People strongly identify with their peers who they fiercely compete with. Your social status informs and dictates your power. Power is concentrated in established multi-national businesses and industries; super entrepreneurs – who start up multiple ventures. An individual citizen's sphere of power is limited and your lack of it could lead to mental health challenges.
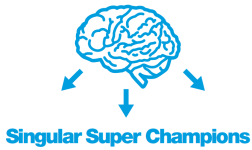
In this rational scenario, some say there is less emotion, adventure and space for creativity.

There is a global community but people experience life through their own spheres. There is complete acceptance of data-driven decisions and personal data sharing; understood to be for the greater good
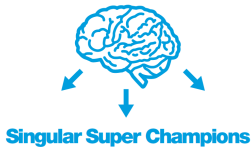
"I'm willing to sacrifice my own desires and data to enable a more environmentally efficient world."

"I believe my uniqueness is my strength. I'm driven by competition with others and believe that if I optimise myself I will be helping society."
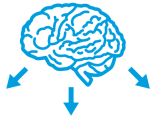
Artefact from the future

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In this competitive world you would be competing with your peers in many parts of your life. There is a proliferation of apps that allow you to track your progress in comparison with others.
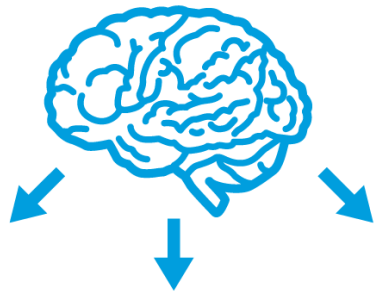
Singular Super Champions

The transition
What is journey to 2050?
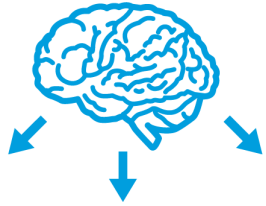
Singular Super Champions

Pathway
to 2050

Morocco restricts its sale of **phosphorous**. With half of the worlds reserves, this hikes up fertilizer prices.

Outbreak of public unrest in China related to the effects of drought, flooding and the related rise in food prices.

EU prime ministers issue **reforms** of unprecedented scope in all EU countries to **prevent** them from falling into a permanent state of **zero growth**: EU Green New Deal.

2018 || Moment of Change

European subsidies (e.g. fuel) are cut; ecological costs are internalised in prices.

Massive shift of investment into ecological production methods.

Governments in the UK, France and Germany announce they will commission a shared smart grid.

The waste mining industry becomes the fastest growing. Global operators compete for rights to exploit waste concentrations.

The biggest global companies agree on a **data transparency standard** relating to energy and resource consumption. The EU, China and USA adopt it the basis for legislation, setting a new global norm.

2025 || Moment of Change

New airline pricing structures mean customers must share the cost of paying for vacant seats on under-booked flights.

Stocks of natural resources are tracked and monitored, using transparent information. Finance sector speculation on future prices declines.

Denmark and Norway lead educational reforms that move primary education partly outside the classroom, to improve learning capacity.

Businesses track and charge their customers for 'non-returned' waste.
All households have now switched to digitally-driven utilities services that manage their data privacy, energy, water and waste for them.

Austrian **children** with the most potential to become **future champions** ar identified at an early age and **hand-picked** for training in learning studios.

2037 || Moment of Ch

Genetic mapping revolutionises health. Doctors and caregivers offer personalised healing solutions. Fitness and exercise soar, and obesity drops, among young people.

Note: these are the edited pathways that we took into the FutureShapers workshop

Thanks to the uptake of subconscious and downloadable learning technologies, sleep is now classed as 'productive leisure time'.

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Transition overview

Landscape
Regime
Niche

SINGULAR SUPER CHAMPIONS
SCENARIO TRANSITION PATHWAY

landscape propped up by status quo

inflated resource efficient regime

route into mainstream is commercial

optimum growth

regime heading towards an unsustainable future

gamechangers are crushed

social innovators start to group, with no support from regime

Landscape level transition

landscape propped up by status quo

inflated resource efficient regime
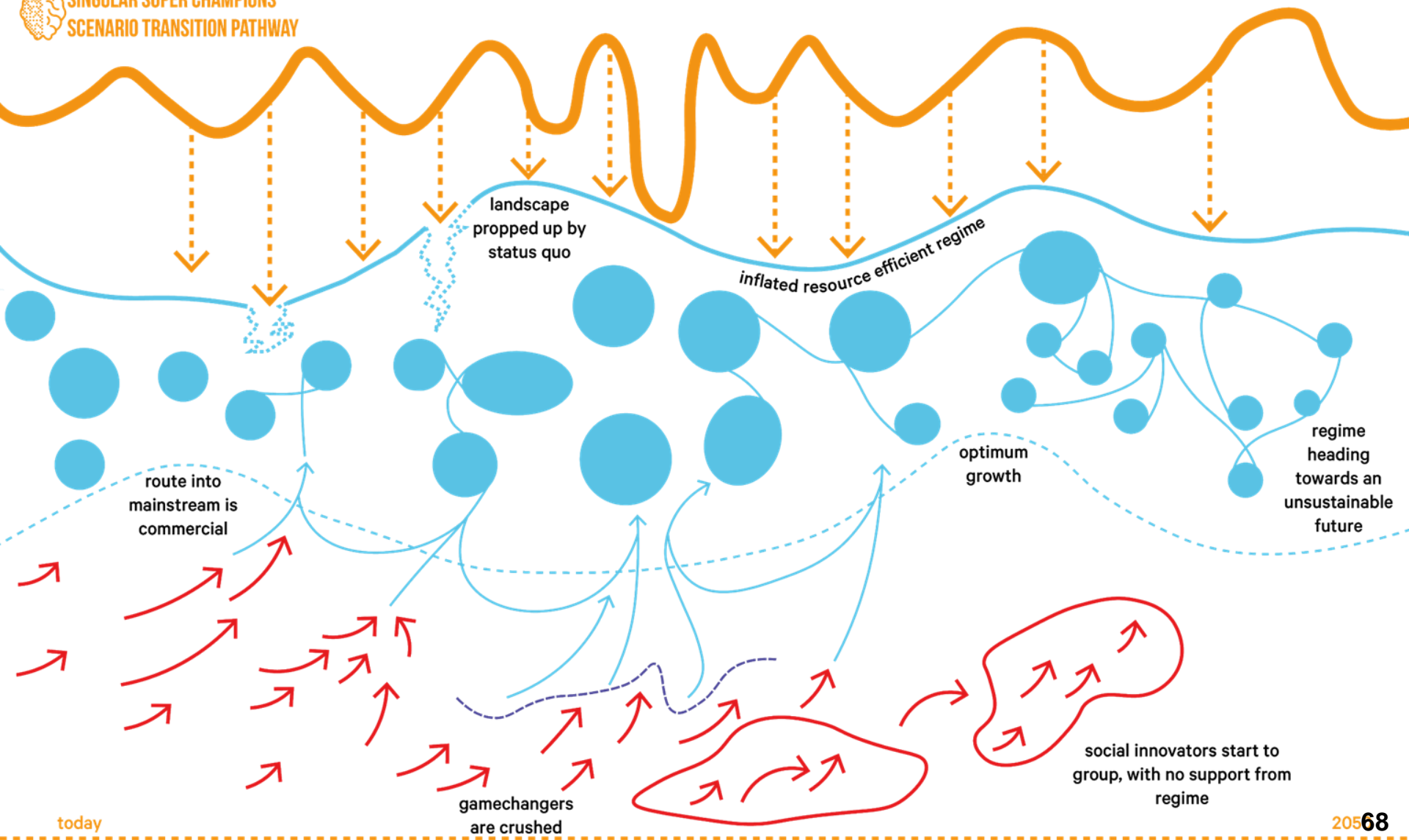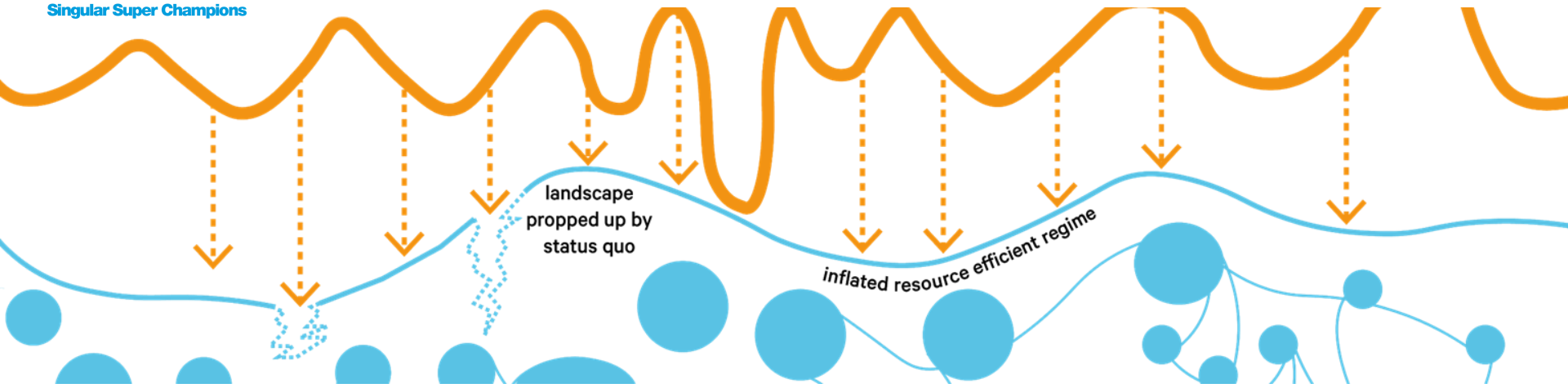
How landscape factors as understood:

- Understanding that resource crunch coming and things will not function unless something is done prompts a realisation that the purpose of the economy and growth needs to be rearticulated towards efficiency, growth and enabling a circular economy.
- There is a belief "technology will save us" – this means that there is no value placed on social innovations
- The rhetoric is one of "We will find a solution" to climate change and that things can be "fixed". The destination is predetermined and there is little room for emergence and very little value placed on the process of change, only the destination
- Status and identity comes through material things.

Regime level transitions

landscape propped up by status quo

inflated resource efficient regime

3
Mainstream adoption of circular economy

4
regime heading towards an unsustainable future

1
route into mainstream is commercial

2
Open Innovation

optimum growth
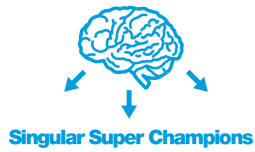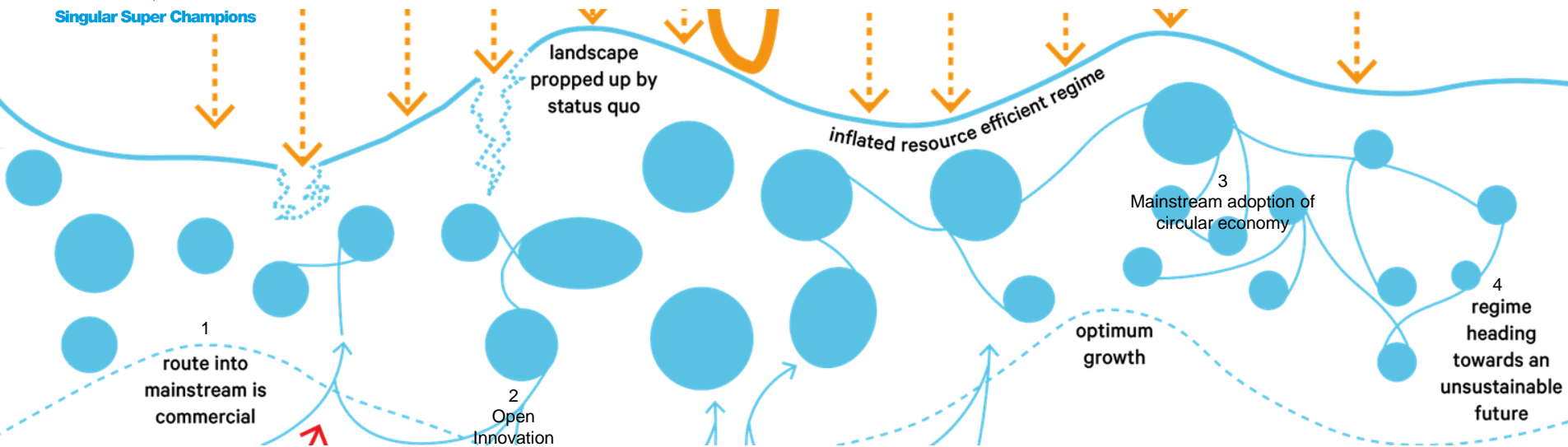
2016 - 2026

(1) The regime starts internalise some of the ecosystem/resource constraints in business context. The dominant narrative of leading businesses becomes a pursuit of a **circular economy**. Many different actors pacify and legitimise the status quo and their pursuit of this more 'efficient' growth and in the process prevent significant change from happening. This comes through collaboration / alignment and coherence of messaging between different policy, innovation agencies, business, research, ngos, high profile commentators and media actors.

(2) **Open innovation** becomes a great way for businesses to innovate and continue to grow. Accelerators and corporate venturing are all encouraged and seek to foster technology that is need by large firms to grow their circular economy ambitions. It is accepted that great ideas will be bought by larger companies and this is a real marker of success in society for entrepreneurs. These approaches prove successful and as a consequence strong brands prevail and the regime grows.

2026 - 2050

(3) There is a **mainstream adoption of the circular economy** narrative which allows it to scale event further and allows for parts of the economy that were previously not linked to become part of a thriving circular economy.

Towards the end of this period, we're heading to the limits of where efficiency and growth at all costs can take you – optimised the capabilities of the economy and limits of consumerism & capitalism.

(4) Partly caused by the beliefs that a 'circular economy' was the finished product and destination and partly because social issues have been ignored so long and the issues are now very deep and very systemic. The circular economy narrative won't help to overcome these very real challenges.The combination have not allowed society to continue to evolve and a transition to a different state.

Without evolving soon, this society is headed for collapse unless another transition starts

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Niche level transition

route into mainstream is commercial

1

growth

towards an unsustainable future

2
gamechangers are crushed

3

today

4
social innovators start to group, with no support from regime

2050
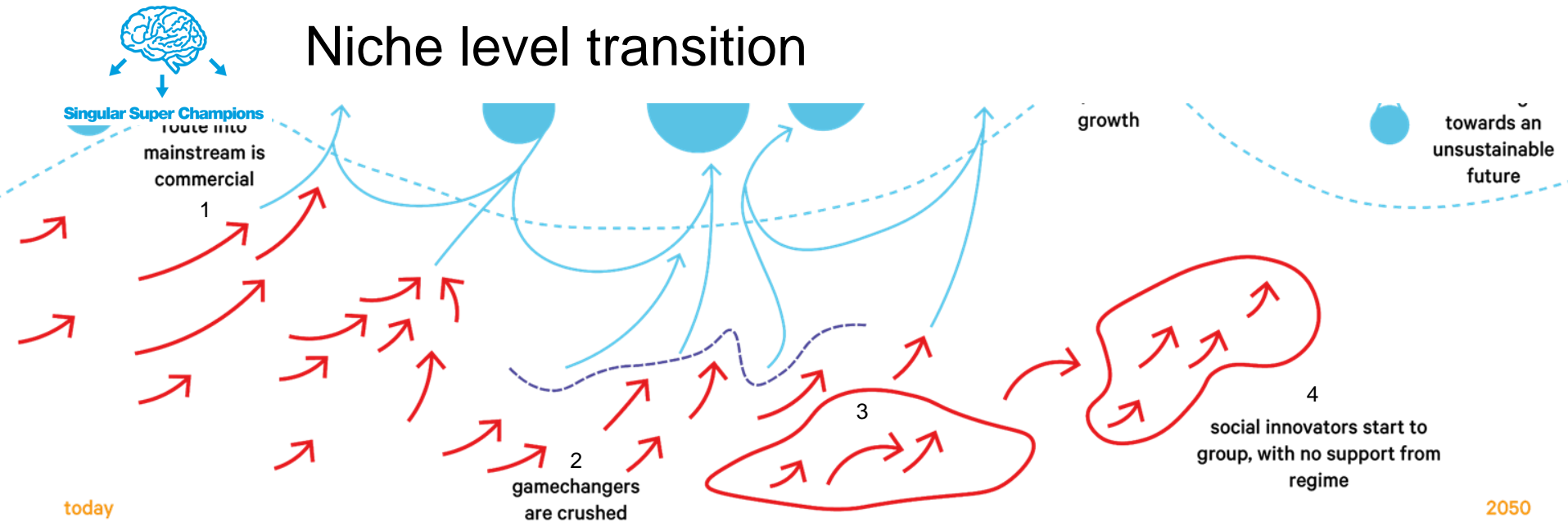
2016 - 2026

(1) Space 'windows' opened up for niche to become integrated into businesses. This comes through a proliferation of business led accelerator programs, competitions, corporate venturing and work for those willing to actively work with the regime. The innovations that are successful are those who develop technology which allow for data personalisation & customisation, environmental efficiencies /circular economy to happen. Those with data and digital skills thrive. These innovators and innovations are providing missing parts to the regime and become subsumed by them.

2026 - 2050

(2) The lack of social innovation combined with the day to day consequences and challenges start to be felt in different communities.

(3) As a consequence social & community innovators start to cluster & form in new niches. They're often localised and are seen as suboptimal by the regime as their impact isn't directly correlated with efficiency. They know there is no support of funding from other organisations to do this, so they start to take matters into their own hands.

(4) Counter cultural legitimators, stories and narratives emerge from NGOs, community support networks and emerging media voices. New forms of relationship start to emerge that enable different forms and modes of collaboration.

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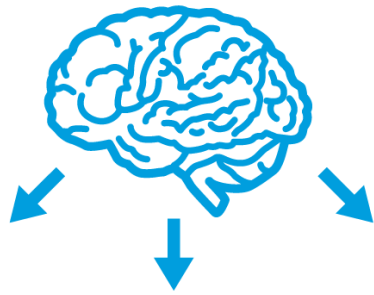
Singular Super Champions

Innovation
What is being innovated to enable sustainable lifestyles in on the pathway to this scenario

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2015-2020	**Reforms** of unprecedented scope in all EU countries to **prevent** them from falling into a permanent state of **zero growth**: EU Green New Deal & Circular Economy Package	>Consistent EU policy for a decarbonised economy >Strong political will >EU Green New Deal	> Originally from big players (Big 6, Big Food etc) >Lack of political stability
2020-25	Agreement on **data transparency standards** creates global norm (energy and resources)	> Consistent and meaningful political policy >willingness to collaobrate and share data	> NSA & GCHQ revelations have completely eroded trust in govs and organisation having all our data >counter movements around open data and transparency
2025-2030	Businesses **track and charge** their customers for 'non-returned' waste. All households have now switched to digitally-driven utilities services that manage their data privacy, energy, water and waste for them.	>Big EU SMART grid > Algorithmic analysis of food use >Direct financing from big business to smaller players >Huge top down financial support	> Late adopters from low income areas being left behind and facing more hardship through fines > Elder people – still sceptical of new technologies
2035-2040	Localised care networks - providing welfare support that isn't recognised as contributing to an efficient soicety	> Training studios > Encouragement and mentoring	> Lack of funds, resources and agency from individuals in the community to do this

Domain insights

Singular Super Champions

Domain	Key insights	Key innovators
Food	> 24/7 food bars, cost-efficient, nutrition led, hyper-transparent > Large scale, high tech, organic production; tightly controlled biotech innovations increase yields and resistance to disease; food grown in optimal locations/ conditions around world > Production managed and directed by state and big business; personal allocations based on what's available; lower average meat intake > Nutrition and calorie intake is a key driver in daily choices (no gluttony); lab-grown meat/ fish enables high meat consumption for the 'able to pay' > Complete nutrient cycle: no such thing as 'waste'	• Householders interacting with business to upgrade and personalise their homes for receiving data-driven and automated services (e.g. grocery delivery services) • Citizens interacting with insurers, pensions, health services to negotiate personal policies based on genetic profile and life-style.
Energy	>SMART tech everywhere, extremely efficient ICT solutions (sensors, centralized computing, cloud farms) have enabled people to realise personal optimisation; homes have light, temperature and water service contracts with utilities companies, their data used to optimise resource use >Innovation does happen in the transition, implemented by the big players – energy is a security issue and therefore kept with the big institutions >Huge investment will be needed in an EU Smart grid; centralised decision >Passive consumers (one time decision to allow for monitoring and set up service requirements then passive interaction with technology-led services)	• Social entrepreneurs • Waste management enterprises • Hackers and coders (linked to accelerator programmes) • Players bringing innovation and thinking at a mass scale through big, long term contracts

Domain insights

Domain	Key insights	Key innovators
Mobility	> Rapid and efficient public, personalised, smart, transportation, with people concentrated in large cities > Electric cars are efficient batteries for locally produced renewable energy > Incentives for active travel due to focus on preventative health; investments in safe and extensive infrastructures for active travel > Less frequent flying; integrated and fast trans-European rail network; expensive; virtual technologies and experiences remove need to travel	• Consumers using collaborative platforms to negotiate with transport providers for better prices/ more personalised deals based on their similar mobility requirements
Household Living	> Very regimented, automated homes enforce rational choices; optimisation of consumption levels is a source of social and professional reward. > Learning is everywhere; achievement/ self mastery key to development; people invest in themselves and their family; seen as a moral obligation > Transparent data everywhere; accessible but people trust in business and government to help them make the 'best' choices) > Sleep seen as an informal opportunity to learn; also part of health plans > Knowledge based economy; close monitoring of everything including comparing knowledge and expertise with peers.	• Teachers and learning programmers • Data entrepreneurs; creating new algorithms to enable people to 'view' their data in new ways; to get a 'second opinion' and/ or to challenge an analysis being offered a business/ government
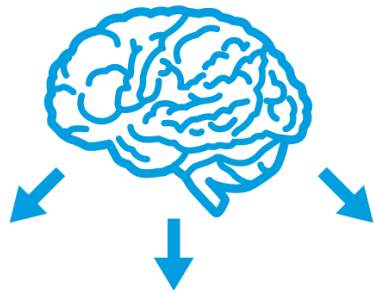
Singular Super Champions

User Innovators & entrepreneurs

Those creating and obstructing sustainable change in on the pathway to this scenario

Where do people get their agency to act towards sustainable lifestyles?

A rational society in which there is mutual obligation to fulfil one's potential as an asset to the economy.

People choose to enlist the help of trusted service providers to help them run their lives and make decisions. Virtual and real world services are highly attuned and personalised to customers' emotional state and character profiles – reinforcing the trust and responsibility vested in them.

