Green Paper

on Design Enabled Innovation in Urban Environments

This version dated 5 June 2019

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Co-funded by the Horizon 2020 programme
of the European Union

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About

What is Designscapes? Designscapes is an EU funded, H2020 Coordination and Support Action whose primary aim is to exploit the generative potential of urban environments to encourage the uptake, enhancement and up scaling of Design Enabled Innovation by enterprises, start-ups and SMEs, public authorities and agencies, NGOs and other stakeholders.

What is Design Enabled Innovation? As documented in an Open Access Book of the Designscapes project (see https://www.springer.com/gp/book/9783030001223), Design Enabled Innovation points at forms of (incremental or radical) innovation that are triggered by design thinking, or by a diffuse, creative problem-solving ability.

Why the Urban dimension? The Designscapes Book posits that many unsolved problems of modern Cities - related to global challenges such as climate change, natural disasters, migration, inequalities and segregation, aging population, democracy crisis etc. - can be approached with workable answers by Design Enabled Innovation, which is particularly stimulated and enhanced by its being framed in an urban context.

What has Designscapes done so far? We are validating the assumption that Design Enabled Innovation can successfully address urban challenges, and be fertilised by them, through co-creating a EU-wide collection of relevant case studies, in two main ways:
1) by drafting 14 City Snapshots - brief overviews of how the urban dimension matters - in mid and large EU cities such as Athens, Copenhagen, Freiburg, Gabrovo, Guimaraes, Florence, Lisbon, London, Milan, Paris, Rotterdam, Sofia, Stuttgart and Valencia, complemented by 70 in-depth interviews with the promoters of local initiatives, which can be considered as positive examples of Design Enabled Innovation;
2) by distributing an overall budget of 1.5 million Euros to 100+ new Design Enabled Innovation initiatives across the EU Member and Associated States via an Open Call for Pilots, in 3 consecutive editions, the second expiring end July 2019 (see http://designscapes.eu/open-calls/).

Why a Green Paper? Halfway through the project's lifetime, the time is ripe to ignite a broader discussion on the usefulness of tackling design as a vertical policy target - therefore an autonomous portfolio - instead of a mere cross-cutting priority - i.e. a component of different funding areas - as it stands now both at EU and national/regional levels. Other concurrent initiatives (such as the Design for Innovation project, see https://www.interregeurope.eu/design4innovation/) are coming to similar conclusions. However, the evidence brought about by Designscapes is not only aligned with best practice examples from within and outside the EU in terms of policy prioritization and impacts thereof. We are also demonstrating, through the first results of the Open Call for Pilots, that interesting and practical solutions can also be obtained with minimal financing budgets.

What's next? The current text of the Green Paper is put on display in a dedicated project website, open to the comments and suggestions of additional domain experts or interested people. Ultimately, it will be transformed into a White Paper, which will constitute one of the key outputs of our project and hopefully can lead a major breakthrough in design and innovation promotion policies in Europe.

Why contribute? We have taken stock of the suggestions given by the participants in the Designscapes mid-term conference held in Brussels, 17 May 2019, which are reflected in this publication. We will be happy to accommodate in this draft more helpful hints, and especially pragmatic recommendations, for the final text to achieve maximum outreach and policy impact at EU and national/regional levels.

Contents

Introduction

The objective of this Green Paper is to explain why and how public and private sector innovators in Europe can take benefit from integrating design with the urban dimension, and to formulate proposals for vertical policy measures - to be adopted at European Union (EU), Member State (MS) and Regional levels - which may allow the design capacity and capability of European innovation actors and systems to be increased and made more effective and efficient.

The evidence being collected in support of the statements below derives from the H2020 CSA (Coordination and Support Action) entitled Designscapes, which until May 2021 will spend a EU budget of €1.5 million to finance the realization of 100 design enabled innovation initiatives in urban environments through an Open Call for Pilots.

In the context of this document, design is taken as being a synonym for design thinking - or a creative problem solving, socio-technical activity aiming to change existing things or introduce new things in the state of the art that make our lives better, as originally stated by Herbert A. Simon (1969).

Designscapes is gathering a wealth of best practice innovative examples, by now in the form of feasibility studies, and in the upcoming months will pilot the prototypes of new products, services, policies or infrastructures, which are both embedded in the urban dimension and offering smart solutions to the wicked problems of modern times.

We consider these examples instructive for two reasons. First, because they tell us more about the dynamics and ways of interaction between design, innovation and the urban dimension (*descriptive value*). Second, because they promise to challenge the urban status quo in a path-breaking and potentially scalable and transferable fashion; in other words, they constitute inspiring examples for public and private sector innovators (*normative value*).