There is an acceptance of data-driven decisions and data sharing; understood to be for personal and collective benefit. Individuals voluntarily provide their data to this as a way of participating in society and they defer day-to-day decisions and planning to complex algorithms, saving time that they can invest in skills development and career advancement.

Societies are quite homogenous as a result of globally controlled, technology-led innovation by business and government. People are comfortable with this; and reinforced by social structures. By choice, there is little social innovation
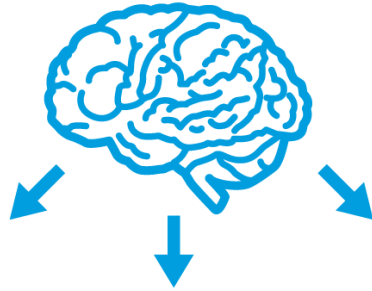
Singular Super Champions

What's the role of user innovators in this scenarios?

- Aspiring entrepreneurs with digital data & UX skills willing take part in and compete for places on business accelerators, corporate venturing or open innovation competitions.

- People wherever they are provide huge amount of data about their life and movements to allow for environmental efficiencies to be gleaned

- In 2050 people are generally happy for business and government to manage their lives for them. Customers typically play a passive role except where they are defending against real (and perceived) transgressions by business and government.

- Motivated by social challenges and innovations rather than financial gain; fighting individual 'injustices' caused by stringent environmental policies

What's the role of government/ policy?

- Creates the enabling environment for and legitimised a push towards a circular economy and environmental efficiencies as a source of global competitive advantage; incentivising innovation and capabilities.

- Dominates; centralised power; price mechanism includes and quantifies everything: resource use, pollution, health, biodiversity etc. It is a top motivator of behaviour and influences lifestyles.

- Works with business for the benefit of public health– lines can be blurry between the two

- Uses data and monitoring to prioritise services, allocate resources where required, reward 'good citizenship' and to enforce law and order.

- Enforces standardised and transparent data; especially when it comes to food and energy security.

What's the role of business?

- Rise mega-multinational firms; efficient and circular global value chains

- Running incubator, accelerator, open innovation and corporate venturing programs as a feeder for innovative ideas and people that will drive future growth

- Long-term, service contracts with consumers and citizens

- Trust is bedrock for competition; businesses work hard to keep it

- Uphold 'data ethics' in relationships with consumers; use and make recommendations drawn from individuals' data to help them optimise their lives;

- Operation of privatised public services

- Protect customers data against theft

How and why do people innovate?

Overview of the types of user or 'citizen' innovator are **most prominent** in creating change?

1. **Nimble entrepreneurs** able to move fast to take advantage of EU policy regime; driving a circular economy, efficiency and growth
2. **First-mover consumer segment** working with each other and with big business to refine first generation modular products and service-based contracts for the mainstream market; to test new utility service models; to pioneer data-driven food and health choices
3. **Data crunchers, intermediaries and thought-leaders**; online communities and political figures who are keen to ensure that individuals' information is not misused, and can be accessed to support positive living. Within the scenario itself, there is a key role for these experts in enabling citizens to exercise their civil rights against big players and acting as trusted digital service intermediaries that act on customers' behalf to share/respond to their data.
4. **Culture makers:** those in marketing and PR, and programme makers that made 'material light' consumption desirable - working independently and in collaboration to shift perceptions. Graduates who struggled for work in Europe and who created and used new means for acquiring knowledge and for demonstrating their competencies, in order to attract employers to them, rather than visa versa. Made 'personalised experience' not 'acquisition' a form of status.
5. **Data entrepreneurs** rule (e.g. pioneering new forms of insurance and recourse for customers in this data-driven world that are adopted by the mainstream).
6. **Social entrepreneurs and community innovators** developing new models of care

What type of skills are needed in this world?

- Efficiency
- Digital skills
- Data filtering and sense making
- Customisation of anything an everything
- Mobilising networks
- Empathy (to avoid a 2 tier society)

Character's name, age, and where they live:

Ariane, 25

Brief description of them
**Extroverted and social but reflective
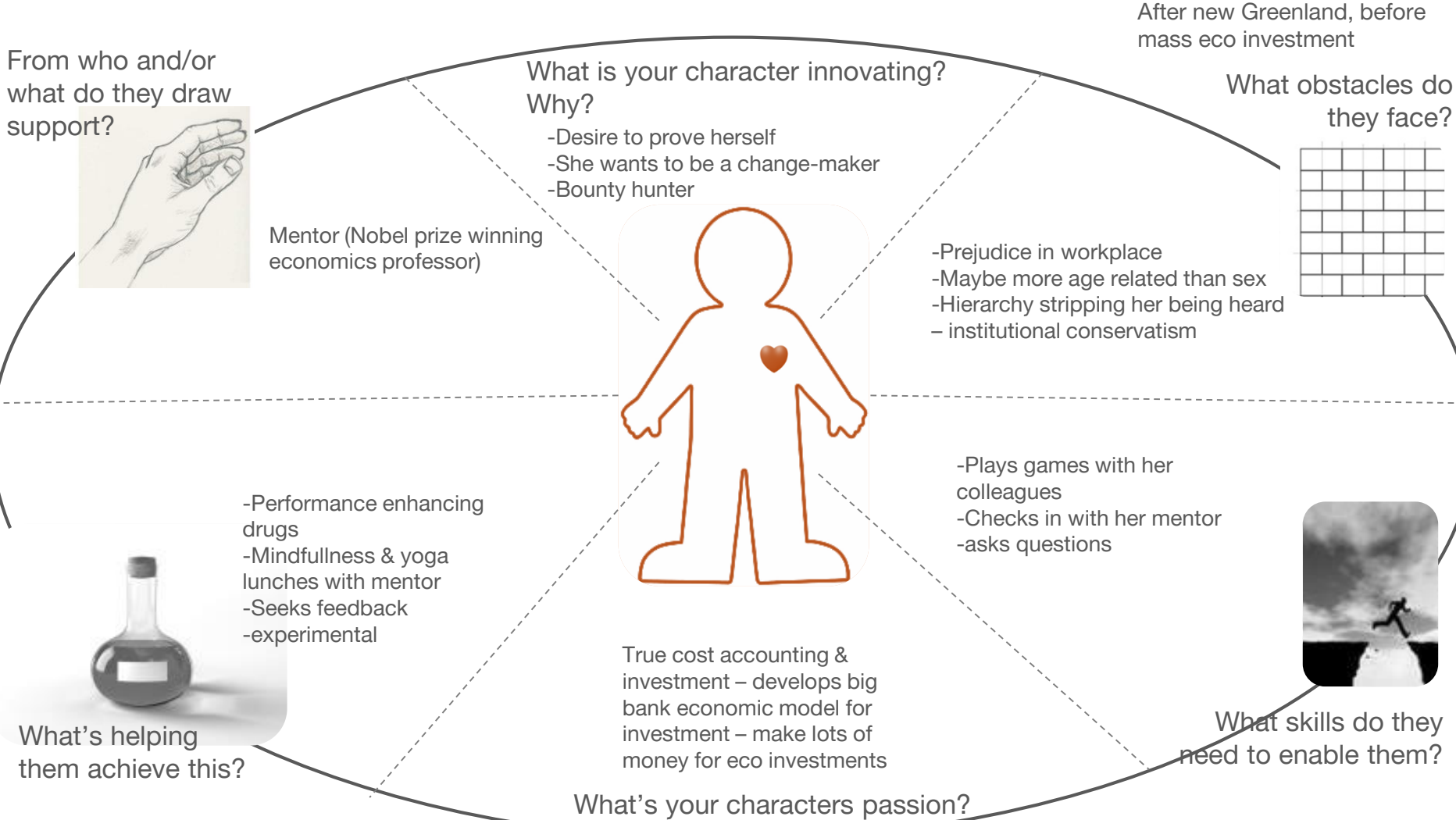Ambitious, well educated, global citizen,
Chilean degree, Oxford Masters**

On which scenario pathway do they live?

Singular Super Champions

And what year is it? **2018**

From who and/or what do they draw support?

After new Greenland, before mass eco investment

What is your character innovating? Why?

-Desire to prove herself
-She wants to be a change-maker
-Bounty hunter

What obstacles do they face?

Mentor (Nobel prize winning economics professor)

-Prejudice in workplace
-Maybe more age related than sex
-Hierarchy stripping her being heard
– institutional conservatism

-Performance enhancing drugs
-Mindfullness & yoga lunches with mentor
-Seeks feedback
-experimental

-Plays games with her colleagues
-Checks in with her mentor
-asks questions

What's helping them achieve this?

True cost accounting & investment – develops big bank economic model for investment – make lots of money for eco investments

What skills do they need to enable them?

What's your characters passion?

From who and/or what do they draw support?

-Family & friends
-catalyst organisation and think tanks
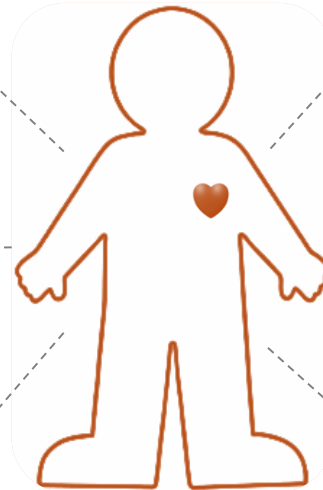-Great professional network which gives sound knowledge base and people cheering from the side lines

What is your character innovating? Why?

-Political change
-Free market (away from subsidies)
-Ecosystem services and social fuel

What obstacles do they face?
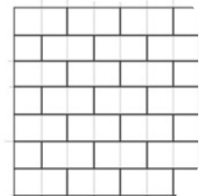
-Apathy
-Resistance to change
-Bureaucracy inertia
power/opportunities from corporate interests

-Science, technology, research knowledge
-Response to national disaster or economic crises (& combination of these)

-Business Case vision of future
-Trade offs quality info based in science and research
-Transparency in processes and subsidies

What's helping them achieve this?

-Equality/fair/inclusive
-Shared playing fields
-Values ecosystem services

What skills do they need to enable them?

What's your characters passion?

Character's name, age, and where they live:
Sophie, 32, Belgium
Good waste products

Brief description of them
-Dad was a bin man & grew up working in office of Dad's waste company (Unicore)
-Studied economics and business

On which scenario pathway do they live?

Singular Super Champions

And what year is it? 2025

From who and/or what do they draw support?

What is your character innovating? Why?

What obstacles do they face?

-Demand driven market (Initially high value theories)
- Her father's business contacts, knowledge and skills
- Her education

-Business that captures previously 'lost' materials before they reach landfill
- Offer households points for recycling materials & behaviours
-Starting small with 1 waste stream
- Invites customers to 'opt in' to extra services provided by Unicore
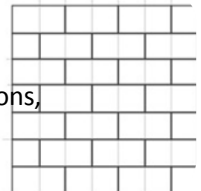
- difficult to connect different organisations, infrastructures and services
- by recapturing resources and reducing households' material footprint, the business could perversely encourage more consumption
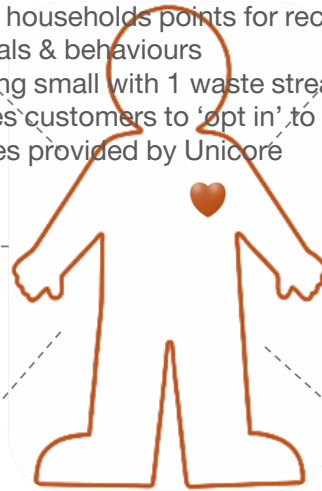
-Recycling companies/actors
-Technology for tracking/recycling process 'Material passport'

-Building networks
-Correct weighting of materials/points
-Not over incentivise

- Resource scarcity / good intentions
- Entrepreneurialism; taking her father's business legacy forwards

What's helping them achieve this?

What's your characters passion?

What skills do they need to enable them?

From who and/or what do they draw support?

What is your character innovating? Why?

Off grid renewable energy, hasn't accepted data privacy so can't get state owned energy
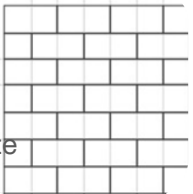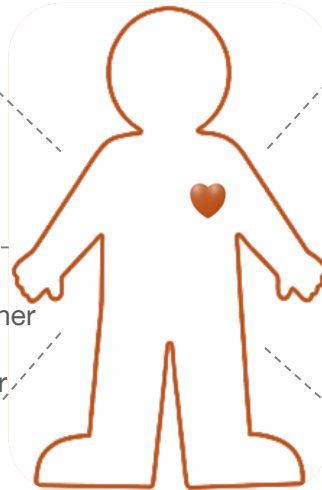
>Small underground movements like Demand Energy Equality

> Friends and peers (family have abandoned him after his expulsion

What obstacles do they face?

>Access to funding
>Big 6 opposition (along with corporate barriers)
>Foothold in the market due to top down ownership of everything

>Support/shelter and funding from other local isolated groups
> Guerrilla space to scale off the radar

>Electrical engineering skills
>Shadow networks of collaborators

Upholding social values and community innovation in the face of huge multi nationals running every aspect of people's lives
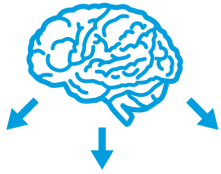
What's helping them achieve this?

What skills do they need to enable them?

What's your characters passion?

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Questions this scenario asks

- While the policy regime sparked and regulated a circular economy, other changes were needed in society to create the high levels of trust and shift in emphasis away from material goods that enable this automated society to function to meet social goals. Where did regime change come from, to create these conditions?

- How can trust be fostered while managing conflict?

- Citizens are empowered and feel secure through making their personal data available to business and government. This is the ultimate in trust in institutions who must be upholding that trust for the scenario to exist. How is that trust developed and upheld - particularly in the energy market when there are high barriers to entry for new entrants?

- What are the data regimes and policies that needed to be put in place to allow this society to flourish?

- How is social equality reconciled in this scenario?

- What is the next societal goal once the circular economy has been enabled?

Governing
The Commons
Overview

Of the pathway, key
innovations and
innovators, summary of
the domains and
characteristics of the
world in 2050

Governing the Commons | Headlines

Globally oriented

Governing
the Commons

Myth: shared and distributed power allows for a more equitable society

Goal: fairness, equality and distributed access

Identity: unique to individuals, made up of a patchwork of affiliations

Mindset: global, networked

Approach: Dynamically stable, digitally networked

Systemic approach: unconscious living system – not sure of the direction or purpose

2050

Bottom-up governance

Governing the Commons | Headlines

Globally oriented

Lifestyle: Life is lived in the digital realm, with rules that don't exist in real world
How society operates: Open data, open source and data rich; free distribution of information
Economy: Fragmented sources of income; 'multi-professional self-employment; micro-tasks
Economy: global, digitally based, fragmented, dynamic, based on cryptocurrencies and next evolution of blockchain technologies

Lifestyle: User-centred; personal optimisation is at the heart of work and welfare
Status & identity: Peer-to-peer networks give sense of security and belonging; everyone has a patchwork identity and affiliations with many different things.
Resources: Global, circular economy; distributed manufacturing; interconnected value networks/ webs. Virtual 'layer' is important for quality of life; citizens and consumers are seeking meaning
Governance: Traditional global, EU and national governance systems eroding; decentralised networks, flocks and swarms dominate decision making and governance. These are relevant globally. High trust and participation in politic; new power dynamics driven through 'Wikidemocracy'
Lifestyles: Augmented reality and digital services; emphasis on virtual not material consumption
How society operates: Ethos informal 'learning by doing'; everyone has something to offer peers; this drives status
Where change comes from: time bound flocks and networks swarming around an important issue, changing it as required

2050

Bottom-up governance

Governing the Commons

2050 Scenario summary

Digital and urban; in this world data is rich, abundant and flows around the world. People live their lives by participating in and affiliating themselves with online peer-to-peer networks, and live-out different sides of their personalities and preferences by involving themselves in multiple groups. Everyone has a political voice and chooses to participate in processes to use it.

A 'DIY' ethos prevails, with people creating personalised solutions and acting collectively where it is in their interest. Portfolio careers and self-employment are the norm; a holistic view is taken of person's skills/ attributes. Peer-to-peer groups provide the social and health safety net through commissioning services, for example, providing gateways to earning an income from delivering micro-tasks into value networks and by offering new forms of welfare

It is a society in flux as old democratic institutions have failed, and new democratic processes – coined 'Wikidemocracy' – mature. Peer 'interest' networks flock and swarms to fight social injustices and enabled by connection with iot sensors have almost entirely replaced traditional parties as the powerhouses of representative democracy. The EU as we know it in 2014, is redundant. This makes for a dynamic society in which dramatic environmental legislation has been pushed through, despite all odds.

Smart and digital fabrication and additive manufacturing proliferate and are the engines of nested and dynamic circular economies that cut across national and EU borders. We live multifaceted lives androam, venture and even go on holiday in the digital realm; consuming digital goods and services without constraint where previously that consumption took place in the 'real world'. We enhance our experience of the everyday through augmented reality and digital services, and have vibrant social lives without leaving home; commuting and 'the school run' are no-longer necessary.

The shadow side of this scenario?

>Data is so open and available that the people/ networks that have the wherewithal to model, analyse and manipulate big data are at an advantage. While data is 'democratic', in real terms, the capability to use this data – and therefore real power - could be concentrated.

>Previous institutions have been supplanted by a system of peer group negotiation and practical action. Therefore, charismatic individuals with strong social networks can wield huge influence. Some can and do take decisions into their own hands. Others take their time to build consensus using digital diplomacy, and often on a supranational basis.

>Fundamental reconfiguration of the society is likely to ensue associated crisis and breakdown which would need managing or else it could lead to extensive conflict.

>New modes are key to this and work if ethical equitable principles are upheld. If they aren't - the system is open to manipulation and new power vacuums to form.Peer-to-peer networks could wrestle for control in this world using every means at their disposal, from digital PR to coercion and could potentially wield their own forms of justice. Clannish power dynamics could be made worse by an education system lead informally through peer networks.

>Society operates within environmental limits as a result of self-surveillance policies that influence real world activity via a digital layer around it. It has been voluntarily subscribed to. How would adherence be policed in a fair way and how would individual and group allocations be decided?

>While this is a physically healthy world; the state of mental health could be lower as people lack solidity in their relationships and about the future. People habe many weak ties by lack deep connection and a shared sense of purpose with people

>The extrovert and the well-connected flourish. There is the potential for a social underclass that's cut off from opportunity.

>Shift of regulatory powers from government to peer groups/ prevalence of digital fabrication could risk lack of control in biotech innovation

Landscape factors

Wealth	Health	Economy	Environment
• Actively participating in a number of different digital communities of interest; feeling a sense of personal freedom and endless possibility in **virtual worlds.**	• Being mentally stimulated and connected in some way, to people who share the same personal passions. • Self-actualisation.	• Truly global; organised on a hybrid virtual/ geographical basis. • Capitalism is evolving as new social structures for exchange, work, services, governance, protection – and other social goods – make traditional institutions redundant.	• People are highly tuned in to and concerned about environmental issues, facilitated by iot sensors. A lot of sustainable innovation is focused around solving single issue environmental issues

Governance and power

| Governance	Identity & power
Self-actualisation is the central organising principle. It's up to individuals to choose which peer groups choose to affiliate with, based on their interests and passions. Trust is quickly won and lost and is easily created and sensed and manufactured through social profiles and networks. If there is enough dynamism, energy & momentum – then you see an explosion of energy around particular areas. This is often in response to a lack of fairness or equality that needs to be rebalanced. The power of the crowd is really making decisions about what is done when. Data standards and open data philosophies facilitate this. Policy becomes more open and beyond the domain of hierarchical ancient institutions but one that is enabled by a host of new types of innovators and networks of people The way societies organise can seem chaotic & fractious, there is a need to look at the collective picture & make sense of it for others, by a neutral party, – it can feel like a digital swamp. There is a certain amount of trust that others aren't wildly consuming. Trust is vital because makes the governance system accountable and this mode of organizing possible.	• People identify with virtual tribes. People have many weak connections and fractured and unique identities. • Charismatic individuals attract people to them through inflated digital profiles, creating some concentrations of power. Some use this fairly and responsibly to drive collectively and positive change, the same cannot be said for all • Communities – made up of passionate people – coalescing around strong discourses/narratives create temporary concentrations of power, energy and identity for people. • Those who design new governance structures and regimes weild alot of power and influence. They need to be conceived with fairness and equality at their heart for this to create a shift towards sustainability in society.

Governing the Commons

Everyone has the ability to optimise their life;
if something is not working for you, change it, create it,
and if you can't, find people you can work with to make it
a reality.
Diversity is embraced and celebrated.

"My needs matter, our needs matter"

"I believe in the power of the crowd to fight injustices"

Artefact from the future

YOUR VIRTUAL FAMILY PORTRAIT
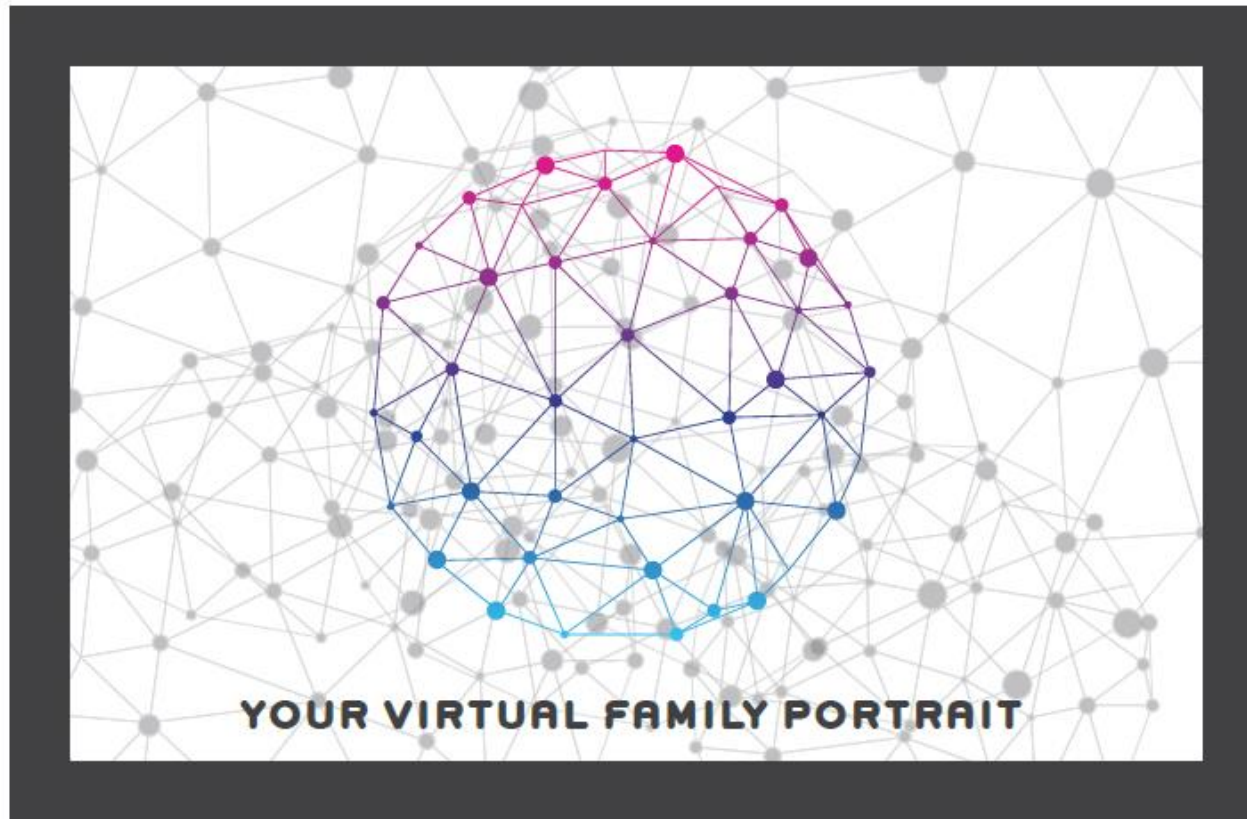
With so many digital connections and a unique patchwork of friends - you need a virtual family portrait in your home to help you remember who knows know and how it all fits together to make up your life.

The transition

What is journey to 2050?

Governing the Commons

Pathway to 2050

Middle and lower and middle income households feel the squeeze as the cost of living soars, and wages and pensions fail to keep pace.

A number of EU governments tackle the looming gap between energy supply and demand by forcing radical, energy efficiency legislation through parliament.

3D printers that **reprint post-consumer waste** into new items reach the point of market dominance. A landslide of companies that have failed to adapt their business models, go **bankrupt**.

2019 || Moment of Change

Start-ups and interest groups create and share customisable blueprints for distributed manufacture. Copyright laws are 'live documents' that are digitally updated 24/7.

Job losses from traditional manufacturing hit a high. The term 'Micro-Work' is used to describe the emerging European economy; based on multi-professional, self-employment.

A growing global network of individuals calls for citizens to act together to deal with climate change and rising resource prices, because governments are failing to. They call for global reforms and lobby national governments for more stringent environmental legislation.

The EU votes in favour of reforming taxation to include full environmental costs in pricing.

Peer-to-peer networks initiate a global act for **self-surveillance**. Every digital item must operate within environmental limits. It's only possible to exceed the limits outside **digital realm** (not doable for most people).

2042 || Moment of Change

European education policy recognises peer networks as part of the education system and guarantees them the right to give degrees that can be considered equivalent to MA and PhD degrees.
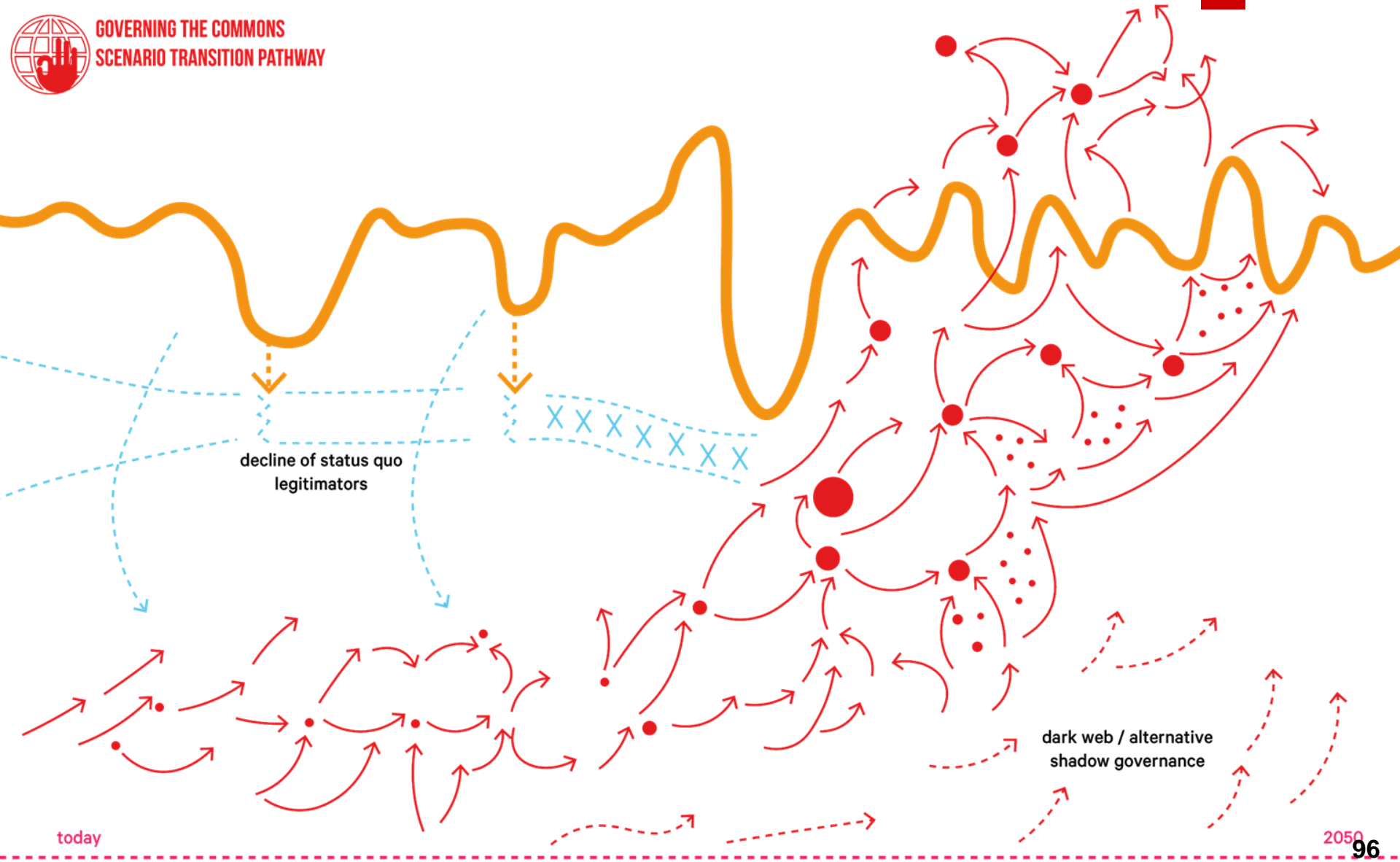
More and more people start to live in neighbourhoods with people who have complimentary skills to their own - this seems more shared appliances and requires less living space.

Note: these are the edited pathways that we took into the FutureShapers workshop

Transition overview

Legend:
- Landscape
- Regime
- Niche

GOVERNING THE COMMONS
SCENARIO TRANSITION PATHWAY

decline of status quo legitimators

dark web / alternative shadow governance

today

2050

Landscape level transition


1

decline of status quo legitimators

2
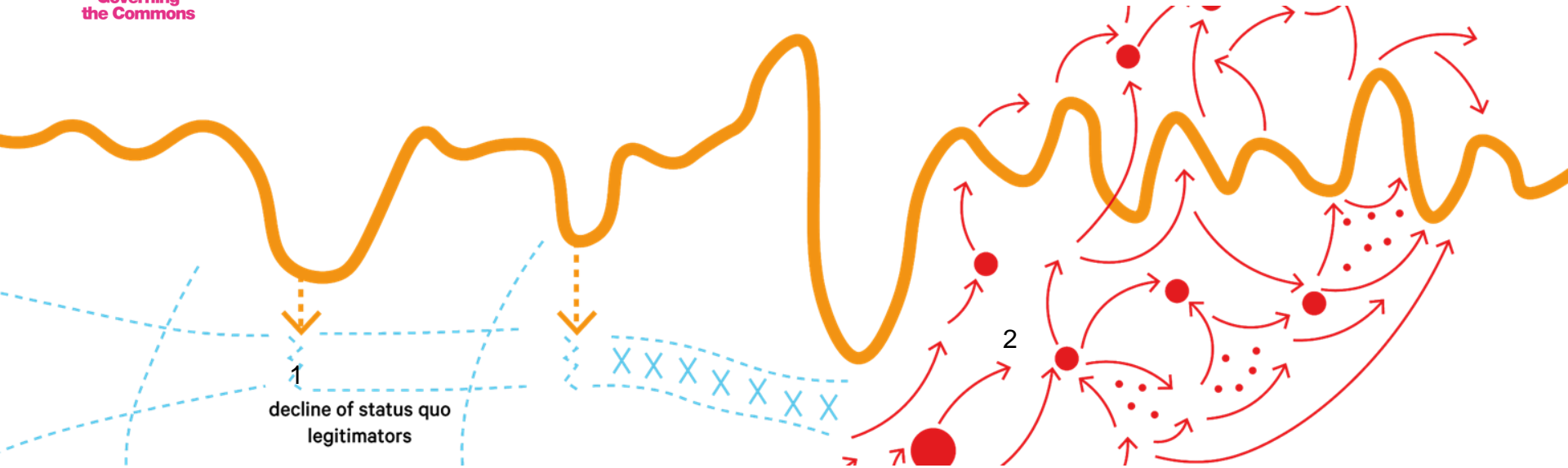
The story of the landscape pressures has a big impact on what is possible in this world.

(1) There is a narrative shift that ensues as the regime fails to respond to the external shocks and resource pressures, in tandem with the **decline of the traditional legitimations**.

(2) The shift is recognising that **hierarchical institutions are no longer capable** of responding to the systemic and interrelated challenges society is facing.

Regime level transition

decline of status quo legitimators
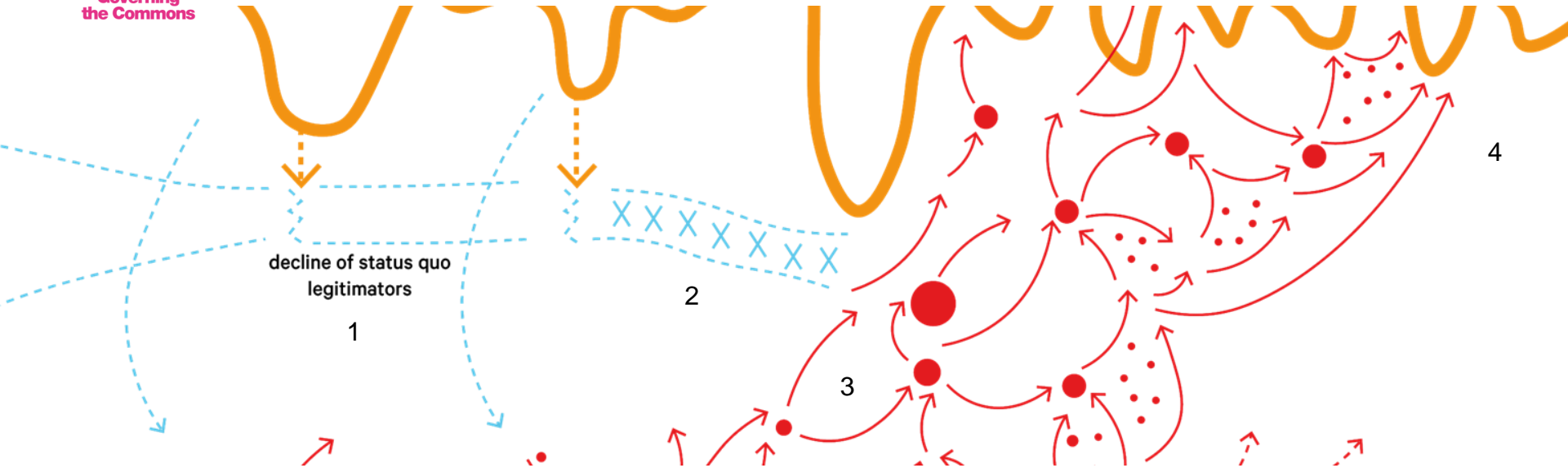
2016 - 2026

(1) The regime is **un-resilient to shocks** and fails to respond in a meaningful way. The regime as we know it, disappears and fails to be relevant. Niche actors are taking their place as they more adept to dealing with shocks as their networked, flexible, self organising and more able to respond fast to changes.

(2) There becomes a **move away from institutions** towards individuals and networks as the organising principle.

2026 - 2050

(3) What was the niche in 2016-2026 becomes the mainstream way of organising society. There is **governance through co-creation** – a system that lives and evolves and is resilient. Connections between people are enhanced by some aspects being algorithm, sensor and data led. There are lots of shallow connections.

(4) There is so much data – there is an digital data evidence base for everything – this means there are no second chances for people who are perceived to have 'done wrong'
There is **recognition of the need for ongoing social (legal and political) evolution.**

Niche level transition

Governing the Commons

today

dark web / alternative shadow governance

2050

1 2 3 4
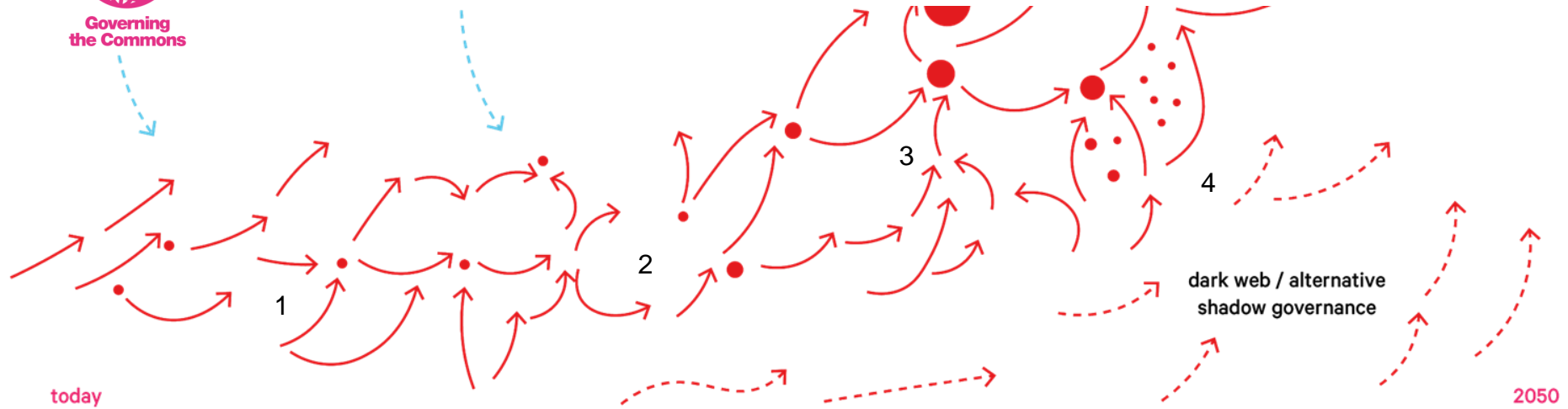
2016 - 2026

(1) Powerful networks, movements and communities grown in response to issues people are passionate about. On one hand you have vibrant online communities coming together to act around climate change, ocean plastics, community energy challenges. They innovate new ideas, share learning from experiments and transcend regional and national structure by learning from those around the world with common interests, it also allows those with extreme views to connect and mobilise as well. These global networks and infrastructure become the thing that is relevant and meaningful in people's lives. There is resilience in having many shallow connections and the ability to act on your own interests and desires and this is perceived to be fairer than a world dictated by others on your behalf.

(2) People who mobilise networks wield a lot of power and influence and become the new legitimators (but they often don't realise their power and value.) This new approach becomes so significant it becomes the new regime mainstream way of organising.

2026 - 2050

(3) With the networked 'wikidemocracy world' mainstreaming, there is the emergence of a powerful shadow web in the niche. Those with destructive and negative perspectives are able to coalesce. Networks start to emerge for hosting ethical debates which analyses what is happening and provides commentary of the fairness of this.

(4) Public and personal shame which leads to mental health challenges. In response there is the emergence of history hackers – changing the 'public' story in pursuit of fair identity.
Tired of a superficial online existence, people are seeking deeper connections – people crave stronger ties, the creation of networks with a greater defining the purpose start to exist as sub networks. This helps people to find new ways to connect at different levels.

99

Governing
the Commons

Innovation

What is being innovated to enable sustainable
lifestyles in on the pathway to this scenario

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2019 - 2020's	• Distributed digital fabrication creates disruption and business model innovation • User groups play significant part in emerging value networks; self-customisation takes off • New design and producer cultures emerge that reduce material consumption	• Energy efficiency legislation in big EU economies • Entrepreneurs that innovate quickly in response • Availability/ ability to monitor data to drive change • Materials innovation	• Multinational companies for whom investing in changes to their business model and manufacturing threatens loss of market share • Waste management and recycling companies not agile enough to service the needs of a circular economy; they become redundant. • Households and businesses that face up-front costs investing in energy efficiency technologies; potential sacrifice in heat/ warmth/ light.

2030's	• Rise of citizen movements in response to lack of investment in key services by governments:
	  • local communities establish rudimentary 'DIY Smart grids' to manage energy demand ; negotiate new terms with big energy companies
	  • user groups share data to purchase optimised mobility services
		• High cost of essentials, fuelled by change to tax regime to internalise environmental costs
		• Widespread use of community mesh networks
		• Energy supply shortages
		• Data availability
			• Established energy companies that face loss of control and economies of scale
			• Established transport and food companies that are facing increasing resistance from consumers; and consumers using negotiating power

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2038 - 2042	• dissatisfaction with government leadership on climate change causes peer 'interest groups' to form and act to apply pressure and to create solutions • a global act of **self-surveillance to enforce environmental limits** is borne of this collective political action • it uses the digital realm to create dramatic change in the real one	• the technologies and data that enable people to communicate and act in a coordinated and conclusive way • access to data and tech. by many • Internet of Things creating a 'digital sensing layer' to reality	• Cities, industries and businesses that are unprepared for dramatic cuts in resources • Those concerned about data privacy • Those with interest in over-stepping environmental limits; business whose business models rely on it, • Governments who have failed to act to the extent that citizens want and are threatened by the shift in power.
2042 - 2044	• shift in governance from being institution to peer network-led • national and EU governments lose trust and power; their role in democracy changes: emergent decision-making processes and structures are formalised – coined 'Wiki-democracy' • Governance bot are in place to ensure fair network/system dynamics and montior this globally	• Discontent effects of climate change economy/society • Pattern: collective action affects policy • High levels trust • Belief in change	• Governments, associations and unions concerned about political instability • Peer groups representing 'status quo' interests would resist the 'single issue' participation in democracy offered by Wiki-democracy because it threatens change. • Existing political parties question ability of citizens to weigh up complex, systemic issues to make decisions in the collective interest • Bitcoin developments

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2044 – 2050	• Consumption in the digital realm takes over that in physical realm; big drop in material consumption leading to rise of digital economy • Identity and 'life' in digital realm is more important for consumers/ citizens than that in real world.	• Environmental legislation that constrains materials • Citizens and entrepreneurs empowered to act in digital realm • Lack of investment to update physical infrastructures incentivises shift to 'digital'	• Policy-makers in health and public health experts in health who'd would be concerned about effects on mental health • 'Older generations' for whom this would represent a dramatic life-style shift

Domain insights

Domain	Key insights	Key citizen innovators in 2050
Food	• Complex global production, distribution and smart storage systems; user-driven • Detailed information about provenance of ingredients; personal diet recommendations • Widespread biotech innovation deals with food vs. fuel pressures on land-use at global scale • People print their own meals and ingredients	• User groups concerned with food security and biotech contamination; work with businesses to build-in resilience and safeguards, and work with users to establish contingencies (e.g. storing food printer inputs)
Energy	• Reduced consumption; time of use pricing • Sub-optimal European smart grid, as local 'DIY grids' combine, retrospective government investment in upgrades • Super smart homes and low energy tech; widespread energy harvesting • Biofuels, renewables, no carbon capture/ nuclear • Households and businesses buy solar PV and energy harvesting products on print-use-print basis (e.g. at Ikea)	• Data hackers and tech entrepreneurs • Community organisers/ entrepreneurs that facilitate local energy solutions • User group negotiators that represent interests to big energy companies

Domain insights

Domain	Key insights	Key citizen innovators in 2050
Mobility	• Vastly reduced physical travel; physical exercise takes place as part of simulated sports • Rich, personalised virtual travel and holidays • Personalised digital services enable co-using of cars and use of public transport	• Citizens searching for fulfilling, meaningful relationships by forming virtual families/ communities • 'Rejecters' of life in digital realm, creating 'life outside'; introverts seeking an alternative life-style in a highly extravert culture
Living	• Live in flats and work/ learn at home; lot of time spent in local neighbourhoods • Smart tech enables healthy life-styles; emphasis on personal awareness and decision-making • Digital services personalise home décor, entertaining, entertainment and cooking • Lot time spent managing social networks/ relationships and personal reputation	• Personal 'agents' that orchestrate individuals' networks on their behalf • Digital 'neighbourhood watch' groups that look out for abuses of personal data and voting rights

Governing the Commons

Citizen Innovators
Those creating and obstructing sustainable change in on the pathway to this scenario

**Governing
the Commons**

What's the role of user innovators in this scenarios?

Everyone is a 'user' or 'citizen innovator' because everyone personalise and optimises every aspect of their lives. People actively participate in creating the goods and services they buy – made all the more possible because much of our consumption takes place in the digital realm or is manufactured small scale at home or locally.

Those who created significant change on the pathway paved the way for Wikidemocracy by 'getting things done' in collaboration with peers, particularly the pioneers of self-surveillance environmental legislation. Innovating new governance approaches is key

In 2050, those creating positive change are (1) championing values and ethics, and finding ways to regulate them (2) empowering disadvantaged people in this extrovert, entrepreneurial society (3) seeking to stabilise the power dynamics in 'Wikidemocracy' (4) connecting people to purpose

What's the role of government/policy?

Government and policy as we know them in 2014 have ceased to exist.

Alternative decision-making entities and structures exist, that cut across national boundaries. Officials that champion particular agendas could exist, elected by peer-groups.

Policy and regulation are likely to be data driven, and to be enforced by private detective agencies that are commissioned by peer groups to service their interests.

Time and issue bound flocks, networks and swarms become the new way of governing and implementing policies

Eroded national governments still play a role in taxation and channelling funding into 'complex' services (e.g. infrastructure projects, supporting welfare for Europe's aging population, legal system, defence). Supplementary public funding is made available for healthcare cooperatives.

What's the role of business?

Business is horizontally integrated and operates on the basis of dynamic, value networks. Consumers and citizens play an active part in these value networks – both through co-creating and personalising product and service offers and through distributed manufacturing.