In the remainder of this document, we intend to share the experiences in our possession of Design Enabled Innovation in urban environments with a broad European audience and promote the formulation of informed opinions by the interested readers on the analyses presented, the measures proposed and the questions raised.

This Green Paper is part of a consultation process, which formally started on 5th June 2019 at the following project website:

http://designscapes.eu/consultation

The aim is to receive support, suggestions, criticism and constructive contributions to the theses exposed herein - including votes on the dilemmas presented in the body of this document.

Interested parties from the so-called “Quadruple Helix” - i.e. (especially local) governments, research institutions and academia, SMEs and larger enterprises, business associations and NGOs, not to forget individual citizens - are thus invited to make their positions on this subject matter known until 30 November 2019.

The Designscapes consortium will help the debate be organised and gain momentum at the local level, through thematic seminars, workshops and conferences within the partner countries and regions (BG, DE, DK, EL, ES, FR, IT, NL, PT, UK) to promote the emergence of the widest possible variety of opinions.

All issues raised - even if limited to a few comments or questions - will be considered in the next edition of the Green Paper, which we expect will see the light by 30 June 2020.

Happy reading!

Why more design is needed in EU innovation policy

Let's go straight to the point. Over the past 20 years, design as a tool for product, process, service and policy innovation has gained visibility and momentum, building on a wide range of success stories from both research and business practice. Influenced domains range from industry, both large and small, including consumer goods and financial services; to public administration, including both government functions and public services; not to forget R&D and technological innovation, which have taken benefit from a number of design related approaches: most notably crowdsourcing, citizen science, user centricity, peer collaboration, co-creation, co-innovation and co-production. Recent statistical evidence[1] shows a clear correlation between an enhanced use of design and the firm's capacity to e.g. eco-innovate or more generally, stay ahead of competition. Similar or related reflections are applicable to the use of collaborative design approaches to innovation in public policy[2].

These trends and developments have not stayed unnoticed at the EU policy level. As early as in 2010, design was recognized as a crucial innovation related activity and included in the core themes of Europe 2020 flagship initiative Innovation Union[3]. The 2012 Report and Recommendations of the European Design Leadership Board[4] urged the Commission, Member States and Regions to take hold of the 21 policy recommendations contained therein and to "act upon them in support of a shared vision for design in Europe for the 21st century." Social innovation in all its possible variants (including digitally supported) has become one of the cornerstones of the EU Framework Programmes for Research and Technological Development as well as many Member State and Regional Smart Specialisation Strategies, after the pathbreaking report prepared by the Bureau of European Policy Advisers (BEPA) back in 2010[5]. The Design for Europe initiative[6] was co-funded by the EU in 2014-2016 as part of the Action Plan for Design-Driven Innovation, with the aim "to strengthen the European design community of practice, and ultimately equip businesses, public sector organisations and policymakers with the tools they need to innovate". The European Network of Living Labs, born in 2006 by the impulse of the EU Finnish Presidency, has delivered in 2018 a Manifesto for Innovation in Europe[7], promoting the genuinely pan-European concept of "Europe as The Lab", a large-scale open innovation ecosystem that is both original and well rooted into the experience and expertise of a new wave of innovation intermediaries. The latter include Living Labs, Fablabs, Design Labs, Coworking spaces, Citizen Science Platforms, Technology Capacitation Centres, Digital Social Innovation agents, Policy Labs and the like.

Against this background, however, "many public sector organisations and businesses, especially SMEs" - and we can add, local public authorities in Europe - "miss out on the potential to utilise design as a source for improving efficiency and stimulating growth." This particular challenge was raised by the H2020 call CO-CREATION-02-2016 - User-driven innovation: value creation through design-enabled innovation. And it is witnessed by multiple sources, including the Eurobarometer 2015 and 2016 surveys[8], showing that only 12-13% of EU enterprises make a strategic use of Design within their business models and just an additional 18% adopt Design related methods and tools within their production and value generation processes.

[1] Ghisetti, C., & Montresor, S. (2018). Design and eco-innovation: micro-evidence from the Eurobarometer survey. Industry and Innovation, 1–34.
[2] Bason, C. (Eds) (2014). Design for Policy (Design for Social Responsibility). London, Routledge.
[3] Whicher, A., & Swiatek, P. (2015), Service Design Policy Trends 2015-2020: The European Commission's influence on design-driven innovation. Touchpoint 7(1), 16-21.
[4] Thomson, M., & Koskinen, T. (Eds) (2012). Design for Growth and Prosperity. Published by DG Enterprise and Industry of the European Commission.
[5] Bureau of European Policy Advisers (BEPA) (2010). Empowering people, driving change. Social Innovation in the European Union.
[6] http://www.designforeurope.eu/
[7] https://manifestoforinnovationineurope.org/
[8] http://ec.europa.eu/commfrontoffice/publicopinion/index.cfm