With money behind them, businesses form powerful lobby groups and use their social marketing clout in the digital realm to shape wants and needs in society. Big, multi-national businesses are now network hubs.

Where do people get their agency to act towards sustainable lifestyles?

Governing the Commons is a connected, flexible and passion-fuelled world in which people strive for fairness, authenticity and environmental justice. Social justice and equality is key to the success of this world.

People gain a sense of agency in their ability to contribute to a cause bigger than them – they will do this in large and small ways – depending on their needs and passions at that time.

Creative self-expression and co-innovation with others are interwoven through all aspects of work, personal and civic life. There is a blended reality between your life, personal and work interests. Everyone has a unique perspective on this due to the pathwork identities that exist.

Emotional intelligence, the ability to collaborate and the wherewithal to do so are vital.

Information is abundant and people tap in to the wisdom of their personal networks and communities to make decisions. Data is openly shared and diversely interpreted. People invest time in processes of discussion and creation as it contributes to their identity.

How and why do people innovate?

Overview of the types of user or 'citizen' innovator are **most prominent** in creating change?

1. Those able to mobilise collective action – among local communities, among user groups and among peer 'interest groups'. These reason for doing this is to ensure more equitable spread of power and to influence change aroudn particular issue.
2. Those able to leverage the resources and capabilities to manipulate big data, at a global scale - to instigate self-surveillance and the data-driven decision-making processes that form the heart of Wiki-democracy
3. Citizen governance innovators" key – to design a fair and equitable system that can evolve e.g. by creating equality bots
4. Purpose led network builders

In 2050, those creating positive change are:
● championing values and ethics, and finding ways to regulate them
● empowering disadvantaged people in this extrovert, entrepreneurial society
● seeking to stabilise the power dynamics in 'Wikidemocracy'
● connecting people to purpose

What type of skills are needed in this world?

- Digital PR and communications
- Data analytics
- Creative digital industries
- Negotiation and diplomacy
- High levels of emotional intelligence
- Personal promotions; 'brand' management
- Managing personal risk throughout life and at different stages in life
- Advisory services e.g. related to personalisation and 'life optimisation'

Character's name, age, and where they live:
Clara, 67, Poland; has spent a diverse career in the tech sector

Brief description of them
Data Entrepreneur – health. Five years ago, Clara found out she has a rare health condition and is now galvanising those with similar and related conditions to fill gap in research and health services, in order to treat them.

Which domain do they link to? Living

On which scenario pathway do they live?

2031

And what year is it?

Governing the Commons

What is your character innovating? Why?

- Networks, trust and tailored 'frameworks' to enable those with a particular health need to commission their own services
- Many of the treatments needed can be delivered remotely; so hers is a global initiative
- The rarity of her disease means there aren't specialist services available
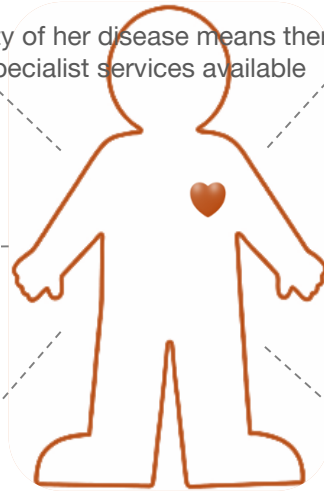
From who and/or what do they draw support?

- Genetic and medical experts who are advising her on the health risks, treatments and on the evaluation of options from a health perspective
- Her partner who is her carer at home; and a peer time-banking service that enables her children to transfer time credits to her, to offer local support with day-to-day tasks

- Citizen science initiatives and quantified health devices which are making health data available and making it possible to connect with others on the basis of their health data
- Aging population around the world, and self-employment in later life is driving awareness and motivation to improve health and health services
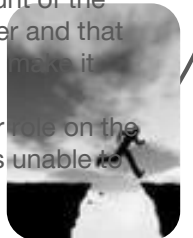
What obstacles do they face?

- Ensuring the quality of the services once commissioned
- Managing service transformation as new technologies become available
- Data security: only participants in the commissioning exercise benefit from the services commissioned
- Commissioned services must connect (digitally/ physically e.g. surgery) with services commissioned via other means

How are they overcoming them?

- Project manager to manage the services, once commissioned
- Health and life insurance that take account of the services that will be made available to her and that provide the expertise needed upfront, to make it happen
- Guardian to look after her affairs and her role on the commissioning board, at the point she is unable to manage it herself

What's helping them achieve this?

- How can I do all of this, and sustain the momentum, when my own health is declining?
- How can I feel safer and more secure in my older age?

What skills do they need to enable them?
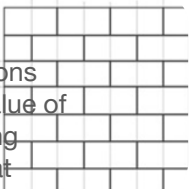
What are their questions?

Which domain do they link to? **Business**

What is your character innovating? Why?

- The concept of global self surveillance, as a way of enforcing regulation
- Democracy driven by peer networks and social relationships, rather than political parties

From who and/or what do they draw support?

- The established business community; less serial entrepreneurs and start-ups, middle sized businesses

What obstacles do they face?

- Huge cost of acting against IP transgressions
- Being able to demonstrate the potential value of stolen IP for his business; he must wait long enough for sales to be established, but that means lost revenues for him
- Working with networks to pioneer the data harvesting and algorithms that could enable self-surveillance

How are they overcoming them?

- Bags of charisma; a well recognised figure and powerful advocate for the movement
- Well-connected amongst business.
- Also well-connected in political circles – globally!

What's helping them achieve this?
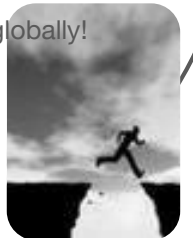
- Using the internet of things to collect evidence of lost income as a consequence of IP transgressions and to demonstrate the cost of prosecuting against those
- Participating in peer networks that scan and detect these

What are their questions?

- Given the global nature of this challenge, who are the decision-makers that can legalise and institute 'self-surveillance' to protect business IP?

What skills do they need to enable them?

Character's name, age, and where they live:	Brief description of them	On which scenario pathway do they live?
Former detective employed by the government in Greece	**Digital Detective and entrepreneur.** Regularly commissioned to seek out and synthesise evidence of international self surveillance laws. Also acts on behalf of citizens to protect them against fraud and theft – including identity theft. Which domain do they link to? Living	**2036** And what year is it? Governing the Commons

From who and/or what do they draw support?

- Links and contacts into criminal investigation units

What is your character innovating? Why?

- Means for enforcing self-surveillance laws

What obstacles do they face?
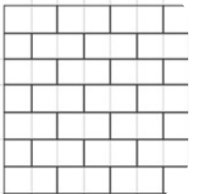
- Law-breakers are very agile and know that they will be being chased so employ 'counter detectives' to falsify information and to obscure their activities and identity
- Weak institutional support to bring consequences for criminals

How are they overcoming them?
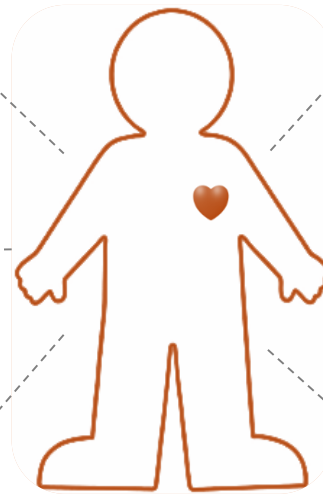
- Ability to collaborate with government-funded legal system operators; knowledge of and ability to stay within law
- Manage a global network of data hackers
- Ability to commission and/or run complex surveillance software

What's helping them achieve this?

- Continual demand for his services from peer groups, cooperatives and government law enforcement agencies
- Trusted reputation

What are their questions?

- Criminals are continually innovating new ways to escape self-surveillance laws, how can I keep pace with this level of investment as a self-employed consultant?

What skills do they need to enable them?

| Character's name, age, and where they live: | Brief description of them | On which scenario pathway do they live? |
| Sylvia, 35. Italian, but lives in Berlin. Tech start-up founder. | **Social Activist**, using peer-to-peer networks to lobby for environmental laws in the digital realm – focused on food security and quality. Campaigns for global laws to force the economy to operate within environmental limits. Attempts to achieve this in the 'real world' have failed. Which domain do they link to? All domains. Food in particular. | **2040** And what year is it? Governing the Commons |

What is your character innovating? Why?
- Campaigning for global, self-surveillance laws to force stringent limits to growth.
- Attempts to achieve this in the 'real world' have failed. Her family's artisan legacy has been one of the casualties.

From who and/or what do they draw support?
- vast social networks, particularly in tech and food producers ecosystems
- family who used to run an artisan business making balsamic vinegar in Modena
- supporters and other campaigners in the 'environmental limits' movement
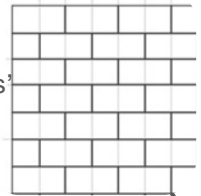
What obstacles do they face?
- opponents of the 'environmental limits' movement who are investing large sums in propaganda to stop them
- complex data analytics to make the case that global environmental laws will deliver returns for different stakeholder groups
- gaining right connections to influence decision-makers around the world

How are they overcoming them?
- Digital diplomacy
- Digital PR
- Modellers and data hackers
- Campaigners with vast and diverse social networks

What's helping them achieve this?
- creative passion of people in the 'environmental limits' movement – e.g. digital PR, modellers
- disruptions to supply agricultural commodities, rising costs of food production and increasing shift to 'synthetically grown' ingredients for 3D printed cuisine

What are their questions?
- How can I show that operating within environmental limits is the most favourable route forwards?
- How can I counter the prevailing view that technology will save us?

What skills do they need to enable them?

Character's name, age, and where they live:

Lefteris, 51. Greece. Local politician

Brief description of them
Social Activist against enforced environmental limits through self-surveillance laws. Former local politician, now citizen group advocate.
Which domain do they link to? Living

On which scenario pathway do they live?
2040

And what year is it? 2025
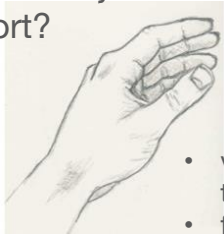
**From who and/or what do they draw support?**

- vast social networks, particularly in tech and food producers ecosystems
- family who used to run an artisan business making balsamic vinegar in Modena
- supporters and other campaigners in 'environmental limits' movement

What is your character innovating? Why?

Families in Greece are bearing the brunt of global inaction on climate change, but are not the major European contributors. He believes enforcing universal environmental limits will further disadvantage the Greek economy. He is proposing alternative legislation that reflects individual countries' historical emissions

What obstacles do they face?
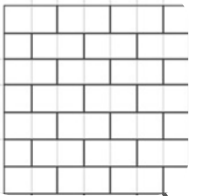
- Peer groups in larger and better prepared economies are lobbying against his position powerfully – using propaganda as well as constructed arguments
- Securing more signatories than his 'opponents' to secure victory

- As a well-known and well-connected political figure he is able to leverage funding for digital PR and large numbers of citizen 'signatories' to his alternative proposal.
- These factors enable him to rally commitment from 'disadvantaged communities' outside Europe

- Ability to model and manipulate data to make the case for households and user groups in Greece
- Ability to bring his proposal 'to life' for ordinary people so that they feel able to commit to his alternative model

- Global self-surveillance is aimed to be for the greater good. How can we ensure that this regulation is enacted in this spirit of fairness and mutual benefit?

What's helping them achieve this?

What skills do they need to enable them?

What's your characters passion?

A character who is resisting/destructing change..

What questions does this scenario ask?

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The erosion of nation states and national and supranational institutions draws back many of the welfare and regulatory functions of 2014. Society effectively self-organises its own solutions and the policies needed to install them – and this new form of governance is still settling down. Environmental limits are strictly enforced via technology.

- How are cultures of respect , equality and upheld in a more dynamic, and even volatile, democratic system?
- Does self-surveillance play a role in this also – and if so, how are human rights and civil liberties ensured?
- How can there be a managed breakdown of established organisations and institutions that allow for the formation and acceleration of uptake of a new regime . way of organising society?
- How will conflict and unease be managed?
- What's the role of business and institutions in this society?

It is unclear how these reinterpret 'real world' democratic processes for the digital realm.

- What organisation or committee brings stability to this potentially volatile situation? How does 'fair' and 'representative' decision-making happen?
- How will governance be innovated on a global scale with ethics being upheld?
- If issues are dealt with on a singular basis - how can there be a systemic approach to all important issues necessary to tackle?

Local Loops Overview

Of the pathway, key innovations and innovators, summary of the domains and characteristics of the world in 2050

Local Loops | Headlines

Top down governance

Myth: regional diversity and devolved power will enable greater resilience and regional flourishing

Goal: sustainable, flourishing and resilient regions

Identity: strong sense of local identity, sense of being European

Mindset: love and respect for of diversity

Approach: distributed and devolved, valuing different approaches and celebrating diversity

Systemic approach: systemic thinking

Local Loops

Local Loops | Headlines

Top down governance ← **2050**

Resources: EU-led ideology pursues regional resource security through protectionist policy frameworks

How society operates: Cities track resource flows to protect/ manage multiple 'Local Loops'; place-based procurement

How society operates: Owned and controlled data; data rich; automated; user-centred

Lifestyles: Business, social life and politics based on professional communities called Professional Guilds located within local resource loops

How society operates: Strong collaboration within and among guilds; customised local and regional design solutions

Identity & status: Status gained by hard work and craftsmanship; mutual, problem-based learning and teaching. Strong associations and affiliations to your local area & guild

Economy: Sharing economy; service-based consumption; local culture is highly valued and celebrated

Global economy; efficient local clustering of business and industry; local employment

Governance: Global governance and policy-making is focused on scientific expertise; strict global regulation based on global treaties on biodiversity and other environmental issues; emphasis on science-led

Governance: Strong, far-sighted and coherent national and EU governments; devolved governance to cities

Where change comes from: Centralised political decision making and frameworks and locally developed implementation and action

High level of trust in expert decision-makers in guilds to represent their members; offer security

Where change comes from: networked local areas, many people acting collaboratively

Local Loops

2050 Scenario summary

Europe is made up of millions of local loops, thanks to the mandated European Framework. Efficient and effective flows of resources and information are enabled by a centralised spine of essential resources allowing for the fair distribution and co-ordination of key resources between loops/regions.

Citizens spend time living and working their local communities and through associations with their professional guild. Notions of home and work have disappeared. Global knowledge and innovations are exchanged via technology, government programmes and travelling storytellers.
Families lead busy lives, contributing locally in many different ways. They outsource chores and eat out a lot in neighbourhood canteens to enable them to focus on their work and social life in Professional Guilds.

Goods are exchanged through time and developed on a need basis or in response to competitions. There is lots of exchange between regions – for example Norway trading energy to Italy in return for food. This helps to share learning and mutual understanding between different loops.
It's a largely safe world where trust is dominant within loops. However there are regions of discontent and conflict.

The shadow side of this scenario?

Without the right flows of information between local loops, this world is for some, becoming quite claustrophobic.

For some they may choose to drop out of the loop/guild system and it is unclear how this will impact the social dynamics in regions, but it could be easy to ignore these types of challenges.

Similarly areas scare in resources (or strong community leadership) may find it more difficult to existing and trade with others. This may lead to very rural, disconnected loops that struggle and aren't appropriately supported under the European Loops Framework.

Landscape factors

Wealth	Health	Economy	Environment
• Contributing to the flourishing of your local community and guild; being part of a city/ region that's able to meet its resource requirements and basic needs • Working when your skills are required; contributing to the community in other ways, like growing food and caring for others. There is some wealth gained via your social status and participation	• What it means to be happy and health is being part of a thriving local guild/ community. To see your needs being met, thanks to the support of others. To be physically balanced and mentally calm.	• Based on trade and exchange of goods, services, skills, knowledge and time within and between city regions. Artisanal businesses form local networks of value that keep the economy flowing to meet needs. • City regional economies no-longer operate on a growth model and are more needs based.	• Environmental concerns are placed on an equal footing to social concerns. • Much improvement has been made in terms of efficiencies – but as implementation of policy happens at a local level there is inconsistencies across countries and Europe as a whole • Localised energy production has mainstreamed

Governance and power

Governance	Identity & power
The European Commission set the direction of travel for societies, via the 'New Green Deal'- Power is devolved to the local level to implement and organise how this is achieved. At a local level cities and towns are responsible for day to day governance & people organise themselves into Guilds, or communities who all work together to form local networks of value – exchange goods, energy, food, skills and more. This is the locus of governance in this scenario, mimicking principles of self organisation People are empowered to act as they have been given license to implement local solutions by the EU – and they are have a sense of agency thanks to working collaboratively as local groups. Everyone helps to secure resources and safeguard the economy by helping their Professional Guild to flourish. They advocate for their guild and members in city governance processes, and by supporting the politicians and policies that will protect local resource loops for Europe.	• People are accepting and empowered by top down policy at EU level, with freedom to act, take decisions and innovate locally. • Power sits with community guilds and city government officials • Institutionalised power dynamics develop within professional guilds. Influence is wielded through networks that trade and share within and between cities. Politics of a different kind is dominant. • Communities and cities have very strong and unique sense of connection and identity. • People have a strong sense of identity to their local region, however the is acceptance of diversity and celebration of that across Europe.
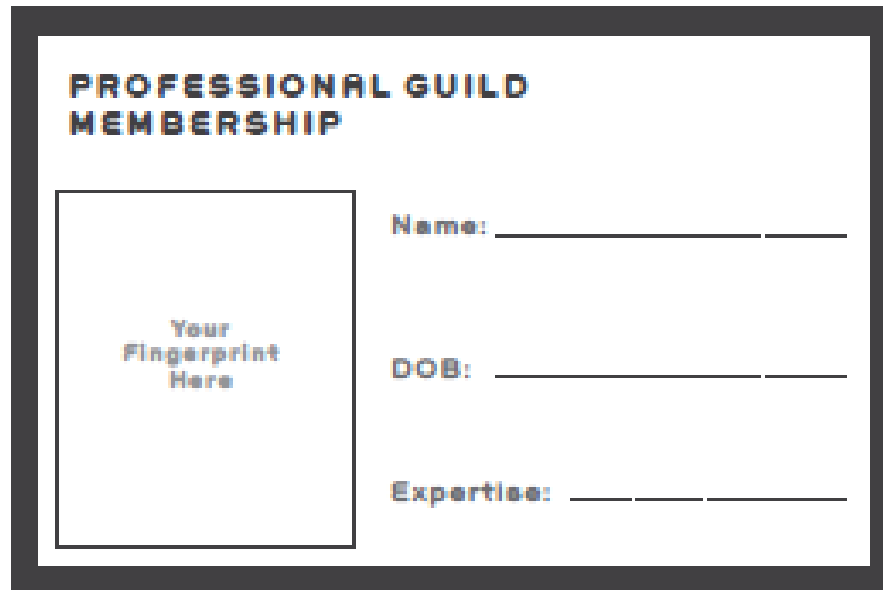
Accepting of a top down approach, but with freedom to innovate at a local level.

Each locality operates like an ant colony. Each person has their own tasks, but they're collectively working towards the same goals.

"The beauty of synergy is that it serves to add not subtract"

"I'm a proud European and I'm committed to contributing to making my local region flourish"

Artefact from the future

PROFESSIONAL GUILD
MEMBERSHIP

Your
Fingerprint
Here

Name: _____

DOB: _____

Expertise: _____

A cross between a passport and a loyalty card - each guild and local region has a different form of ID for it's members. It comes in the shape of a digitally enhanced card for some, or a piece of jewellry for others.

The transition

What is journey to 2050?

Local Loops

Pathway to 2050

Rising energy costs see interest rates soaring and the price of food, transport and electricity rocketing.

Only a small number of logistics companies can survive as oil prices put many companies out of business

Riots and protests break out all over Europe as a sharp rise in energy prices pushes up inflation. Fear of a 'return to austerity'. **Energy security** is top of the agenda.

2016 || Moment of Change

Governments are forced to look at reforming in economic policies and governance structures.

Drastic price shifts force people to start exploring more local and secure production alternatives.

The line between work and leisure time is blurry as people spend more time in their local communities

A group of workers in Ireland launch the New Craftsmanship Index to measure employee engagement, motivation and a sense of usefulness and purpose in their work.

Leading economists in Slovenia launch the concept of the '**Guild Economy**'. Their research finds that European cities with guild-like structures for small businesses are experiencing higher levels of economic **growth**.

2025 || Moment of Change

European education policy recognises guilds as part of the education system and guarantees them the right to give degrees that can be considered equivalent to MA and PhD degrees.

More and more people start to live in neighbourhoods with people who have complimentary skills to their own - this sees more shared appliances and requires less living space.

Pioneering cities start to experiment with new financial regimes based on tangible assets such as energy, strategic minerals and skills.

It is widely accepted that the era of oil and modest energy prices is over. Many regions have managed to become self sufficient through local resources.

National governments delegate a substantial part of their **budgets** to cities.
EU launches a '**Local Loops**' framework of incentives to encourage regions to become **self-sufficient** in key resources.

2030 || Moment of Change

There is less money from national governments to invest in national infrastructure. However he EU is putting more power and resources into transferring knowledge in the field of "Local Loops management".

Note: these are the edited pathways that we took into the FutureShapers workshop

Adaptation to new conditions happens quite unevenly – as some regions have more resources than others plus some regions started experimenting earlier than others.