Our premise is: couldn't there be a relationship between the fact that only about 30% of European enterprises seem to be actively engaged with design, and the prevailing imitative nature of innovation in many industries, as witnessed by a number of official reports? For instance, a 2016 EC study[9] on the competitive position of the food and drink industry, still the biggest manufacturing sector in terms of jobs and value added, stated that truly innovative products were only 3% of new products. In the same year, the Madelin & Ringrose report[10] recommended financially supporting the High-Growth Innovative Enterprises (HGIEs) - which represent just 4% of European firms, but create about 50% of the new jobs. There is also some empirical evidence[11] that the impact of public funding is higher for radical than for incremental innovation. However, a small sample analysis of H2020 innovation actions started in 2015[12] has documented that very few of them were actually focused on increasing the chances of commercialisation for the technologies being developed therein.

How the urban dimension can make a difference

The Designscapes Book recently published with Springer (that is freely downloadable here:[13]) adheres to a problem-driven concept of innovation widely shared in literature[14], which has led authors such as Tina Mermiri[15] to speak of an upcoming transition from a knowledge based to a transformative economy: the former puts creativity and innovation at the core of industrial competitiveness and sustainability; the latter considers the search for solutions to relevant societal issues as key for the emergence of novel, path-breaking artifacts or to transform the way people use existing technologies. Achieving this goal requires - and to some extent induces - an extensive, rather than limited or partial, change in collective behaviour, directed to the common good[16]. In turn, this implies that the innovator addressing global challenges is also asked to deliver solutions that people would love to use, which also ensures a greater market success to related products and services[17].

But there is more. In this new situation, moving from the current to a desired future state, where systemic change occurs, becomes the shared goal of public and private sector innovators alike. The former should and do engage in creating favourable conditions for the latter to grow and flourish. The latter increasingly produce new and sustainable solutions to the wicked problems of modern times[18], which are high on the policy agenda, and by doing so contribute to their own business realisation. Ultimately, this embeds a more impactful - for its being problem-driven - notion of innovation in the complexity of socio-technical contexts, promoting its insurgence and instantiation in new and unprecedented ways.

In this perspective, cities play a crucial role, acting as testbed environments for new solutions targeting global challenges, to be commercially exploited at a later stage, and/or being the cradles of emerging, radically innovative practices that disrupt existing markets and create new opportunities for growth and jobs. In fact, it is in the city that innovation is driven by problems that present themselves in the most societally relevant way. At the same time, it is in the city that innovators can find the best opportunities for collective knowledge creation and the required networked learning skills.

[9] https://publications.europa.eu/it/publication-detail/-/publication/65cec388-d156-11e5-a4b5-01aa75ed71a1

[10] https://ec.europa.eu/epsc/publications/strategic-notes/opportunity-now-europe%E2%80%99s-mission-innovate_en

[11] Beck, M., Lopes-Bento, C., & Schenker-Wicki, A. (2016). Radical or incremental: Where does R&D policy hit? Research Policy 45, 869–883.

[12] Grimpe, C., Sofka, W., & Distel, A. (2017). Study on Innovation in Horizon 2020 Projects. A content analysis of 233 innovation project proposals awarded in 2015. Final Report. EUR 28532 EN

[13] https://www.springer.com/gp/book/9783030001223

[14] Coccia, M. (2016). Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms. Technology Analysis and Strategic Management, December, 1-14.

[15] Mermiri, T. (2009) Beyond experience: culture, consumer & brand, the transformation economy. Arts & Business, London.

[16] Megens, C.J.P.G., Peeters, M.M.R., Funk, M., Hummels, C.C.M., & Brombacher, A.C. (2013). New craftsmanship in industrial design towards a transformation economy. In: Proceedings of the 10th European Academy of Design conference: Crafting the future, April 17-19, Gothenburg, Sweden.

[17] den Ouden, E. (2012). Innovation design. Creating value for people, organisations and society. Springer-Verlag, London.

[18] Buchanan, R. (1992). Wicked problems in design thinking, Design Issues 8, 5-21.

Again, this perspective is not new. Started in 2012 as a multi-stakeholder platform supported by the European Commission and bringing together cities, industry, small business, banks and research actors, the European Innovation Partnership on Smart Cities and Communities (EIP-SCC) "builds on the engagement of the public, industry and other interested groups to develop innovative solutions and participate in city governance." What we add to the picture is a different way of looking at the innovative activity, no longer in terms of a phased, linear process, or contrasting its radical and incremental outputs. Instead, we refer to four stages of maturity, exponentially related with the growing impact potential of an innovation:

- *Inception*, consisting in the ideation and feasibility assessment stage;
- *Development,* whereby innovation prototypes are produced and tested, and "niche" innovations start to emerge in the real practice;
- *Transition*, which includes scaling up and out, strengthening and diffusion of the innovation in its native context and beyond it;
- *Systemic change*, which ultimately occurs when pre-existing socio-technical structures are permanently modified by the newly established solutions.[19]

Not by chance, the first three stages above are mirrored by the corresponding rounds of the Designscapes Call for pilot proposals, now open in its second edition, until July 2019, with a dedicated budget of €1 million for the development of 40 innovative and game changing prototypes of products, services, processes or policies[20].

What we also add to the picture is that design is crucial to cities in generating transformative innovations dealing with global challenges. Designscapes explores the role of cities as fertile environments for a wider adoption and deeper utilisation of design within innovators' activities.

The Designscapes experience: preliminary lessons learnt

In the proposed perspective, *'design-for'* widens its importance with respect to *'design-of'* and comes to the forefront as the key approach for embedding innovation in complex socio-technical contexts, "the" way to work effectively in building the conditions for transition.

When we speak of design, we certainly have in mind its close relation with creative and collaborative problem solving, though not limited to the capacity of professional expert teams, despite the relevant role they play in supporting Design Enabled Innovation. We also think of e.g. lead users[21] and grassroot innovators, in accordance with the notion of 'diffuse design', which is considered in many respects as a widely spread and promptly available natural capacity of human beings[22].

The term 'infrastructuring' synthesizes how expert design succeeds in supporting the aggregation of resources to generate new products and services which users will love to use - and thus the creation of societal as well as business value. This value creation may happen in two ways:

- Directly: when expert design produces novel solutions or improves and/or re-adapts existing products or services to address user needs while targeting global challenges;
- Indirectly: when expert design creates the conditions that help users/citizens to generate their own solutions carrying the best fit with user practices.

In respect to the former way, infrastructuring includes the most common design activities, which aggregate technical knowledge, professional experience, existing products and technologies. It may also happen that an expert designer promote diffuse design by triggering, inspiring or facilitating people's creativity, or engaging them in co-creation.

[19] Geels, F.W. (2005). Technological transitions and system innovations: a co-evolutionary and socio-technical analysis. Edward Elgar Publishing, Cheltenham, UK.
[20] http://designscapes.eu/open-calls/
[21] Von Hippel, E. (1986), Lead Users: A Source of Novel Product Concepts, Management Science, 32 (7), 791–806.
[22] Manzini, E. (2015). Design, When Everybody Designs: An Introduction to Design for Social Innovation. The MIT Press, Boston, Mass.

In respect to the latter way, infrastructuring is pushed to the level of policy making, supporting systemic change by a combination of '*design-for*' and '*design-of*' activities, both being brought to their full potentials.

The Designscapes Book[13] discusses these issues moving from three research hypotheses, which are being tested against the evidence brought about by the winners of the Call for Pilots, more specifically that the application of design approaches and tools:

1. Can facilitate the generation of innovation in urban contexts, both as an endogenous process relating to local resources and the result of embedding innovations from other contexts with similar, or even dissimilar conditions.
2. May help propagate local innovation skills and capacities within urban contexts not previously exposed, to the required extent, to other innovation enabling conditions.
3. Can facilitate the scaling, embedding and/or transferring of innovation, from the urban context it was born within to other contexts having similar, or even dissimilar conditions.

Operationally, this leads to consider and analyse / evaluate several key processes, including:

- The dynamics of innovation pathways and their interactions with urban dimensions and resources;
- The skill and capacity building processes, enabled by design, which lead to those relevant dynamics;
- The creation of conditions for up and out scaling innovation in a generative dialogue with the city communities;
- The creation of conditions for introducing innovation 'born elsewhere' and the generation of local hubs of actors dealing specifically with such innovation, and/or
- The transformation of 'imported' innovation into something else, more tailored to the local situation, or even dramatically different.

The last point alludes to Jane Jacobs' concept of import replacement[23] as transferred from the realm of production of goods and services to the creation, adoption, adaptation, and diffusion of innovation contributing to systemic changes wider than urban-only. One of Jacobs's chief insights is that import replacement - which occurs when a city begins to locally produce something that it formerly imported - leads to a diversification of available products for consumption and investment within a city, which brings positive impacts to local infrastructure, economy and skills - therefore to innovative capacity, not only production levels. Dealing with 'old' things in new ways or contexts forges the path to doing completely new things never thought of before.[24] If 'old' is assumed as the import of an innovation being used somewhere else, Jacobs' concept suggests a more systemic and context related view of innovation scaling, which leverages the *urban ecosystem*, and the networks having there one or more active nodes, as both the place of innovation embedment and that of transition to systemic change.