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Transition overview

Landscape

Regime

Niche

today

2050

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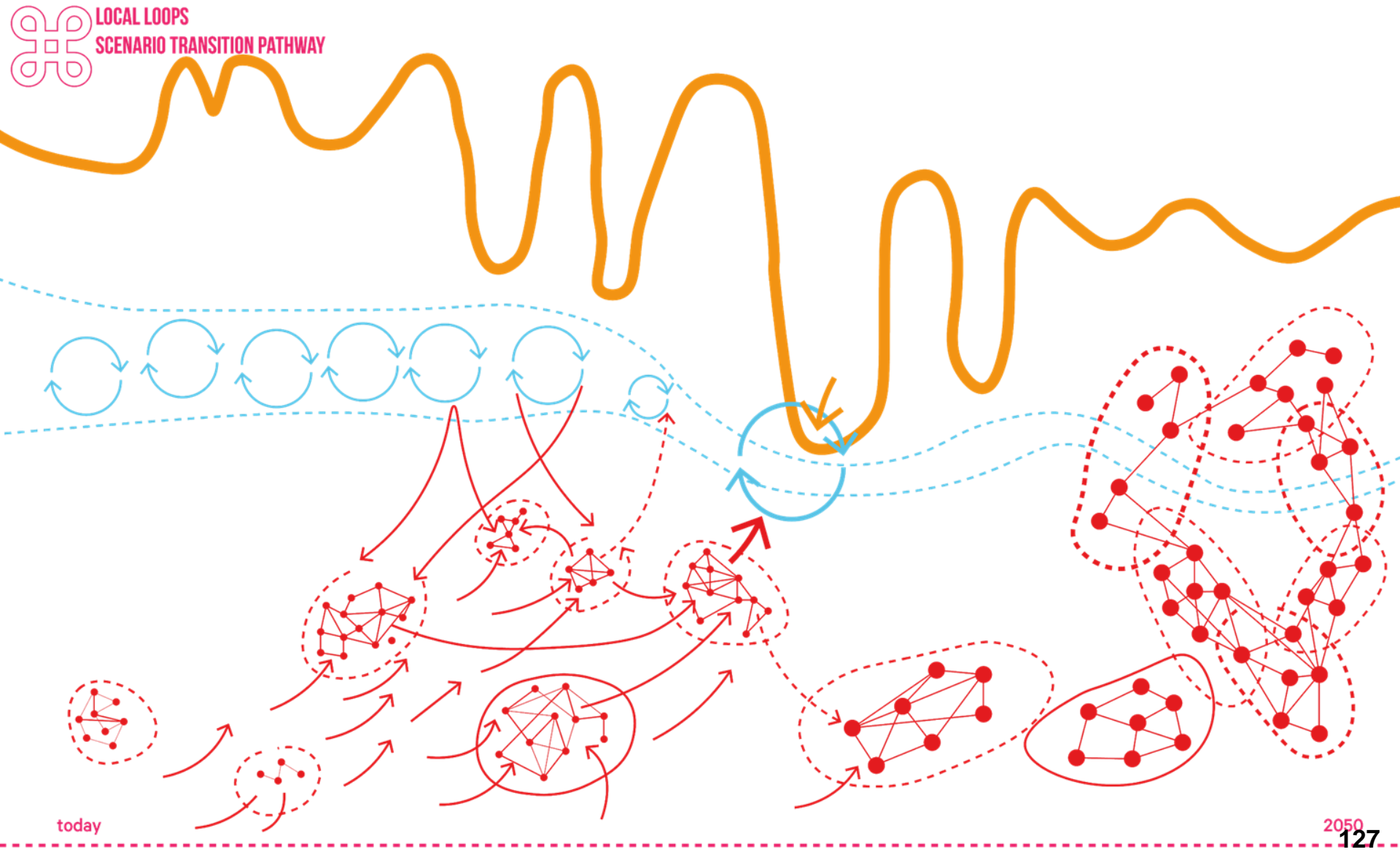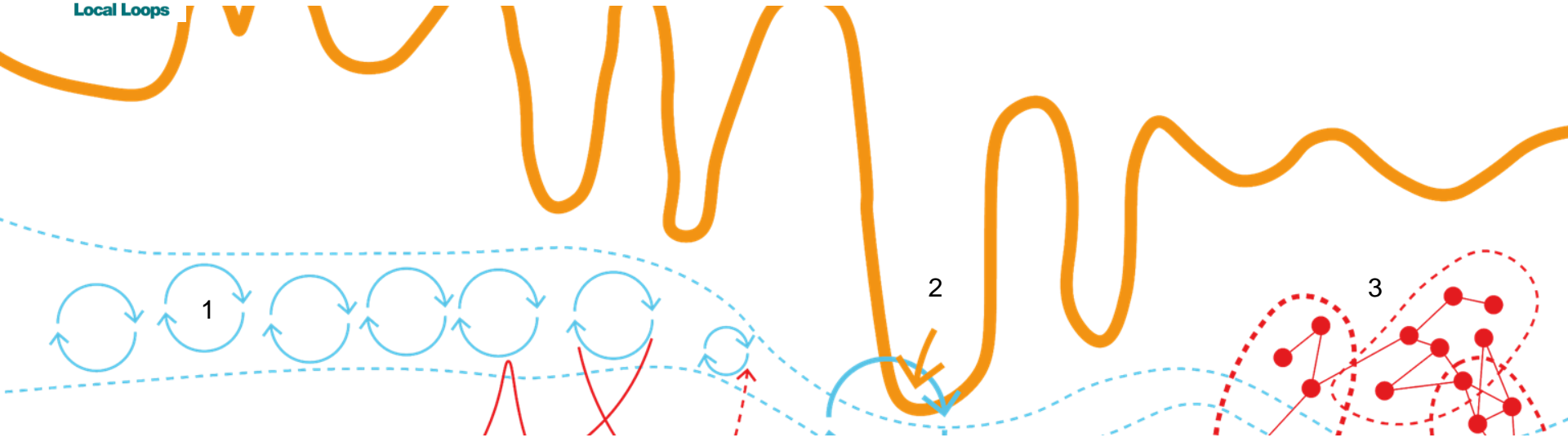
(1) The expectations and onus of responsibility is what shifts at the landscape level. There is a rise of the story of localised efficiency, security, identity and resilience. Supported by a number of high profile examples of where this has improved an area and the strong sense of meaning if you have a sense of togetherness and community this has prompted. This enables flourishing and sufficiency of these areas.

(2) This coalesces with a breaking of the story of the EU and the nation state providing all for you. There other key shift to a narrative is that of acceptance/beauty in diversity and between different areas. A mainstream understanding that is this diversity that makes Europe great.

(3) This all contributes to the shifting expectation (and agency) to a sense you have to provide and play a part in enabling a sustainable future.

Regime level transition
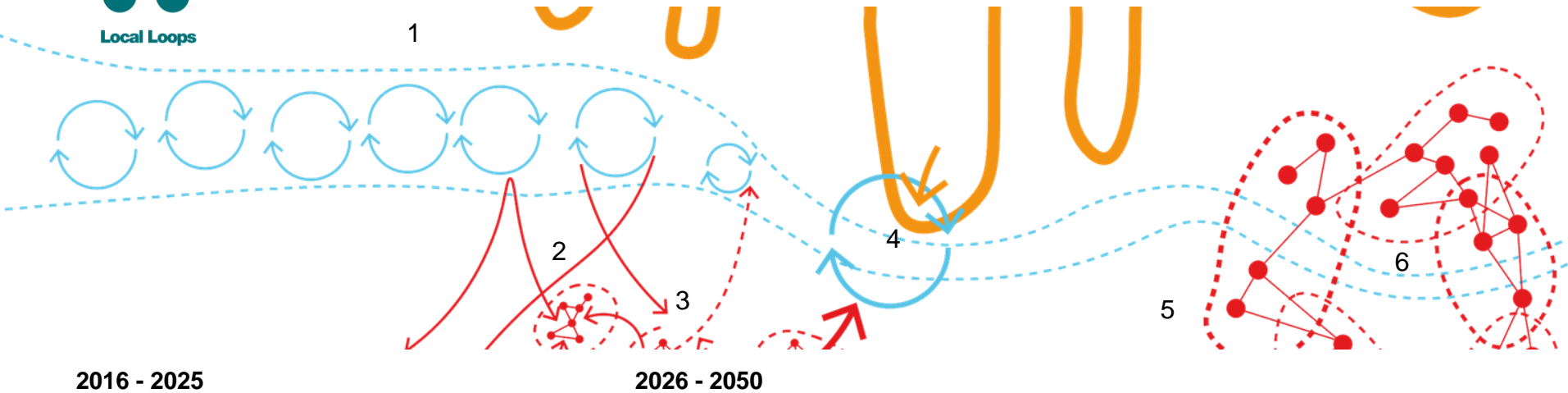
2016 - 2025

(1) There is little significant change for a few years. The increasing failure of governance to respond to key challenges over time and as interventions fail to resonate at the level, people are feeling the impacts and recognise the mainstream simply can't respond.

(2) There is individuals who are part of mainstream politics and business who start playing a role in the organising of the niche and citizens. They do this as they are discouraged by lack of impact they're having in the regime and are looking to grass level to have an impact.

2026 - 2050

(3) It is recognised that there is a need to learn from successful regional and city pilots - after it was recognised there needed to be a different way of organising resources and the possibility for more power devolved to regions.. A network of key leaders of these successful regions are convened. They support the design and creation of an alternative European 'local loops' framework is developed in collaboration with the mainstream actors. This represents a fundamentally different way of organising key resources across Europe and devolving responsibility for the things that matter to different regions.

(4) A strong skeleton / frame / core at the EU level is provided for all E.g. basic services - utilities, energy, logistics etc. his is the connective tissue of the continent as local loops feed off this core. The role of national infrastructure conflates up to this level and so starts to question the role of the nation state, which appears to become less relevant and national governments shrink.

(5) Budgets are devolved locally - and decided on collectively how to be spent. Each region has primary set of products they produce with quality and are highly celebrated. Business have a role to play in investing in the core infrastructure needed to share across regions and is a core vehicle for them.

(6) The traditional lines between niche and regime at this stage become very blurred

Niche level transition

today

2050

1 2 3 4 5 6
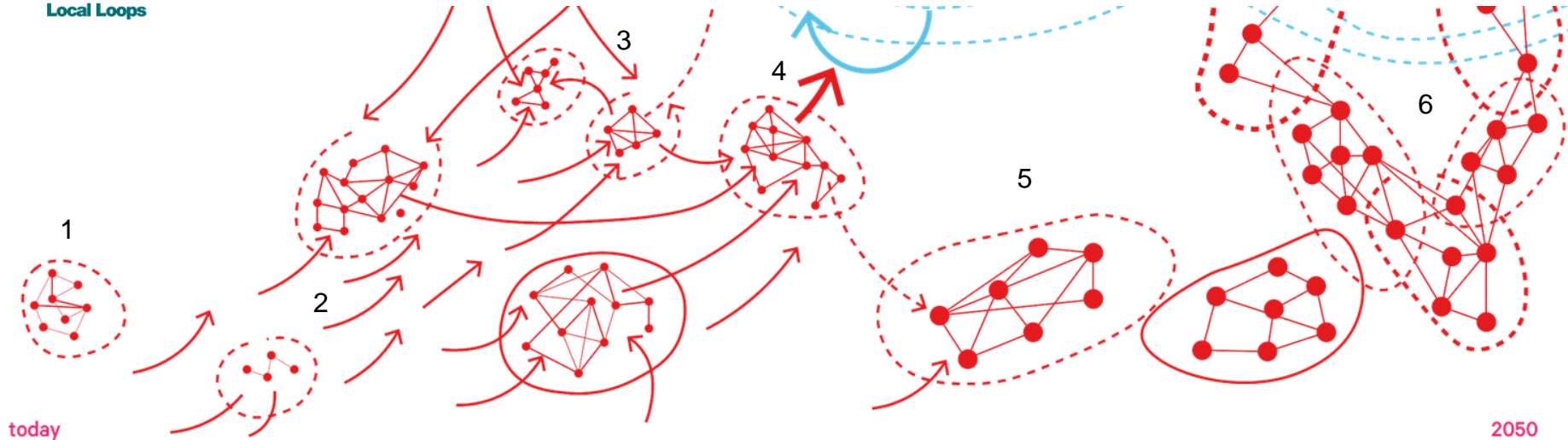
2016-2026

(1) A disillusionment of the pace of change and the time it takes to do things within the regime means people take matters into their own hands, acting on a new set of values and applying their professional skills at a local level. A number of cities (enabled by previous investment in 'smart cities') start experimenting with distributing their resources differently. There is a recognition that long term security is your local area which drives inc localised investment into things.

(2) There is a boom in localised crowdfunding & energy investments enabled by community groups, community organising approaches and coops that thrive in this world. A strong rise of city states/ regions over time see that strong local value networks emerge, enabling growth and resilience of a region in tandem. This starts to get the regime interested in how resources could be managed differently at a larger scale.

(3) Most successful pilot regions work with strategic thinking influential leaders - who understand community and network dynamics as well as the political agenda. They have a key part to play in providing strong local leadership and really successful ones demonstrate a new form of collective leadership - shared by many - so stronger in their influence and reach. Regional resilience is strengthened through new rituals, annual events and festivals - that help shape local identities

2026 - 2050

(4) Localised value networks become more dominant - but the influence of those working in isolation is recognised to be limited. Informal sharing starts to emerge, but support is needed to really glean the lessons. An alliance of influential leaders (from different backgrounds and countries) from different successful regions come together (consolidating what has been emergent for the previous 10 years). The share their learnings and also suggest an alt to mainstream governance & support the development of the EU level 'local loops'. This turbo charges and influences the bigger regime shift - one where the niche approaches and regime start to work together.

(5) Guilds seek to provide security and sense of freedom - but it can a fine line for people.It can be claustrophobic for some - you have 'drop out's and nomads who choose not to be part of 'regional' herds to move around - but have capacity to share knowledge and info at the same time - they can be well informed.. The shadow side becomes extreme of far right - those not tolerant to others. Unaccepting and unempathetic - dangerous at times.

(6) There is a need to be a learning & scaling across Europe to share the things that work and lessons (what doesn't work). Informal city and peer networks start to form to share insights on a more ongoing basis. Creation of an Open Source European Commons starts to emerge. There is a focus on the social innovations needed as these are less acknowledged by the formal EU framework.

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Innovation

What is being innovated to enable sustainable lifestyles in on the pathway to this scenario

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2014-20	**1. Community energy generation and appropriate organising forms**	• Availability of small scale tech. • Community financing. • Government encouraging the uptake of community energy. National CE policies • New forms of organisation recognised so others can access resources like funding	• Centralised big energy players • Political landscape • Political volatility
2020's	**2. Reinvention of guilds -** as an organising principle	• Future of work trends and the demise of acceptance of the 9-5 working week • Need for greater connections at a local level • Effective way of realising European policy framework	• Centralised corporations with globalised products and services. They have money to lobby against this • National governments (against devolution of regional bounds) = enforced devolution
2020's-30's	**3. New value networks** – that enable efficient flows resources, information. These could exist in all domains	• New forms of financing for value networks/ecosystem • Willingness and the right models for collaboration between different players • Strong and effective local networks that can match people/needs • Uptake of social enterprise models	• Existing centralised power structures that have oversight/control of key resources. • Corporations whose culture is to dominate markets (not allow for distributed value) • Waste management firms nervous about loosing value/resources to others
2025-30	**4. Local Loops Framework**	• EU policy enabling local loops to flourish • Appropriate funding and information flows • Pioneering cities and local authorities willing to experiment and set the precedent	• The political landscape • Corporations not able to adapt to local needs in the short term • Rural areas fearful it will lead to fewer resources for them

Domain insights

Domain	Key insights	Key citizen innovators in 2050
Food	• We choose **locally grown and produced** food and products because we value and nurture local cultures and the resources in our 'loop'; food transportation is efficient, low. • Food production is 'bio-regionalistic'; very mixed, using integrated agriculture. Immigration into Europe has brought new food-growing know how into localities. • We **eat out** more, which helps to eliminate food waste; there is no such thing as waste. • Local ingredients are used to re-create global flavours and cuisine; new 'fusion' cooking blends local and global together in adventurous ways. Expectations have changed.	Regional integrated Resource Architects – allowing for a systemic approach to regional planning, governance and flow of resources
Energy	• The energy mix is likely to be varied – it will depend on the conditions in the different local loops and will optimise those circumstances; energy trading between communities. • Likely to be lots of solar and lots of local distributed heat networks • In a top down world – energy is likely to be a security issue, some finance may be provided by the state to enable resilience of supply • Development of local grids and some strategic interconnectors between regions. Energy rich areas will trade energy for another region rich in food for example. • You may see clustering of complementary businesses who locate in order to optimise resources/trades • Some efficiency gains as less transmission required. Efficiency is important in this world.	Guilds are hotbeds for innovation, driven to grow local city economies within the environmental limits imposed by their 'Local Loops'. Entrepreneurs and communities work together in a networked way to create maximum value from space, and natural and human resources.
Mobility	• We **travel** less than today; Local Loops policies force emphasis on resource-efficient and low investment travel (i.e. walkability and active travel) • Smart and flexible public transport proliferates in dense cities. • The infrastructure of the 2010's remains. • Sophisticated battery technology allows for more transport that is electric	Regional cargo bike networks as an alternative to big logistics corporations
Living	• People own a small amount of tailored personal goods , preferring to share and buy services. Tight workplace and neighbourhood-based communities encourage people to share spaces too. Modular housing allows people to extend and retract their homes according to their needs and stage in life. • Virtual consumption, services and entertainment reduce the need for space at home. ICT appliances are modular and have long lives. • People given guide rails to innovate within – through a devolved 'licence to innovate' at a local/regional level – but this is controlled and mandated by national/ EU government. • Systemic approach to how goods and resources flow and exchanged.	Mutual, problem-based learning and teaching centred on Professional Guilds means citizens and consumers innovate in professional rather than a personal capacity. Households coordinate their efforts, calling upon new professions to help solve household issues. Participation in guild-based politics also centres on solution-finding

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Local Loops

Citizen Innovators

Those creating and obstructing sustainable change in on the pathway to this scenario

Where do people get their agency to act towards sustainable lifestyles?

Local loops is a society where everyone is a European citizen first, and a member of their guild/community and city/region second.

As it's a communal, collective world – where people relate to each other via close personal/physical ties and are spurred to act through a shared identity in their guilds/communities. This belonging provides a sense of agency to do things often achieved in practice through shared tasks/work plus shared learning & development experiences. Feedback loops are small and embraced by all.

There is an expectation of participation by all at a local level.

Local Loops

What's the role of user innovators in this scenarios?

- Community innovation based on current needs and in response to global/nationwide competitions
- Small scale entrepreneurship & coops encouraged, supported and valued
- Adapting solutions to the local context that were developed elsewhere initially
- Innovation around time & means of exchange
- Creating new value networks

What's the role of government/policy?

- Creates the context for a new local loops framework to flourish
- Dominates and reinforces local loops
- Provides appropriate support to different regions/loops
- Need for integrated plans – less scatter gun approaches, willingness to run learn and convene those pioneering experiments
- Stimulate new ideas in communities by running challenges & competitions
- Helps knowledge and ideas to scale and be transferred
- Forming innovation clusters/loops around topics - curating and facilitating this - not doing it
- Willing to share control and power

What's the role of business?

- Support, facilitate & enable communities to do more
- Share & scale the best solutions between different communities
- New community ownership models for organisations
- Organisations negotiate regional contracts
- Fair and equitable stakeholder management is essential to the survival of businesses
- Collaborating with community groups in a non hierarchical way
- Helping to scale and share successful solutions - ability to manufacture at a scale that makes a difference

How and why do people innovate?

Overview of the types of user or 'citizen' innovator are **most prominent** in creating change?

- **Community leaders/ organisers -** those who collectively lead successful regional pilots and who influenced the shape of the EU adopted policy
- **Trust architects** that forged the networks and networks at the heart of the 'modern guilds' around which daily life revolves
- **National policy mobilisers** who used their networks, communications skills and zeal to call for radical, positive change in the EU New Green Deal
- **Local entrepreneurs** who moved quickly to find business opportunity in the Local Loops policy.

What type of skills are needed in this world?
- Collaboration and negotiation
- Compromise & understanding of what it takes to work with others
- Communication & storytelling
- Community leadership & mobilisation
- Local customisation & relevance

Brief description of them

CEO of a large energy provider. He's looking to maintain the existence of his large centralised organisation. He is resistance to change, pro-non renewables. Has close links into influential government officials

On which scenario pathway do they live?

Local Loops

And what year is it? 2018

From who and/or what do they draw support?

What is your character innovating? Why?

Resisting the uptake of community energy

What obstacles do they face?
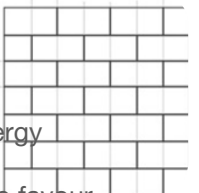
• Wealth of grass roots community energy projects
• Political atmosphere that is starting to favour local energy generation
• Instability of energy supply, price volatility and an economic landscape in flux

• Historical ways of doing things

• Friends in influential places – politics etc
• His marketing department
• Media hype

• Short-term view
• Money
• Strong, powerful arguments that translate to large scale communications campaigns

What's helping them achieve this?

• Making money
• Power
• Control

What skills do they need to enable them?

What's your characters passion?

A character who is resisting/destructing change..

| Character's name, age, and where they live:

Matthew Taylor, Slovenia | Brief description of them
Matthew has had a portfolio career – inside government looking at energy policy, with a successful comms and PR firm and a short spell in business. He is very charming but can be very stubborn too
Which domain do they link to? All (governance) – started with energy passion | On which scenario pathway do they live?

Local Loops

And what year is it? 2022 |

What is your character innovating? Why?

The political system (early days of local loop framework). Born from concerns around the cost of energy and the security of supply and seeing that no ne party or department was willing to tackle it in a systemic way. His local community is very active too so he saw first-hand that change can happen – but got frustrated it wasn't happening fast enough at scale to make a difference.
He sees this as part of his legacy to create an impact and make waves in the political system

From who and/or what do they draw support?

Those making change on the ground
But in politics he's a lone ranger at least to start with

What obstacles do they face?
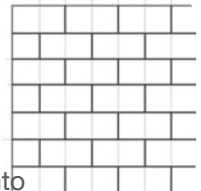
- Appetite for governmental structural change is low. Time for his peers to listen and internalise what he is suggesting. Makes sure he gets to know people well & they're bought into new ideas
- EU Commission

How are they overcoming them?

What's helping them achieve this?

- Mobilise influential business leaders. We can't compete globally without a more local based resource usage/framework. If legislated then this presents a new business opportunity
- Business experimenting with creating new value networks, with links to local guilds are proved to be more successful and resilient than those that aren't.
- Community mobilisers/guild leaders hungry for new solutions and approaches

What skills do they need to enable them?

- Good comms & PR
- Connections and strong networks
- Translator – ability to speak different languages to different people
- A strong team behind him

What are their questions?

Why aren't people seeing (r acting) on our need to secure our energy supply when we're in turmoil
Why can't we scale solutions at a national or international level?
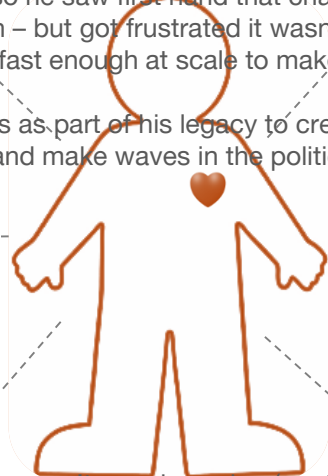
Brief description of them
She runs a small/lean sustainable clothes company. But she also has strong networks and is often using her connections to innovate new value networks in her community. She's a trust architect if you like
Which domain do they link to? Living

On which scenario pathway do they live?

And what year is it? 2025

Local Loops

What is your character innovating? Why?

Her own fashion brand, she's passionate about we're good quality, sustainable clothes. Slightly by accident she found herself brokering new relationships and businesses within her own community – by the fact she knows lot of people. There's a strong desire to be self sufficient

From who and/or what do they draw support?

Her friends and local community
Her mother who also set up her own business in her 30's

What obstacles do they face?