However, we do not intend to follow such a line of thought to the point of considering a massive take up and diffused emergence of innovations as the inevitable outcome of adding design tools, methods and instruments to a supposedly non-design-enabled process. We are rather interested in exploring the conditions for design to increase the creative capacity and/or encourage relevant innovations to be judiciously adopted and put in practice in a certain city, community or urban environment. This requires that Design Enabled Innovation be more than the injection of design methods and tools into innovative activities. It has to be about creating a diffuse design attitude, including the capability of 'listening to the context', the capacity to support participation, the ability to synthesise and visualise solutions, the skill to devise complex solution architectures, and the attitude to connect 'micro' initiatives with 'macro' infrastructural interventions.

Echoes of such an approach can be retrieved in the 'Blueprint of cities and regions as launchpads

[23] Jacobs, J. (1969). The economy of cities. Vintage Books.

[24] Satell, G. (2013). How to manage innovation. Online at: https://www.forbes.com/sites/gregsatell/2013/03/07/how-to-manage-innovation-2/#544a3a5d4785

for digital transformation', an initiative of the European Commission, DG GROW,[25] first released at the Open Innovation 2.0 conference in May 2016. A report delivered by the Strategic Policy Forum on Digital Entrepreneurship[26] highlights that "cities and regions have the capacity to create a symbiotic ecosystem to nurture the modernisation of businesses, notably through the uptake of new business models and digital technologies". An online application for the self-assessment of digital readiness[27] allows to determine the digital maturity of a city and to identify the starting points for discussion on how to (further) develop and improve its digital transformation strategy. The resulting actions, although nicely depicted and supported by clear guidelines, are nonetheless dependent on the initiative of city decision makers. In fact, the idea behind the Blueprint concept is to 'transfer by imitation' the good practice already developed in one city, to the less advanced situation of another.

What we would rather propose to introduce is a system of incentives for both public and private sector innovators, to be set up and managed at city or regional level, which would help transition and change materialize locally and emergent innovation trends become more pervasive in all European territories. The system we propose - a small sample of which is exemplified by the Designscapes Open Call - would put a strong emphasis on the integration between design, innovation, and the urban dimension, according to the principles sketched above. The resulting environment would be that 'symbiotic ecosystem' referred to in the DG GROW report, whereby design would not only support the creation of innovations (the pilot initiatives in the case of our Open Call), but also generate a collection of infrastructures and policies to connect, amplify, and scale them up.

The Challenges to Design Policy (evidence from the conference work)

There are however some challenges or dilemmas for policy making that need to be considered in order for the proposed system of incentives to be successfully introduced and implemented. These include the following issues, which have been discussed and deepened during the conference being organised by the Designscapes project on 17th May 2019 in Brussels:

1: Design for value generation

Design cannot be limited to the adoption of a toolbox of methods and tools, but rather be an approach to orient innovation to generate value. The issue is how to support the production of a broad range of new solutions, creating the conditions for a highly innovative context. In this sense, design thinking should not only focus on the intrinsic value of innovative outputs but also on the value of the resources that help generate them.

Relevant questions are therefore:

- How can design be seen as a broader problem solving strategy, rather than just a methods/tools/processes based approach?
- Which learning mechanisms should be promoted and ignited, pushing different types of innovators to transform their mindsets and move from capacity to maturity?[28]
- What should be done to bridge the gap and create more and more collaborations between design schools and innovators from both the civil society and the business community?

The big policy message here is that the conventional wisdom on innovation (eco)systems must be profoundly revised. To the extent that diffuse design or social innovation processes are considered as fundamental building blocks, the

[25] https://ec.europa.eu/growth/content/blueprint-cities-and-regions-launch-pads-digital-transformation-0_en
[26] http://ec.europa.eu/growth/industry/policy/digital-transformation/strategic-policy-forum-digital-entrepreneurship_en
[27] http://www.digitallytransformyourregion.eu/

[28] Design awareness, i.e. increasing awareness about the existing design capabilities. See Malmberg, L. (2017). Building Design Capability in the Public Sector : Expanding the Horizons of Development. (1831 Doctoral thesis, monograph), Linköping University Electronic Press.

mere addition of a new stakeholder category - end users, or civil society if one prefers so - to the existing ones in regional and local innovation (eco)systems is no longer enough. In fact, the roles and functions played by these actors are so different from those of government, academia and businesses, that their proper inclusion, in order to be successful, must recognise and leverage such diversity.

One example for all: the function of knowledge generation in innovation (eco)systems can no longer be situated in the R&D community only[29]. It is to be considered (also) a collective and social endeavour, the outputs of which have the nature of a common good. But it would be a mistake to try and frame the 'grassroot' knowledge generation processes within the same rules and principles of formal R&D projects. Yet, when it comes to R&D and innovation policy, with the usual and laudable exceptions, what we have seen prevailing until now is a sort of binary logic, reserving some financial resources to the 'ghetto' of social innovation (often without even considering a revision of standard access rules) and trying to 'fertilize' or 'contaminate' conventional R&D with some user involvement elements, rarely pushed to the transformative level that real value (co)creation would require. Transformative not only in terms of outputs and outcomes, including human behaviours, but also (and inevitably) of adopted methods and processes.
Also problematic is the way urban and regional policy makers consider knowledge and knowledge creation as a sort of side effect of innovation, thus freezing the chance to transform their territories (and especially European cities) into collective learning environments where innovation is the playground and not just the end of the game.

Some dilemmas we would like to address with the contribution of European experts and practitioners include the following:

[29] Warnke, P. et al. (2016). Opening up the innovation system framework towards new actors and institutions, Karlsruhe, Fraunhofer ISI Discussion Paper No. 49, online at: http://nbn-resolving.de/urn:nbn:de:0011-n-3829280

1.1: should design thinking as a mindset become more prominent in
[ ] education (primary/secondary school)
[ ] education (university - all disciplines)
[ ] education (STEM curricula - Science, Technology, Engineering and Math)
[ ] a new wave of VET - Vocational and Educational Training - schemas
[ ] existing (readjusted) VET schemas
[ ] publicly funded R&D and innovation projects
[ ] other….

1.2: to make sure that change occurring at 'niche' level is instigated at societal scale, Europe would need more:
[ ] financial support to creatives and 'garage' innovators
[ ] professional designers joining business innovation teams
[ ] real life testbeds of new products and services under development
[ ] collaborations between design schools and other universities
[ ] collaborations between design schools and innovation intermediaries (fab labs, incubators, business associations, etc.)
[ ] collaboration between design schools and public authorities
[ ] other…

2: Design as support for the innovation capacity of cities

The innovation capacity of cities is related to some key dimensions, discussed in-depth in the Designscapes Book[13], which include: entrepreneurial culture, institutional capacity, cultural vibe, environmental awareness, social activism and integration. Design can be seen as a key enabling factor of such innovation capacity by shaping and supporting an informal and diffused infrastructure - the 'urbanscape' - that hosts and coordinates value generation in cities. By using design in this way, cities become the ideal environment in which innovation is incubated and empowered.

Relevant questions include the following:

- How can latent design capabilities in urban contexts be captured to become innovation resources?
- What should be done to create the local conditions for design to increase its power of igniting transitions, value creation and impact generation processes in our cities?[30]
- Which design resources can be activated to coordinate punctual initiatives, so as to create an innovation network as urban infrastructure and/or increase its accessibility if already existing?

Some dilemmas we would like to address with the contribution of European experts and practitioners include the following:
2.1: which obstacles should be removed that limit the infrastructuring power of design in our cities:
[ ] lack of context based KPIs to discriminate between 'good' and 'bad' design applications
[ ] limited policy awareness of what diffuse design is about and can do
[ ] insufficient consideration of design enabled approaches by most innovation intermediaries
[ ] poor communication of potentials for urban innovation by design professionals and trainers
[ ] resistance to experimental approaches in urban government and decision making
[ ] limited involvement of professional designers in service reform teams
[ ] other…

2.2: what is the best dimensional scale for diffuse design to leverage its power:
[ ] the neighbourhood, particularly of larger sized cities, where face to face relations keep alive
[ ] the small town, still the prevailing profile in the EU urbanization model
[ ] the large sized city, to add to the technology push concept of smartness
[ ] the region, where large and small cities can be made to work together
[ ] city twinnings, large with small, or advanced with lagging behind in terms of innovation
[ ] city networks, also cutting across regional and country borders
[ ] other…

3: Design as a new Policy Competency

Creating the conditions for design (as well as innovation) to unleash their potentials is tightly connected with the parallel diffusion of a design and innovation prone mindset in policy makers and civil servants. This is only part of the broader issue of capacity building for the public sector of the future. In that sense, design is no longer to be simply considered as a (still fundamental) goal of innovation policy, but also as a resource to generate innovation.

Relevant questions comprise these below:
- Which collaborations should be activated between the local, the regional and the interregional levels to put design higher on the agenda for transition?
- Which role could be played in the new public sector's competency building by the higher education institutions and the vocational training systems - at national and European levels?
- How can networks be activated, that learn from the knowledge created in different cities, and align transfer experiments to a common vision of large scale change?

Some dilemmas we would like to address with the contribution of European experts and practitioners include the following:
3.1: how can design competencies be instilled or good practice developed in the European public sector, e.g. by:
[ ] introducing ad hoc training sessions in design for existing staff
[ ] creating mixed teams with the inclusion of design professionals
[ ] engaging citizens and service beneficiaries permanently in government innovation processes
[ ] building a sandbox - a safe, controlled space where to run design experiments
[ ] facilitating staff turnover in the middle and top management of the public sector
[ ] giving priority to design competencies in the selection of new staff
[ ] other...