Pre-established organisations and networks that can obstruct and prevent new ideas from flourishing
- Not knowing 100% of the people needed to get an idea off the ground
- Prioritising which network to catalyse first
- Balancing the fashion brand with the network catalysing
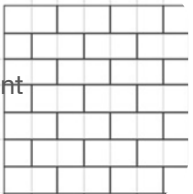
How are they overcoming them?

- Personal/face to face communication
- Visioning
- Lean start-up network skills

What's helping them achieve this?

- Social media to keep in touch with people easily
- Network grants to establish new value networks
- Good relationships with the local fashion industry
- Young leaders mentoring network

What are their questions?

- How can I learn from others in different communities? I want new ideas to feed into my local community
- How can I help those around me do more?
- How can I be even more efficient and self sustainable?

What skills do they need to enable them?

Brief description of them
Stable upbringing – but he's tired of seeing his parents unenthused and worn down by the politics of their local guild & community politics.

Which domain do they link to? Food

On which scenario pathway do they live?

Local Loops

And what year is it? 2050

What is your character innovating? Why?

Guerrilla guild – hyper local synthetic food guild
Suffocated by the dominance of the current guild structure
Seeing enough people aspiring for a new way
Young & optomisticic, energised to pioneer new way
Saw no-one was making the most of the obscure Finnish habitats (perfect ingredients for local synthetic food)

From who and/or what do they draw support?

Virtual guerrilla guild members

What obstacles do they face?

- The current/old school guilds
- Expectation he will partake in person in the community often

How are they overcoming them?

- Access to global knowledge/science
- Mesh networks – setting up an untraceable Guerrilla guild network
- Fellowship/exchange trip he went to visit bio-hacking labs around Europe when he was 14

- Science knowledge
- Practical cooking skills
- Self belief he can develop new ideas – and not just be complicit

- Why aren't people seeing (r acting) on our need to secure our energy supply when we're in turmoil
- Why can't we scale solutions at a national or international level?

What's helping them achieve this?

What skills do they need to enable them?

What are their questions?

Questions this scenario raises

- The Local Loops policy could have been implemented via existing institutions and via government-commissioned service and infrastructure contracts. Instead, business and networks mushroomed and helped to bring about a cultural shift towards valuing 'local', sharing more and consuming less.
- How can the conditions for circular economies be fostered so that policy 'scales' rather than 'imposes' them?
- What would i take to accept and embrace devolution to regions?
- What would it take for national governments to become less relevant? How could that happen without conflict and extreme right wing resistance?
- How could you help people embrace and celebrate diversity and not be threatened or fearful of it?

Empathetic Communities Overview

Of the pathway, key innovations and innovators, summary of the domains and characteristics of the world in 2050

Empathetic Communities| Headlines

2050

Bottom-up governance

Myth: we are earth, ever growing and evolving

Goal: healthy and flourishing continuum and evolution of living things

Identity: we identify with other living things/beings

Mindset: caring, empathetic

Approach: Caring & empathetic collective action creates unstoppable forces

Systemic approach: living systems co-evolvement

Empathetic Communities

Locally oriented

Empathetic Communities| Headlines

2050

→ **Bottom-up governance**

↓ **Locally oriented**

Lifestyle: people helping one another becomes a guiding principle for everyday life; technology enables people to use empathy; political decision-making reformed

Economy: Local economies; break-down in global economy; absence of global financial and political systems; new forms of exchange

How society operates: Cities formed into self-sufficient neighbourhoods; new municipal partnerships and cooperatives; new models of work and welfare; 'Public Private People'

How society operates: High unemployment (in 2014 terms); work takes place collaboratively in hubs

Governance: Local governance dominates; national and European government replaced

How society operates: Scarcity of energy, food and commodities; spurs local innovation; DIY attitude

Economy: Hands-on work that contributes to the community is highly valued; consumption is geared towards meeting basic needs; communal living

Emphasis and importance placed on public health and health prevention; quality of a person's lifespan is more important than its length

Identity & status: Status relates to local social hierarchies; those with collaborative leadership qualities have a high status and respect

Where change comes from: individuals and communities relating with one and other differently, finding a shared purpose and ways of being that start to show society operating from a different state of consciousness.

Empathetic Communities

2050 Scenario summary

Mutually supportive relationships provide the primary social foundations for Europe. There is strong empathy for others and people find fulfilment by contributing to the collective good. Life is made meaningful by relationships with family, friends and the community. People value: connectedness to nature, others, self, spiritual foundations.

After a protracted period of economic upheaval and social unrest, the EU and other national governments and institutions have been replaced by neighbourhood cooperatives and a patchwork of small municipalities that are bartering, gifting and innovating their way to self-sufficiency. People rely on their community for security.

Food growing and energy production are a vital part of the local social fabric; like all aspects of life they are delivered in ways that mix the very traditional (lo-tech and 'backward') with the high tech and modern.

Public space has gained great significance, with urban infrastructures turned over to urban farming and for communal living. People value food and other scarce resources and treat them respectfully. Within community life there is enough to go around though this isn't taken for granted.

Leisure time is public, social and is geared towards servicing the needs of cooperatives. Holidays are used for personal reflection; virtual travel is a much-savoured luxury.

Education is based on finding one's gift and meeting others' needs. Education systems develop social as well as practical and work-related skills to develop people who are able to be productive and socially skilled members of the community..

The shadow side of this scenario?

•Potential limits to individual freedom if you feel you don't 'belong to the place you find yourself

•Divergence: what happens when a member does not agree with the group? How do they handle crime and punishment? Risk of intolerance and exclusion of divergent individuals.

•Potential for isolation and mistrust of other communities, different values and ways of living. Danger of retreat to feudal structures and resulting lack of knowledge and innovation sharing.

•Food demand pressures and historically low investment in energy could mean synthetic engineering is a necessity; how would this be tested and regulated?

•Potential for reverse colonialism from richer parts of the world as Europe's political influence on the global stage wanes and as weakened governments struggle to pay their historical debts; possible inward investment and sales of water and productive land.

•The pursuit of spirituality can foster selfish and empathetic traits. At the worst this become manipulative and exploitative of vulnerable groups and individuals

•This isn't an efficient world, there is more of a patchwork approach to sustainability.

Landscape factors

Wealth	Health	Economy	Environment
To be full of love and compassion for others; spiritually fulfilled and contented; to feel like you are contributing to the personal development and evolution of yourself and others.	To be flourishing – to be spiritually fulfilled while meeting your basic needs; enabled by the energy and humanity of those you share your experiences with. Receiving help from others to unlock your potential.	Modern subsistence based on a belief in the abundance of human potential; beyond capitalism and material consumption. Exchange is based on a barter system of time, skills, energy, resources within and between hyper-local neighborhoods.	There is an increased understanding of the inherent connections of people to the natural world. This breeds more responsible behaviours and valuing of the natural world. Attitudes are vastly different across different regions, so there is inconsistency in the response to how environmental challenges are responded to in this scenario. Social sustainability takes priority

Governance and power

Governance	Identity & power
Empathy is the central organizing principle for society. Society is made up of many different self- organizing communities – each with their own approaches, habits and rules. The role of the state, the EU or regional bodies is very unclear in this world. Modes of organizing evolve through social and cultural entrepreneurialism, driven by shifting values and philosophies. Leadership tends to take the form of collaborative leadership; enabling others to make decisions. Those with confidence, charisma and who have reached a stage of personal enlightenment tend to be those who take leadership positions.	People identify with a social revolution and a strong belief in humanity. Changeable power dynamics that pivot around neighborhood cooperatives. Collaborative community leaders are rebuilding society around new philosophies. They have subtle and often invisible power People identify and empathy with other living things and recognise humans are just one part of the planet.

Assumptions behind the mindset

Social capital (relationships) highly valued; key social characteristics are connectedness to earth, self, one another. Careful use of resources. Status in the community is achieved through contribution to society, and measured by how highly you are valued by society. Conscious cultivation of empathy

"Touch others not with your
hands but with your heart"

Artefact from the future

THE TEMPLE OF SILENCE

LEAVE YOUR COMMUNITY BEHIND YOU

admits one

Living in such close proximity and relating in a very true and honest way takes it toll. People seek solace in silence and in places where they don't have to interact with others at such a deep level, there are many temple of silence's that have popped up to respond to that need.

The transition
What is journey to 2050?

Empathetic Communities

Pathway to 2050

Unemployment in many European countries and in the USA remains high due to austerity measures on public budgets. The business world remains cautious.

High price of energy and other natural resources affects household budgets with prices of food, mobility and electricity soaring.

Financial markets face **crisis**. Several big banks collapse. Governments fail to anticipate the situation. They cannot afford to bail the banks out. Citizens' lives are thrown into **turmoil.**

2023 || Moment of Change

Spending on R&D and innovation radically slows down with the exception of the promotion of empathy' which is growing as a concept and approach.

The absence of dynamic global markets results in extreme energy and food scarcity. People rely on their immediate circle to guarantee access to food and other basic commodities.

Prevailing high unemployment and rising prices see people starting to experiment with local production of food and energy.

Towns and regional councils in different countries resize their power to compensate for the dysfunctionality of national governments and global markets

First of many **governments resigns.** A Europe-wide 'Villages in Towns Network' of neighbourhood **farming cooperatives** establishes. Members convert under-used land for farming purposes.

2028 || Moment of Change

Neighbourhood co-operatives start pooling resources from communities, governments and businesses in order to create shared spaces like plazas, assembly halls and meeting spaces. Reorganising space helps reduce the need for individual space.

TV show "The Alturist" is a global success. The show celebrates empathy and capacity for collaboration - for many it symbolises a turning point in prevailing thinking about human nature.

United Nations is transformed into United Cities, Towns and Regions.
Most Micro-Nations have appointed **Sharing Architects** to develop buildings and spaces to serve the needs of the new era.

2041 || Moment of Change

The generation of people who have grown up within the empathy paradigm gain permanent positions in politics, companies and communities.

The notion of leisure time changes. People seek reflection time where they are free of information flows and social roles. This requires special social services and comes as many people live in such close neighbourhoods.

Transition overview

Landscape
Regime
Niche

EMPATHETIC COMMUNITIES
SCENARIO TRANSITION PATHWAY

regime dies

shadow of its former self - still traces of it as people want to hold on to

fallow period

innovate ways of relating

co-evolving: individuals, communities, societies

today

2050

154

Landscape level transition

1 regime dies

2 shadow of its former self - still traces of it as people want to hold on to

3
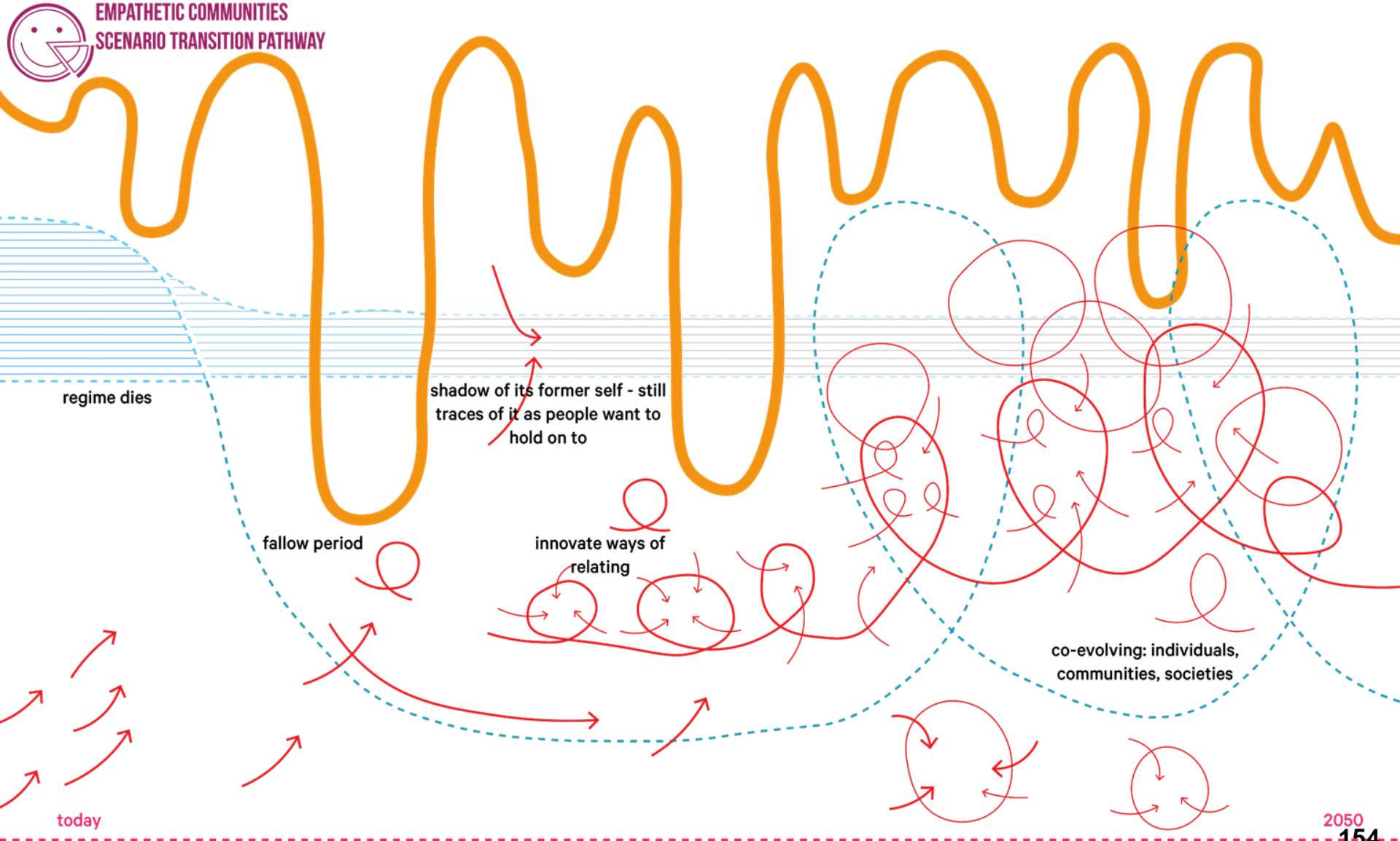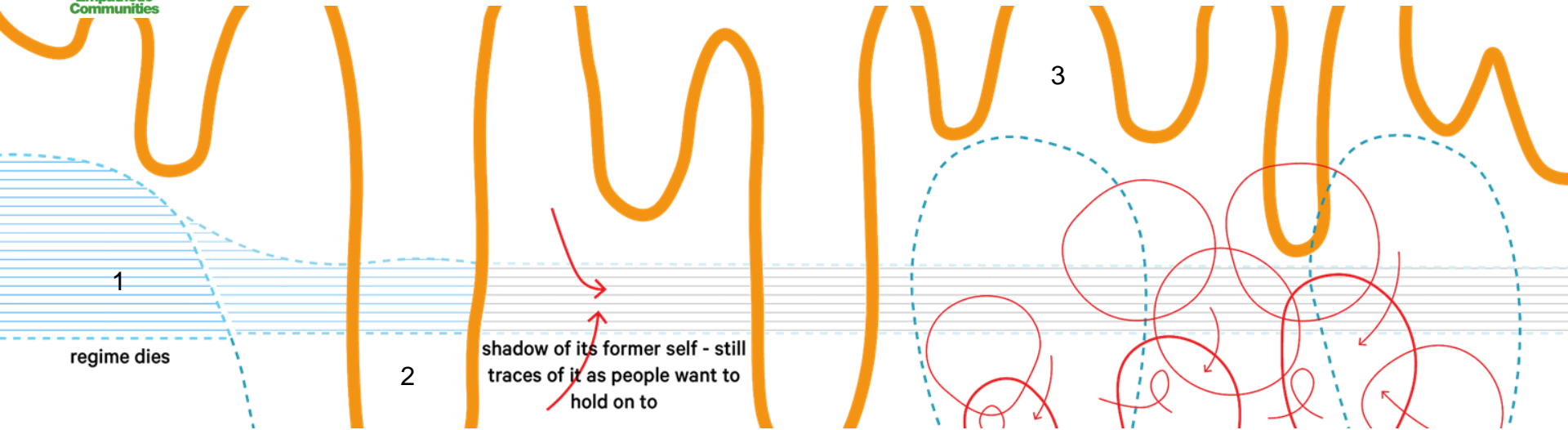
(1) There is a **mass societal collapse** early on - this shifts absolutely everything. All the assumptions about how the world works flip.

(2) The story of economic growth just doesn't cut it anymore in this world as there is a failure to deal with any of the large scale systemic challenges.

(3) This forces society to understand the world and start to organise and operate in a different way - this prompts a **whole scale paradigm shift**. At all levels, those who manipulate power manipulate the story.

Regime level transition

1 — regime dies

2 — fallow period

shadow of its former self - still traces of it as people want to hold on to

innovate ways of relating

3

4
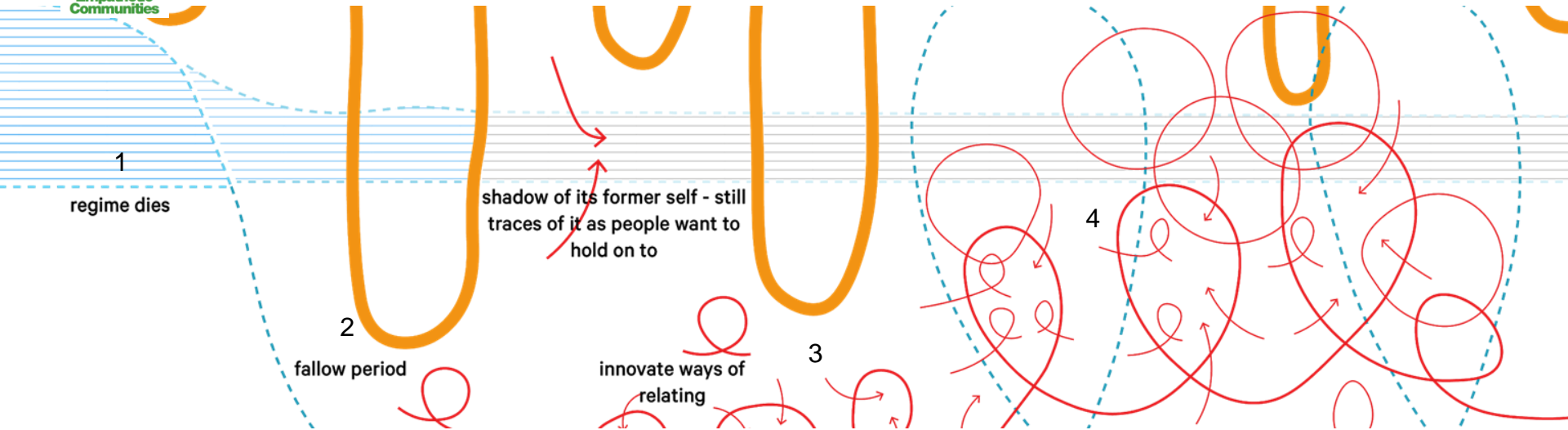
2016-2026

(1) **Business as usual collapses** as it fails to respond to natural disasters, resource scarcity, economic meltdown and rising inequalities.

(2) There is a **lack of investment** in anything for fear of using resources for the 'wrong' thing. Fear and paralysis takes hold. There is a fallow period, individuals formerly part of businesses and government retreat into themselves and start to fundamentally question who and what can facilitate a new society not based on trade of money in markets and the wholescale pursuit of economic growth.

2026 - 2050

(3) Emerging from pioneering niches - **new relationships start to emerge** that show a model for human flourishing. The adoption of this would take a whole society to operate at a new level of consciousness and there are questions about if that is possible or not. It sees an iterative and evolving way of living and being - one where questioning, acting and learning from the core structure of people's every actions. We learn at an individual level, at a community, societal and planetary level - all part of a nested living system.

(4) There is acknowledgement that this leap of consciousness won't be possible for everyone. Some will crave and pine for the old ways of operating There are legitimised 'escape places' where people can go and exist as you did before. There is legalised prostitution, legalise hedonistic drug taking and gambling there. It's like a continuous festival of consumerism. Others use virtual reality to escape the new more aware and conscious reality. The aim of these things to **not repress but empathise** with how people feel.

Niche level transition

fallow period

innovate ways of relating

3

co-evolving: individuals, communities, societies

4

1

2

today

2050
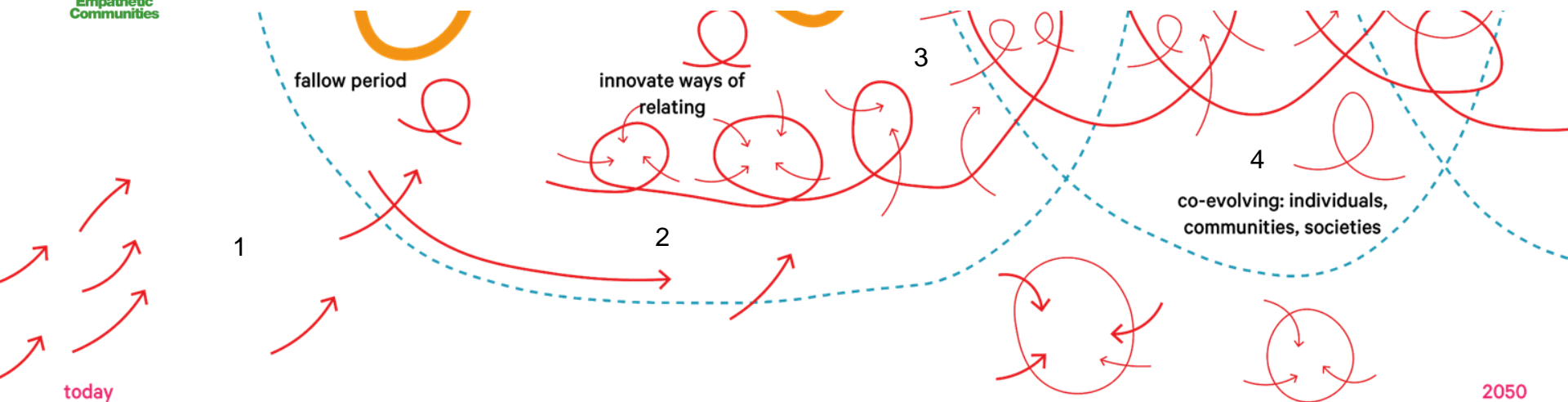
2016 -2026

(1) As in the regime, fear and paralysis takes hold and there is an extended **fallow period**. In such a period of uncertainty - people only have their personal relationships to fall back on. There are lots of people questioning the fundamentals about who you are, why you exist, what the purpose of life is. Empathy with others is the only thing that can make you feel better and provides a different sense of meaning - only with this can new things start to emerge out of the 'rubble'.