[30] Structure enabling design practices. See Malmberg, op.cit.

3.2: how can design be profitably used in policy making, e.g. to:
[ ] build shared visions of the future, relatively unaffected by the electoral cycles
[ ] mobilise societal energies to ignite system effects and transitional dynamics
[ ] promote the scaling up and out of innovations
[ ] develop context intelligence capacities to spot emergent needs for policy change
[ ] innovate current policy mixes in conditions of uncertainty
[ ] monitor and evaluate public policy impacts
[ ] other...

We cordially invite European stakeholders to help us form an opinion on the above dilemmas, giving their preferred ordering of preferences through answering this survey:

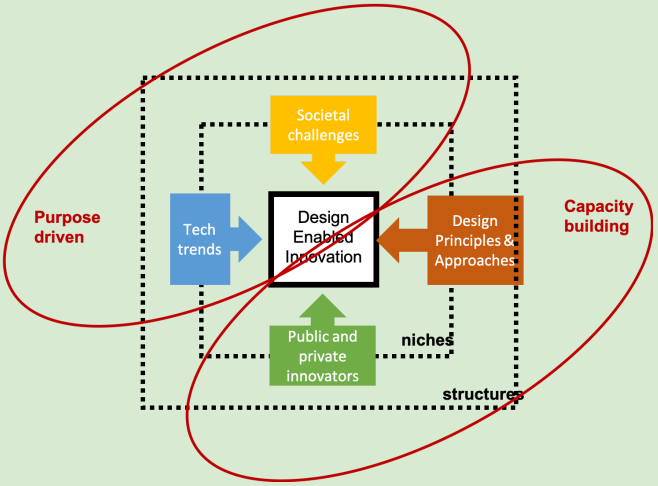
http://designscapes.eu/survey

in a totally anonymous manner.

Recommended policy actions

To summarize our perspective, we see Design Enabled Innovation at the crossroad of technology trends, societal challenges, design principles and approaches, and the inspired and growingly mature behaviour of public and private innovators. This innovation materializes within 'niches', which have the power, under certain conditions, to influence and change the structures of our living environments.
In the Designscapes Book[13], we have narrowed the focus on the various forms of interaction between Design Enabled Innovation and the urbanscape. In the picture below, we prefer to highlight what we consider as the two main priorities for future policy action:

- Make Design Enabled Innovation more and more Purpose driven: that is, give it a transformative meaning (in the sense outlined above) and cultivate its scaling potential - to let Europe become not just a Lab, but a living theatre of successful achievements.
- Work on capacity building of public and private actors, not only in terms of more and better appropriation of design methods and tools, but effective acquisition of that 'design thinking' mood and mindset being oft-cited in association with the best practice examples.



If the above perspective is credible and how it could be improved and turned into policy actions will be a topic for the consultation process following the Designscapes mid-term conference of 17th May 2019.
To facilitate these developments, we have structured the discussion having in mind the 2021-2027 programming period, and the different instruments - from Horizon Europe to Interreg to the ESIF - that are being redesigned for that period.

Within this framework, the common questions for the EU, Member State, Regional and City policy levels are:

- What are the consequences of no-change from the current scenario?
- What if design were considered as a vertical policy priority - much in the same way as innovation or growth?
- What if it were emphasized as a horizontal policy priority - similar to e.g. gender balance?

We propose to consider, for each policy option, the possible risks/issues involved, the likely benefits/opportunities brought about, the specific instruments that might be leveraged, and the expected landing situation by the end of the next programming period.
The outcomes of the discussion will be presented in the final edition of the Green Paper, together with the comments and contributions received from other European stakeholders, within the following tables or a variant thereof:

At EU level

Policy options:	No change	Design as a vertical priority	Design as a horizontal priority
Risks/issues	*Different speeds of EU Member States (MS) policies*	*Diversified starting conditions, ceremonial adoption*	*Little interoperability across countries and topics*
Benefits/ opportunities	*Synergies with the Blueprint*	*Synergies with EIP-SCC*	*Synergies with VET & skill qualifications*
Instruments to leverage	*Blueprint, FTI, SME instrument*	*Horizon Europe, EIC, ERDF*	*Erasmus+, ESF, Startup Europe*
Scenario by 2027	*Lack of MS policy coordination*	*A truly EU concept in operation*	*Increased awareness & impacts*

For many reasons, we see design as a EU level vertical policy priority. Good progress in that direction would mean further developing a truly European concept - akin to the celebrated social model or to the user driven, open innovation paradigm. Additionally, a EU level policy action might help overcome the problems related with poor Member State level policy coordination, leading to different speeds and shapes of national intervention. According to a 2014 survey by the Design Policy Monitor[31], all EU-28 countries at that time had some design promotion activities in place. Design support programmes existed in 12 countries, 18 had at least one design centre in operation and 15 were explicitly including design in national policy, either as part of innovation policy or with a dedicated action plan. As a B-plan we would also recommend enhancing the broad coherence of thematic policies by an extended injection of design. This would at least contribute to enhancing the awareness of value created and possibly the impacts, not disjoint from the renewal of training and skill qualification schemas.