(2) People all of start to **innovate relationship dynamics** to deal the pain and new reality they're facing. There is an explosion of co-living and new ways of sharing resources. Groups start to emerge for people to learn and grow together - providing physical and mental support for people in this sharp transition. These new relationships spurs and drives innovation of all other kinds - it starts as very localised, tacit production and is quite hand to mouth.

2026 - 2050

(3) There is an acceptance over time that - what you give to others and how you spend you time is what is important (not the job you have). This frees people at scale to **self organise** around where you live around needs there are and things that matter to people.

(4) **Meaning and spirituality play a big part in people's lives**, there's lots of innovation in this space too - it is an antidote to the pain people have experienced. Some open up so much they can't go back - that they just have to learn how to be. But this form of mental healing requires lots of self awareness and some people can't handle this level of consciousness - people crave hedonism, child like state, simplicity - so they start to set up 'escape' places & spaces. There is an acceptance and 'caring' for those who can't let go of the past (capitalism) and for those who use it in a negative way, radical innovations emerge in response to this.

Innovation

What is being innovated to enable sustainable lifestyles in on the pathway to this scenario

Empathetic Communities

What is being innovated on the Pathway to 2050

Time period	Key innovations	Enablers	Where resistance could emerge from
2023	1. Community co-operatives, help groups, re-skilling trainings, new approaches to education	Networks, multipliers (transferring successful ideas to other communities)	Lack of money, scarcity, and resulting conflict over resources
2025	2. Media and advertising programmes promoting empathy and sharing as an individual and collective capacity. Education that develops empathy and relationship skills as a foundation for life.	Advertising and comms shifts from promotion of consumerism to empathy with community support	Big business serving wealthy, dependent on old style consumerism. Individual resistance to giving up "me" focused lifestyles. Media giants
2025-30	3. Social processes for community building, governance, conflict resolution, decision making.	Platforms for communal dialogue, and for individuals to have a voice. Public understanding of the larger picture. The arts.	Turmoil and fear;scarcity and lack of communication between communities; competitive mindsets..
2030 +	4. Open source spirituality. Long held secrets are open sources and shared to allow others to reach new levels of consciousness to cope with their new reality	Digital technology UX designers Those able to translate historic practises into useful processes and experiences	Lack of collaboration between communities Resitience from the traditional spiritual leaders/gurus

Domain insights

Domain	Key insights	Key citizen innovators in 2050
1. Food	• Nutrition is a key driver; people eat seasonal and locally grown food; all aspects of food system are social and this bond neighbourhoods to each other and their locality; communal cooking and dining in co-housing communities • Urban farming is the norm; all available space is dedicated to food production and energy generation with a deliberate synergy between the two (e.g. biofuels). • New forms of exchange have emerged that enable neighbourhoods to compensate and benefit from varied climates and circumstances • Food production is 'bio-regionalistic'; very mixed, using integrated agriculture to optimise the use of space.	1. Farmers and growers; organic agricultural action research; social processes for sharing out labour and responsibility for food production 1. Opportunities for innovation are particularly fertile around food production & distribution. Researchers conduct deliberate experiments in cooperation with other neighbourhoods, to run trials.
2. Energy	• Is traded locally; energy efficiency is a way of life. • Communities are powered by local renewables (solar, wind and other energy harvesting technologies). • In times of energy scarcity, supplies are shared via equitable measures; favouring those with health risks. • Resource-saving housing design; diverse retrofitting using locally-specific materials and knowledge.	1. There's been a lack of investment in infrastructure; cooperatives have had to forge innovative finance schemes to raise the capital.

Domain insights

Domain	Key insights	Key citizen innovators in 2050
3. Mobility	1. Bicycles (2 and 4 wheels) are key means of transport. People use modest, energy-harvesting electric vehicles also; efficient and non polluting. 2. Long distance, long haul travel is rare.	Those who travel between communities, promoting knowledge sharing and cross-community communication
4. Living	1. Everyone contributes time to cooperatives to receive neighbourhood and health services; sharing, swapping and renting succeed private ownership. 2. Infill of housing in 'city villages' has increased density; small homes; communal living in shared spaces. 3. Households negotiate with their cooperatives and work through their municipality to agree their resource allocation at different times of life. 4. With less money to spend, exchanges with citizens online and in virtual worlds is an important means for accessing physical and digital goods and services.	Some materials are scarce, like metals and other materials used or building; bio-technicians developing local, substitute materials. Architects designing efficient communal buildings for housing, meeting and work spaces. Creators of collaborative platforms that use non-financial (or part-financial) forms of exchange.

Citizen Innovators

Those creating and obstructing sustainable change in on the pathway to this scenario

Where do people get their agency to act towards sustainable lifestyles?

Empathetic communities is a society that has consciously cultivated empathy for others and in which people willingly invest their time and creativity for the good of the community, on a reciprocal basis. This emerges after a period of stress, pain and upheaval that has left people grateful for for live and their immediate relationships.

Journeys of self-discovery provide people with the inner, spiritual confidence and ability to act and innovate.

People are generous with their time (and love and emotion) if they believe you are helping others. They contribute time to their cooperative to ensure food and energy is available to those in close proximity. They tend not to move around often and you live in a more communal manner. People who do move between different communities and regions are exposed to new ideas.

People identify with their extended family and local community. Agency is achieved through continued personal development and strong personal networks. These provide physical and emotional support. Those who struggle to adapt are also supported in this way.

Empathetic Communities

How and why do people innovate?

Overview of the types of user or 'citizen' innovator are **most prominent** in creating change?

- **Homesteaders**: the first groups of families who took the risk of moving to 'cooperative neighbourhoods' within their cities; sinking their savings into making it work and scaling back their paid employment and pension contributions.

- **Founders of cooperatives**: who forged the first 'converted car park fields'; securing hard-won permissions and lease arrangements with councils and private owners; they established a blueprint for others to follow

- **Charismatic leaders** that foster belief and trust in 'better'; attract/ encourage others to join neighbourhood cooperative movement; drive through local governance changes to support the cooperatives

- **Open source spiritual gurus**: those able to forge traditional spirituality practises and convert them into mainstream tools and approaches for people to live and be in a new state of conciousness

- **Culture-makers:** professionals inside mainstream communications and entertainment that made programming and editorial choices to make the 'science' of empathy accessible to all.

Empathetic Communities

What type of skills are needed in this world?

- Farming and food production
- Technological skills, esp.. For food production and developing new materials (metals,,etc.)
- Communication and relationship skills are key to healthy social life; maintaining trust and respect of community.
- Facilitation, listening, convening
- Process and experience design

Empathetic Communities

What's the role of user innovators in this scenarios?

Innovation of social processes for personal or community enrichment, and for governance and justice: art, personal, social and spiritual development, and education.

Collaborative forms of non-financial/ financial exchange (e.g. 'next generation time-banking').

New technologies for food production, substitution of materials, waste and recycling.

What's the role of government/policy?

Communities are largely self-governing, overseen by city municipalities which maintain processes for regulation and handle rare occurrences of deviance.

Legal decisions are made by citizen juries and other forms of community justice.

Basic needs are provided or supplement by the state as required. Policies are agreements and mandates between people and groups. Municipalities prioritise healthcare and preventative health; there is less money available for acute health services.

What's the role of business?

- Meet basic needs, especially food production..
- Provide services to community; and for self-actualisation.
- Payment for services is based on needs rather than market price. (including gift / barter)
- Handle waste and recycling
- Unclear on the role of global businesses in this world, if they are still in existence
- Resurgence in family and community led businesses - alt franchise models emerge

Character's name, age, and where they live: Annette (37), living in the Netherlands

Brief description of them: Annette is a single mum with two kids aged 4 and 7 She cares about creating: a liveable planet for her kids and being able to provide for them. .

Which domain do they link to?

On which scenario pathway do they live? Citizens lives thrown into turmoil
What year is it? 2023

Empathetic Communities

From who and/or what do they draw support?

What is your character innovating? Why?

What obstacles do they face?

Ways to help communities to become self-sufficient quickly.
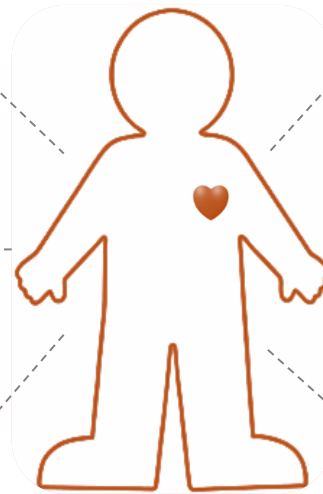
Lack of money in a system that has been based on monetary exchange. She overcomes this through: bartering, sharing craft skills, DIY, creativity, resourcefulness.

Self-help groups, family; collaboration with others; the media; friends and neighbours.

How are they overcoming them?

Social and negotiation skills; resourcefulness; collaboration skills. Practical skills for meeting basic needs (food growing, making clothes, building housing, etc.) Community building.
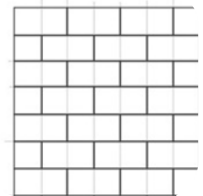
Finding ways to duplicate innovations, find multipliers for what's working; also networks of relationships (social and transition).

How can we organise ourselves, share resources and skills so we can sustain ourselves and lead meaningful lives? How can we create self sufficient and supportive communities when the old structure is breaking down?

What's helping them achieve this?

What skills do they need to enable them?

What are their questions?

Character's name, age, and where they live: Robert, 55, is business director living in the UK

Brief description of them Robert has built what was until the banks crashed a successful retail business. He is resisting the community based sharing economy and investing in gated communities for those who can afford them to insulate their wealth.

On which scenario pathway do they live?

And what year is it? 2025

Empathetic Communities

From who and/or what do they draw support?

Current law enforcement that protects private capital; the fearful wealthy

What is your character innovating?
Why? He is developing /promoting luxury enclaves for the wealthy to retreat to ("fortress" villa); and refusing to allow empty retail units to be used by the sharing economy for communal benefit. Amid social and economic turmoil he chooses personal gain over an empathetic response.

What obstacles do they face?
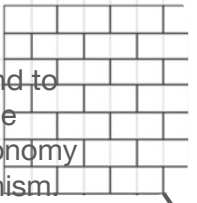
Increasing desperation for land to grow food, access to available housing, growing sharing economy and intolerance for protectionism.

Regulation that does not reflect current state of crisis, allows shelter to go empty while millions are homeless; armed guards. Rely on wealth and force.

Old school business drive , aggression investment know-how; ability to reach and sell to wealthy elite. Safe flow of assets in turbulent markets; use of military- style force.

Self protection in an increasingly turbulent world; financial gain; self interest for himself and immediate family.

What's helping them achieve this?

What's your characters passion?

What skills do they need to enable them?

a character who is resisting/destructing change..

Character's name, age, and where they live: Yanina, Tom, Rachel, Anna. They are all aged between 50 and 60.

Brief description of them: They care deeply about people and creating healthy communities in which everyone can thrive.. They are facilitators of group spaces; they focus on creating empathetic understanding through their qualities of calm, peacefulness, being musical as well as practical
Which domain do they link to? Living / all

On which scenario pathway do they live?

And what year is it?
2025-30

Empathetic Communities

From who and/or what do they draw support?

From other people in the community who share their ability to listen, observe, their sense of justice.

What is your character innovating? Why?

Creating stability within turmoil; community vision and structure. They help people to develop capacities for empathy that enable them to live well together..

Turmoil, fear, apathy. Competitive modes of thinking. They face the threat of /actual loss of individuality in society. They overcome this through giving people a voice, inclusivity, creating a platform for them to speak. They lobby people to promote understanding of the big picture and its importance.

What obstacles do they face?

How are they overcoming them?

Opportunities for being creative with others, practical support to meet their own needs, recognition / engagement with their values. Need charisma, social skills to succeed..
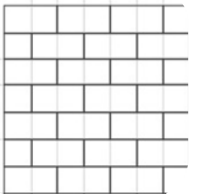
Being persuasive; lack of personal ego getting in the way of work with others.. They need to be good at listening, observing; have a sense of justice. They need an ability to think in systems, big picture view. Desire to do something to benefit others, not themselves. Music / the arts helps the engage, make meaning in chaos.

How can we help people develop empathy on which our future depends? How can we create a vision of what an enabling system would look like? How can we help people shift from competitive to collaborative behaviour?

What's helping them achieve this?

What are their questions?

What skills do they need to enable them?

Character's name, age, and where they live: Three women: Gill (47) Sabina (30), and Philippa (26) living in Greece.

Brief description of them: Gill, Sabina and Philippa have lived a lot in a short time and experienced many difficult changes. They have seen fragmentation and experienced breakdown. They want positivity and humanity. Their passions are people, living together harmoniously, mutual support, stories and change. Which domain do they link to? Living

On which scenario pathway: TV show about collaborative community living became a success. Year: 2030

Empathetic Communities

From who and/or what do they draw support?

Social networks, super-connectors; skilled people in the communities.

What is your character innovating? Why? Media programmes to strengthen community building, promote sharing of resources, build capacity for healthy relationships, as those are key to successful living.

What obstacles do they face?
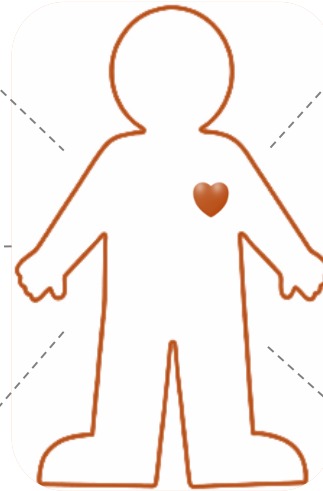
They face scarcity of resources; danger of and reality of breakdown and conflicts. Sharing is a necessity. They overcome obstacles through persisting with their media programmes: despite the fear and uncertainty they don't give up.
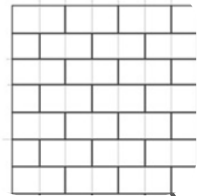
How are they overcoming them?

Support from the community - which means people in it buying into an idea. They get help from professional communicators to disseminate their message within the community.

Strong communication skills; media skills; perseverance; developed empathetic capabilities.

How do we use the media to help people understand and value empathy, and to practice it more in their lives? How do we produce our programmes with minimal resources?

What's helping them achieve this?

What skills do they need to enable them?

What are their questions?

Empathetic Communities

Questions this scenario poses:

Following years of protracted turmoil and unrest, significant investment in community renewables and a distributed energy system took place. From the unrest arose a new paradigm and strengthened community cohesion.

- How might we create the resilience to be able to bounce back quickly to make the most of a crisis?
- How can crisis best be managed and navigated? Is a crisis essential on the path towards sustainable lifestyles?
- Perceptions of risk are likely to have played a part in the shift to self-sufficient neighbourhoods; for the first movers, first followers and early adopters the risks of not changing how they would provide for themselves would have appeared to outweigh the risks of making the transition. How could some of the risks involved in big, family life-style changes be managed upfront, so as not to act as a deterrent?
- How can you cultivate spirituality and conscious practice at a societal level?
- If there is acceptance and empathy between living things and natural cycles of life. Does that mean there is complacency and that people are happy to die out as a spcies as part of that natural life cycle?

Concluding remarks

Conclusions

What the scenarios tell us

The scenarios in this report represent very different worlds & paradigms. The report uses qualitative descriptions and narratives to paint a picture of these worlds. The locus of interest is in the transition to sustainable lifestyles in Europe by 2050 and the role that users and entrepreneurs play in that transition.

The scenarios highlight a number of key future shifts, that when combined could fundamentally reconfigure the culture and dominant paradigm of Europe

1. Sustainability is a dynamic state of continual transition that's best described by the social conditions in society.
2. Sustainable lifestyles are interdependent, nested systems within a sustainable society - and are also dynamic by extension.
3. Achieving and sustaining dramatic resource efficiencies transforms capitalism.
4. Change takes place at an uneven pace of change along scenario pathways to 2050.

The scenarios also highlight that there is an increasingly important and role for users to influence the transition to sustainable lifestyles. Specifically this report has found that you can describe the role of future user-innovators in transition according to the following:

1. the significance of their contribution to sites for innovation for transition

2. their contribution to processes of innovation for social change:

3. whether they play an active, passive or resisting roles in innovation for transition and or are operating at an indiviual or

  collective level in relation to (1) and (2) above.

They are more likely to result in paradigm innovation and the innovation of governance and social structures if:

•the mind-set, values, skills and aptitudes of innovators enables system innovation and is aligned with sustainability (e.g. self-transcendent values, personal resilience)

•processes of innovation/ ways of working transcend traditional boundaries, flows and power structures as this has greater potential to forge new cultural practices.

•the way we frame and conceptualise users is expanded to take a large view on the meaning, one that reflects where power and agency to influence change is acknowledged.

Conclusions

Key questions the scenarios raise

What the scenarios make clear are that there are a number of future shifts are required in society for sustainable lifestyles to exist, and to enable transition to happen. The scenario content provokes new questions about how those transitions could emerge:

- How can you unlock potential of users, entrepreneurs, communities and citizens to play a role in the transition to a sustainable society?
- How can we expand the definition of users and entrepreneurs to fully reflect the potential they have for enabling sustainable transitions and ultimately systems change?
- What is the role of policy in managing the transitions to sustainable lifestyles? How can policy and management be a site of innovation as well as enabler of innovation for others?
- What will be the dominant paradigm that emerges from the future? How can that be catalysed and how can the transition/break down and shift of society be best managed? How can there be coherence across Europe to steward in the next paradigm?

It is important to keep in mind there are no answers to these questions as the future is unknown. But the scenarios provide rich and powerful stimulus through which to explore these questions.

Conclusions

Next steps

This is an initial report that will be tested with experts (FutureShapers and organisations/businesses) from across Europe during the autumn 2016 as part of WP8 activities. The aim of this is to develop this content into a series of practical tools and activities

Some design work will be required to put the scenarios into a useable form for practitioners. The purpose of this being to enable societal impact from the EU InnovatE project. It is anticipated that the scenarios will allow:
* users & entrepreneurs to reflect on their role in creating sustainable change - past, present and future
* students looking to understand the future and the role users and entrepreneurs can play in enabling transitions and ultimately in system change
* for the creation of a creative tool for acknowledging the importance of governance in society and starting a conversation about how innovation in that domain could be fosters
* those who want to be deliberate about the transitions required towards a sustainable future. It is a tool/ provocation that can foster collaborative activity towards a sustainable transitions

We want to test the different use cases ahead of writing up the final scenarios report D5.6, due in month 36.

APPENDIX 1:

Summary of the original SPREAD 2050 scenario materials used as inputs and base material for this work

Spread 2050 background

- SPREAD Sustainable Lifestyles 2050 was a European social platform project running from January 2011 to December 2012.

- Consolidated existing theoretical knowledge and practical experiences and best practices on sustainable ways of living.

- Identified barriers and drivers for more sustainable lifestyles.

- Provided a roadmap towards scenarios of sustainable lifestyles in 2050 developed through back-casting methodology.

- Broad societal engagement in the process, from across Europe.

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Boundaries for each scenario

- 8000 kg material footprint per person (current European average is 27,000 to 40,000 per person)
- Sets social system boundaries by using indices from statistics and research by UNDP and UN Population Division.
- The material footprint boundary of 8000 kg p.a. for one person's lifestyle is based on the worldwide recognition of these social system boundaries.

Environmental boundaries

Earth-system process	Current value	Boundary value
Climate change Atmospheric carbon dioxide concentration (ppm by volume)	387	350
Biodiversity loss Extinction rate (number of species per million per year)	>100	10
Biochemical Anthropogenic nitrogen removed from the atmosphere (millions of tonnes per year)	121	35
Land use Land surface converted to cropland (percent)	11,7	15
Fresh water Global human consumption of water (km³/yr)	2600	4000
Ozone layer Stratospheric ozone concentration (Dobson units)	283	276

Social boundaries

Human development	Current Value	Goal 2050
Human Developed Index (measure of life expectancy, literacy, education and standards of living)	0,63	0,77
Years of education in less developed countries (average years)	6	8
Life expectancy (global average)	70	>75
GINI coefficient (Measure of the inequality: a value 0 expressing total equality and a value 1 maximal inequality.)	0,7	0,55
Global population (billion)	7	8,9

European Material Footprint 2012 - 2050

European lifestyle of 40,000 kg per year in 2012:

- 10000 km in a car (15000kg)

- 2000 km public transport (700kg)

- 550kg of food with 19% share of meat, fish and seafood (6000kg)

- 37m2 person heated living space (10000kg)

- Resources for other consumption items and leisure time (8300kg)

Sustainable European Lifestyle of 8,000 per year in 2050:

- 10,000 km by means other than private automobile

- 500 kg of mostly vegetarian food

- 20 m2 person in a zero-emission energy house

- 1000 kWh of wind and solar power

- Fewer, but sufficient household appliances and other equipment

- Some resources for leisure time and other purposes
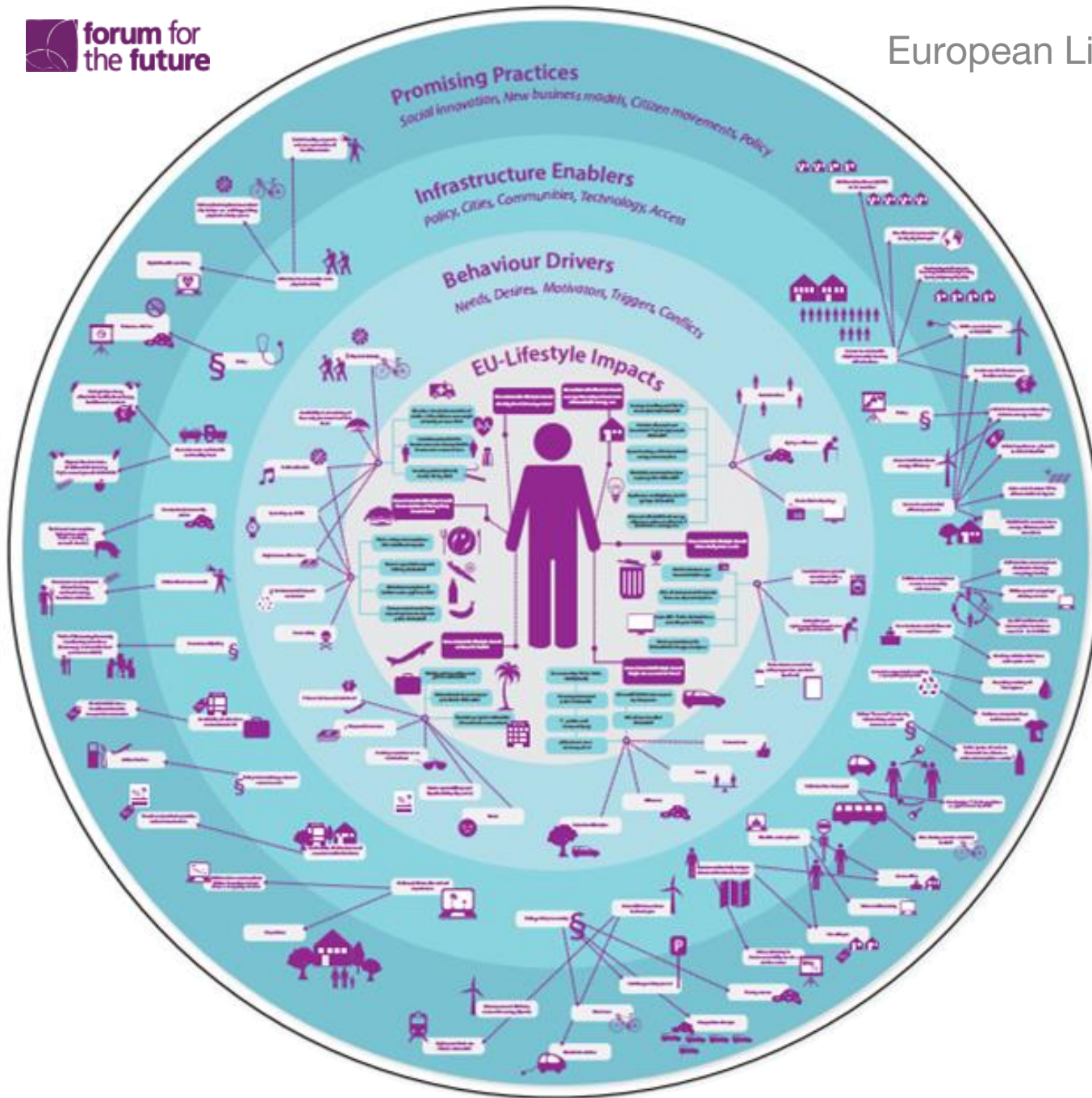
Mega trends
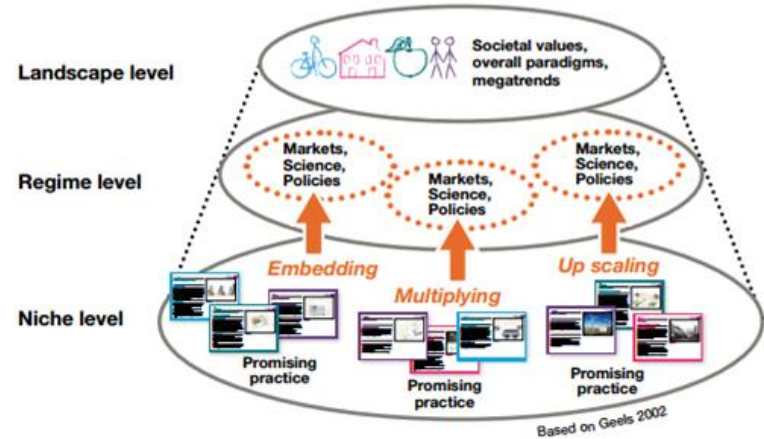
Eight sustainable life-style enablers

1. The economic system
2. Policy frameworks
3. Infrastructure and spatial planning
4. Information technology and social media
5. Social institutions
6. Collective actions
7. Individual behaviour
8. Governance processes

Original scenario axes

Pandemic technology

Singular Super Champions

Governing the Commons

Meritocracy — 2050 — Human-centric

Local Loops

Empathetic Communities

Endemic technology

Original scenario descriptions

Pandemic technology

Singular Super Champions

Europe has made the leap to a new type of sustainable, competitive and equitable economy through radical market reforms. Sustainability has become the business opportunity of the century. This is a society that celebrates an ethos of learning, achieving and self-mastery.

Governing the Commons

A new digital reality helps people to break free from many cultural constraints to reach sustainability. Ubiquitous computing enables the smart use of resources and, redirects people's behaviour from material consumption to abandon many institutions of the 20th century, liberate themselves to more meaningful lives driven by new collaborations.

Meritocracy ← **2050** → **Human-centric**

Local Loops

Society has re-evaluated their ideas of well-being and resource systems are organized through "local loops". People build their lifestyles around their work, while technology is focused on local design solutions. A new ethos of craftsmanship and professional communities shape the way people live, organize their work and spend their leisure time.

Empathetic Communities

The failure of the global economy leads to new forms of collaboration and governance grow on the level of cities and towns making them the most powerful level of public decision-making. The many fruits of global advancements are enjoyed, although people in general focus on communicating and developing solutions on the local level.

Endemic technology

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How did it all happen?

Pandemic technology

Singular Super Champions scenario narrative – how did it all happen?

» The European Green New Deal
» Transparency gets the prices right
» The upcycling economy
» Learning, not earning

Governing the Commons scenario narrative – how did it all happen?

» The 3rd industrial revolution
» Ubitech economy
» Better work creates well-being
» Wikidemocracy

Meritocracy ← **2050** → **Human-centric**

Local Loops scenario narrative – how did it all happen?

» Peak-oil game-changer
» Rediscovery of local resources
» Local turn
» Craftsman attitude

Empathetic Communities scenario narrative – how did it all happen?

» The system breaks down
» "We can" generation works together
» Public, private and people (PPP) – the new welfare
» Communitisation of urban planning

Endemic technology

What is life like?

Pandemic technology

NAME: Tanja Reinboud
AGE: 54
PROFFESION: Adult Education Trainer,
Subject: History of the App

NAME: Vladimir Popovski
AGE: 16
OCCUPATION: Pupil

Meritocracy ← **2050** → Human-centric

NAME: Anna and Dillon May
AGES: 32 & 35
PROFESSION: Combined Heat and Power (CHP)
Researcher (Anna) & Student (Dillon)

NAME: Carla da Eira
AGE: 97
OCCUPATION: Politics teacher

Endemic technology

Matrix on life-style differences

	Singular Super Champions	Governing the Commons	Local Loops	Empathetic Communities
Education	Embedded into everyday life and practices, lifelong instead of short cycles in the beginning of life. Individualized and commodified. Basis of welfare provision.	The main focus of education is on peer-to-peer skill-sharing. Learning by doing is emphasized in iterative ways. Pandemic technology enables instant feedback loops, which accelerate sharing of knowledge. Focus on informal education where classrooms do not exist.	Education is about transmitting and sharing skills. Craftsmanship and specialisation are promoted through mutual teaching and problem-based learning.	Education and learning are problem-based and collaboration-driven.
Work	Human resources highlight work. Talent is concentrated in global organisations. Entrepreneur vs. super talented multinational class	People's sources of income have fragmented. Comprehensive use of skills are valued. Everyone has something to offer to society.Key words describing work include micro-tasks, crowdsourcing and being useful to one's peers.	Work is characterised by engagement with issues and collaboration within and among guilds. Needs met by applying design thinking and formulating local solutions.	Work happens collaboratively in hubs and people learn through asking for input from colleagues. Hands-on work is highly valued. Work is neighbourhood-based and aims at contributing to the community.
City	10-15 highly urbanised metropolises in Europe. Extremely dense. Lots of new infrastructure. New specialised areas of excellence.	Cities are based on already existing infrastructure. Office and school buildings have been converted into flats and public spaces. Urban experiences are enriched by augmented reality. People find personalised solutions to fulfil their needs and aspirations on bot the physical and virtual layers.	Cities are multicentred and formed into their own loops. Guilds working and living in the loops lay their own strong characteristics on their loops.	Village infill fom sprawl to farm village. Parking lots are turned into places of food production. The public space gains great significance. Villages within cities are key elements of the urban fabric.
Health	Preventative public healthcare. Rational diets. Selfdiagnosis.	Peer-to-peer network support is characteristic of both preventative and reactive health care. Public funding is provided for health-care cooperatives. A wide variety of healthy lifestyles have become routinised. Digital feedback tools are used by everyone.	Work places provide health-care and skilled doctors. There are basic rights that all regions agree to prioritise with regard to health-care.	Paradigm of quality over quantity characterises the health-care system. This means that the meaningfulness of a person's lifespan is seen as more important than the amount of years lived. Local administration prioritises health-care and healthy living. Every municipality has a hospital. Healthy-living-circles share preventative knowledge locally.
Living	Location compensates size of the flat. New materials and design. Price drives density.	People live in small flats and work in new office lofts. The digital layer is key to ovide people with quality in their lives. Smart homes, austere furniture and digital services characterise domesticity.	Living in the loops is characterised by shared spaces, existing infrastructure and co-working spaces. Guild members often live in the same neighbourhood.	Farming opportunities raise property values. People live in shared apartments and make use of shared spaces.
Food	Price and health efficient diet. Large scale organic production.	Food production and distribution are managed by global food systems and smart food storage mechanisms are in place. A multitude of diets are offered and energy intake is reduced. Vegetable choices and synthetic meats form differentiations in diets.	Food production and distribution are marked by locality, minimised transportation and neighbourhood canteens. Energy used for food production is optimised.	Growing food in urban farming circles meets local food demand. Food transportation needs are very low. In addition to production, high importance is also placed on food quality, and distribution.
Mobility	New rail systems within and between metropolises. Personalized rapid transport systems. Smart mobility solutions. High prices.	Mobility is greatly reduced by the use of digital tools. Commuting is minimised and the construction of new traffic infrastructue has become unnecessary. Smart public transit and car and ride sharing are the main forms of transport.	Transportation is about walkability and cycling. Existing infrastructure is optimised. Intercity mobility is needed less and services are home-delivered. Local tourism and long vacations are favoured by people.	Local mobility is emphasised and less road space is devoted for private vehicles. Old and new infrastructure is adapted to cycling.
Consuming	Meanings and symbols get consumed more than products. Education and self-projected me. Price mechanism.	3D-printing personalises consumption. Material consumption is reduced by using modular appliances, which enable do-it-yourself (DIY) repair and upgrade of products. High degrees of appliance personalisation, virtual consumption and recyclable generic materials form new design and producer cultures, helping to reduce the overall number of appliances.	Consumption drivers include a mass quest to reduce the overall volume of appliances needed through sharing schemes and replacement services. Products are made with high-quality local materials and design. Availability of foreign goods is limited. All products are repairable.	Consumption is geared towards meeting people's basic needs. Sharing, swapping and renting succeed private ownership.
Economy	Large multinational firms. Efficiency. Competition. Eco-industrial revolution. Standardised transparent data.	Micro-tasks characterise economic organisation. New businesses are created in and by data-rich environments. Open source, open data and free distribution of information drive new innovation. Personal optimisation, DIY, peer services and manufacturing are drivers of the new economy.	The economy is based around local user-centric adaptations and efficient local clustering.	The economy is organized around the self-sufficiency of small units. Food poduction is prioritised. Experimentation happens on the local level and high value is given to community activities.
Sense of security	From technological progress. Transparency. Surveillance. Individual choices. Thought leaders.	Sense of security is heightened by membership in peer-to-peer communities. Democratised data empowers people. Easy access to services, products and global knowledge-bases promotes equality. Personalised appliances and direct participation increase a sense of belonging and security.	Sense of security is generated through guilds and understanding of how the system, i.e. the closed cycles, work. People identify themselves primarily as part of their work communities.	Sense of security is generated by communities, closed circles, cooperatives as well as by health and food circles. PPP-systems guarantee participation and sense of ownership in public and social affairs.
Leisure time	Investing in own education and training.	Leisure time is formed around a multitude of digital interactions. Home consumption, high quality household capabilities and digital crowd experiences are the main ways of spending free time.	People have outsourced their housework in order to be able to maximise their inputs in work communities. Leisure time is mostly spent with guild members.	Leisure time is mostly public and used for social activities, e.g. in gardening circles. Vacations provide time for self-reflection.

Material footprint for each scenario

Globally oriented

Top down governance — **2050** — **Bottom-up governance**

Locally oriented

Top-left (blue): Leisure time 300 kg, Others 300 kg, Product consumption 500 kg, Food 2500 kg, Mobility (daily and tourism) 2800 kg, Housing: building 1300 kg, Housing: electricity 300 kg

Top-right (pink): Others 200 kg, Leisure time 400 kg, Product consumption 500 kg, Food 2500 kg, Mobility (daily and tourism) 2700 kg, Housing: building 1400 kg, Housing: electricity 300 kg

Bottom-left (teal): Leisure time 400 kg, Others 700 kg, Product consumption 400 kg, Food 3300 kg, Mobility (daily and tourism) 1500 kg, Housing: electricity 400 kg, Housing: building 1300 kg

Bottom-right (green): Others 300 kg, Leisure time 300 kg, Product consumption 500 kg, Food 3600 kg, Mobility (daily and tourism) 1200 kg, Housing: electricity 800 kg, Housing: building 1300 kg

Material footprint for each scenario

Material Footprint (kg/person/year)	Singular Super Champions	Central assumptions on technology	Central assumptions on lifestyle	Governing the Commons	Central assumptions on technology	Central assumptions on lifestyle
Food	2500	Hi-tech organic.	Price mechanism, sustainable elite, low to no meat, efficient diets (economy-ecology-health).	2500	High-yield plants, synthetic meat, less waste.	Smaller energy intake, no appetite for meat, healthy diets.
Housing: building	1300	Global zero energy technology (no heating or cooling), longevity of buildings, but mostly newly built, flexibility of flats, upcycling of construction materials.	Small, smart flats, flexible space use, dense living.	1400	Smart homes, retrofitting functional, space-efficient flats.	Few new buildings, efficient space use, mainly from wood, virtual services reduce need for space at home, home replaces office.
Housing: eletricity	300	The energy demand of housing and ICT has decreased, thanks to efficient technological solutions. Highly resource-efficient and carbon-neutral wind, as well as solar power.	Energy demand has decreased in housing and ICT, but not substantially, as ICT is everywhere.	300	Reduced energy consumption but ubiquitous ICT, based on electricity and super grid, diverse renewable resources, distributed production, fossil fuels phased out, lots of players in energy market.	Ubiquous ICT, homes replace offices and meeting locations, limited amount of 3D-products.
Mobility (daily and tourism)	2800	0.2-0.4 kg/km. Dense local service network as a result of economic efficiency and super-efficient logistics systems, shift in urban infrastructure from car traffic to smart mobility based on efficient Personal Rapid Transportation systems, expensive high-volume fast rail network between agglomerations (new but efficiently used infrastructure).	5000-15000 km/yr. People live near and move after work in(to) extremely dense areas of excellence, healthy mobility patterns major part of daily exercise, transparent pricing boosted awareness and phased out car use in urban areas, prices reduce traveling in general, but many people still travel occasionally, only full planes and other vehicles.	2700	0.3 kg/km. Smart and individually customised public transport, car-sharing, slow air travel (e.g. solar zeppelins). Maintenance of existing basic infrastructure.	9000 km/yr. Car-sharing, minimal commuting (e.g. no more offices), personal optimisation, direct behavioral feedback, virtual consumption reduces travel needs.
Product consumption	500	Extremely efficient ICT solutions (sensors, centralized computing, cloud farms), use of abundant instead of scarce materials for ICT, combination of longevity and sophisticated recycling.	Low to no-material elite: dematerialisation is cool. People invest in themselves.	500	Modular appliances. Centralized cloud farms, optimal location. 3D component printing. Recycled materials.	Less ICT appliances. Virtual consumption reduces overall resource use. Small amount of tailored personal goods. 3D shopping culture.
Leisure time	300	Improved resource efficiency of ICT.	Educational services.	400	Improved resource efficiency of ICT.	Virtual entertainment.
Others	300			200		
Sum	8000			8000		

Material footprint for each scenario

Material Footprint (kg/person/year)	Local Loops	Central assumptions on technology	Central assumptions on lifestyle	Empathetic Communities	Central assumptions on technology	Central assumptions on lifestyle	Average European in 2008 (Lähteenoja, S., Lettenmeier, M., Salo, M. (2008))	Reference goal: Sustainable Material Footprint 2050 (Lettenmeier, M. (2012))	Central assumptions on technology	Central assumptions on lifestyle
Food	3300	Efficient production and plants, less transportation	Optimal food intake, use of food services, no leftovers	3600	Local nutrition cycle, very low transport.	Sufficient and healthy lifestyle, occasional scarcity, self-sufficiency.	7300	3000	Lower resource intensity (9=>5-6kg/kg), e.g. less waste.	Low meat and dairy(9=>5-6kg/kg), low intake (500-600kg), less waste.
Housing: building	1300	Modular infills help in using existing infrastructure. Wooden construction increases.	Less appliances, less rooms, less living space, more shared spaces outside the home.	1300	Resource-saving housing design, diverse retrofitting of existing buildings, longevity of buildings, infill on yards makes housing denser and allows more community-based living.	Clever housing design allows living in less space, dense living, new social practices, community space.	2400	1300	Zero energy and low resource intensity (longevity, new materials) =>65kg/m2 (about 2012 in building resource intensity but in 2050 as a zero energy building incl. energy).	20m2/person, no built yards.
Housing: eletricity	400	Breakthrough in solar panel technology, local energy sources, no or few energy exports, different CO2 and resource intensities, efficient neighbourhood-level CPH production for home and work.	Less appliances, less rooms, less living space.	800	Local low-tech solutions, distributed production, low-tech solutions using wind, solar and residues of biomass.	Significant voluntary reduction in consumption levels, less appliances.	3300	300	1000 kWh 0.3 kg/kWh, wind and solar, efficient appliances	Less appliances through smaller room space.
Mobility (daily and tourism)	1500	0,25 kg/km. Cycling routes, reduced travelling means that old railroad and ship stock and infrastructure are still sufficient and in use.	6000 km/yr. No need to go far, regional holiday, high recreational value of local biodiversity reserves. Home delivery of everything. Work and home in the same place. Journeyman, travel once in your lifetime.	1200	0.3 kg/km. Less road space, streets converted to food production lanes.	4000 km/yr. Minimal mobility and traveling, walking, cycling. Village infill, from sprawl to farm village.	11000	2000	0.2kg/km (1,5-2 more efficient than present bike, bus, local rail, boat, flight).	10,000 km/yr, no car use.
Product consumption	400	Local maintenance, reuse and recycling services. Longevity and user-centric tailoring of products. Light ICT.	Services replace owning. Less goods at home.	500	Occasional availability of imported goods. Do it yourself. Regional manufacturing.	A smaller number of product (group)s in use. Collective household activities, shared ownership.	2600	500	12 product groups 42 kg/a, indreasing longevity, decreasing material intensity.	Decreasing ownership, increasing sharing options, reuse, second hand.
Leisure time	400	Dense urban structure.	Services widely used.	300		Collective leisure time activities.	1500	400		
Others	700			300			900	500		
Sum	8000			8000			29000	8000		

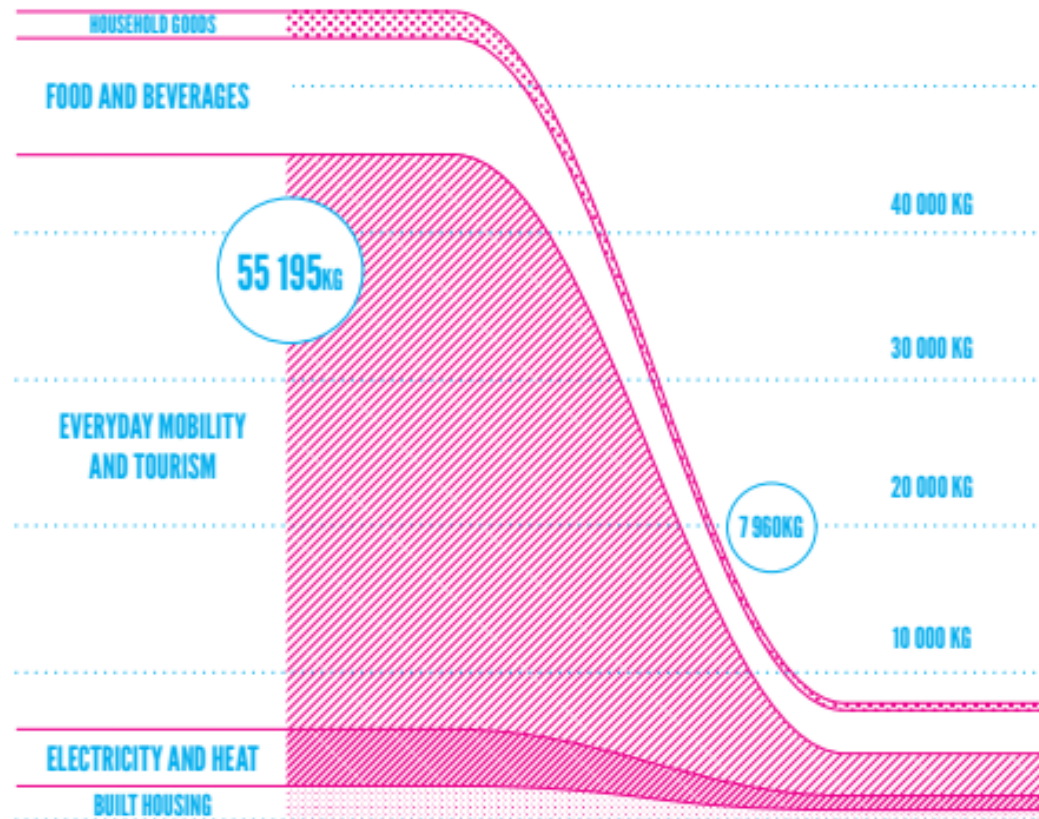**What do you think about your current material footprint, Bernd?**

"Mobility is so high on my chart because we live in the countryside and are dependent on our car. Heating and energy consumption on the other hand is so low, as we heat with wood, which is carbon neutral. Regarding food we try to buy locally, but I have to admit we are mainly driven by comfort."

BERND

Today
Name: Bernd
Gender: Male
Nationality: German

YOUR MATERIAL FOOTPRINT FROM 2011 TO 2050

HOUSEHOLD GOODS

FOOD AND BEVERAGES

55 195 KG

EVERYDAY MOBILITY AND TOURISM

7 960 KG

40 000 KG

30 000 KG

20 000 KG

10 000 KG

ELECTRICITY AND HEAT

BUILT HOUSING

Stories of how lifestyles change 2012 - 2050

What do you think about your current material footprint, Inke?
"I am not surprised by my footprint. I was already aware of what changes needed to be made."

INKE

Today
Name: Inke
Gender: Female
Nationality: Finland

YOUR MATERIAL FOOTPRINT FROM 2011 TO 2050

40 000 KG

26 056 KG

30 000 KG

HOUSEHOLD GOODS
FOOD AND BEVERAGES

20 000 KG

7 983 KG

EVERYDAY MOBILITY AND TOURISM

10 000 KG

ELECTRICITY AND HEAT

BUILT HOUSING