At Member State level

Policy options:	No change	Design as a vertical priority	Design as a horizontal priority
Risks/issues	*Missed chance of cooperation*	*More difficulty in coordination*	*Uneven readiness per topic*
Benefits/ opportunities	*Synergies with Smart Specialisation Strategy*	*Fastened pace and improved performance*	*Synergies with VET and education*
Instruments to leverage	*Own funds, ESIF national operational programmes*	*Same*	*Same*
Scenario by 2027	*Low/unequal take up rates of design*	*National disparities possibly enhanced*	*Harmonized approach to innovation per topic*

Should the decision to pursue the same strategy be conferred to the Member State level, we could probably expect the perpetuation of some national disparities, due to the different starting points and levels of maturity of EU countries, only partly offset by the different availability of financial resources from esp. ESIF (European Structural and Investment Funds). However this situation would be preferable to the ‘no change’ option, which would also constitute a missed chance of multinational cooperation. Finally, the B-plan would put even more emphasis on education and VET reforms, which are basically a Member State competence; and taking design as a cross-cutting priority would at least favour the harmonisation of thematic policies according to common principles.

[31] See https://www.ico-d.org/database/files/library/SEE_DPM_2015_Jan.pdf

At Regional level

Policy options:	No change	Design as a vertical priority	Design as a horizontal priority
Risks/issues	*Missed chance of cooperation*	*Financial and human resources*	*Uneven readiness per topic*
Benefits/ opportunities	*Synergies with Smart Specialisation Strategy*	*Fastened pace and improved performance*	*Capacity building and policy learning*
Instruments to leverage	*Own funds, Interreg 2027 ESIF regional operational programmes*	*Same*	*Same*
Scenario by 2027	*Low/unequal take up rates of design*	*Intra-regional disparities possibly lowered*	*Harmonized approach to innovation per topic*

Little difference would make the decision to move the core of policy initiatives to the Regional level. In case of 'no change', we would expect to see low and unequal take up rates of design again until 2027. In case of vertical priority setting, the issue of financial and human resources could be more binding, but the intra-regional disparities are likely to be lowered (e.g. between cities of a same region). Moreover, at least in case of horizontal prioritisation, leveraging ESF resources and the growing experience of policy harmonisation would lead to an increased policy capacity and quality.

At City level

Policy options:	No change	Design as a vertical priority	Design as a horizontal priority
Risks/issues	*Missed opportunities*	*Critical mass of resources*	*Low level of readiness*
Benefits/ opportunities	*No benefits*	*Design as infrastructure*	*Capacity building and policy learning*
Instruments to leverage	*No formal action*	*Own funds, ESIF, private resources*	*Same*
Scenario by 2027	*No value created*	*Synergies with Smart City plans*	*Improved policy making*

However, the City level is where most impacts are foreseen, depending on the future course of actions, at least because no particular measures or initiatives characterise the as-is situation. In case of vertical priority setting, evidently the need for a critical mass of (human and financial) resources would be even more binding than in the case of regional policy. On the other hand, the benefits would be considerable, both in terms of gains from 'design as infrastructure' and possible synergies with Smart City plans and programmes. In case of horizontal prioritization, the challenge would be how to reconcile this ambitious goals with the probably low level of readiness that most City departments (and areas) would denote, at least initially. Then however with the progress of time and action, the benefits would accrue, both in terms of capacity building and policy learning, and ultimately improved policy making.

Conclusion and way forward

Ultimately, this Green Paper highlights the need to increase institutional awareness of transition dynamics and mechanisms, particularly in, but not limited to, the urban innovation governance (eco)systems.

In that view, the need for more design abilities stems from its unrivaled capacity to support strategy making and implementation by all involved stakeholders from the so-called “Quadruple Helix” - i.e. (especially local) governments, research institutions and academia, SMEs and larger enterprises, business associations and NGOs, not to forget individual citizens.

We call for contributions from all these and other stakeholder categories, to consolidate a EU-wide opinion in favour of a more targeted and tailored design policy, helping approach urban innovation ecosystems as complex, networked, integrated environments demanding guidance and shared resources to consolidate their roles and generate societal and economic values.

All received comments will be considered in the next edition of the Green Paper, expected by June 2020.