Design to be ready
Replanning/re-designing systems
by anticipating/foreseeing adversity

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Résumé. L'objectif de l'article est d'évaluer tout d'abord ce que signifie pour un designer de projeter en temps d'urgence, dans quelle mesure il peut transformer un problème en une opportunité qui peut être retenue dans n'importe quel scénario, en partant de l'analyse causée par l'urgence COVID-19. Deuxièmement, quels outils, compétences, modèles de pensée (Morelli *et al.* 2021) les concepteurs devraient viser afin de planifier et de prédire les différents scénarios futurs pour les systèmes "antifragiles" (Taleb 2012).

Lors de l'urgence Covid-19, de grands designers spécialisés dans différents domaines ont apporté leur expertise pour répondre aux nouveaux besoins des personnes et des systèmes.

Afin d'avancer dans cette direction, une méthode est proposée pour décrire les différentes phases, chacune d'entre elles contenant l'identification des compétences et des outils pour construire un parcours qui se déroule selon l'inspiration de la devise scoute et l'indication de trois mots pour « être prêt » : *envision*, *enable* and *enhance* (envisager, encourager et enrichir). Dans la partie centrale du document, ces trois concepts différents seront expliqués et développés.

Les contraintes et la célérité forcée de l'établissement de nouvelles règles, générées par la situation, ont obligé les concepteurs et les utilisateurs à concevoir et à apprendre rapidement. Cela a été une source de nouvelles perspectives que l'on ne pouvait ignorer en essayant de remodeler l'avenir, en préparant l'*après*.

Si ce qui est conçu en fonction de certaines règles fixes échoue dès qu'un événement imprévu se produit, cela signifie que cette solution est conçue spécifiquement pour un contexte et qu'elle doit être repensée et reconstruite plusieurs fois. Ce processus tortueux a un impact énorme en termes de temps et de coûts : il n'est pas totalement efficace. Plus précisément, cette solution est parfaite pour un environnement donné, mais n'est pas extensible à l'échelle mondiale.

Lors de l'analyse d'un système complexe, chaque acteur est interconnecté et tous les autres dépendent de leur participation. C'est pourquoi il serait contre-productif de se concentrer uniquement sur des solutions de terrain spécifiques sans tenir compte de l'effet de chaîne. Pour assurer la cohésion d'un système complet, il est essentiel de pouvoir suivre et visualiser sa complexité et ses agents.

Les designers savent comment trouver des réponses rapides aux problèmes. Cependant, concevoir à l'avance un modèle adaptable aux changements et aux défis de l'environnement semble essentiel pour gagner du temps et de l'argent. Pour la prévision et la planification, il est nécessaire d'utiliser des outils permettant de prévoir les impacts et les conséquences possibles, à long terme, du projet. Il est essentiel de prendre en compte la totalité de l'environnement et de raisonner sur les effets des décisions de conception sur celui-ci. Il arrive souvent que l'on soit passif vis-à-vis de l'environnement, que l'on s'éloigne du monde et de l'évolution des besoins, alors qu'il est important de garder le concept d'« environnement » clair et conscientisé. En particulier, ce que l'on appelle « l'environnement humain » (Maldonado 1971).

SÉMIOTIQUE PERCEPTIVE, THÉORIE DE L'ART, ESTHÉTIQUE ET COMPLEXITÉ, TOMÁS SARACENO

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Design to be ready. Replanning/re-designing systems by anticipating/foreseeing adversity

Federica DELPRINO & Giovanna TAGLIASCO
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Introduction

Observing what happened during the pandemic of COVID-19, it emerged that we are not ready to manage the different emergencies. It has been evident from two points of view: on the one hand how individually people took on the pandemic; and on the other hand how the establishment and community have reacted to the emergency.

But, what does it mean "to be ready"? Being ready is part of human practices, it is a characteristic that lies above the designer or the user. It is possible to consider the "to be ready" a design method of behaviour to deal with emergency situations. One of the roles of designers is to make the context in which we would like to act, or more generally the context in which we live, understandable.

To achieve this, the network and its different levels of connections, and the logic of how the relationships work need to be made visible. In this role the designer has to be able to design a set of tools to build behaviours or to manage already acquired skills to deal with a transforming context or system (Taddei and Tagliasco 2020).

In other words, the role of the designer is "to give shape". In this case, when an emergency occurs, when the whole system, the context in which we live, loses its original shape, the designer has to contribute to reconfigure a new shape, in which it is necessary to regenerate and improve the operational dynamics, and the underlying behaviours. In this scenario,

users should be encouraged in obtaining and cultivating the attitude of the designer to recognize, to give, to transform the shape of the system in which we are, to learn to be ready to change the shape, to prepare the shape to be changed constantly. Individually it is necessary that people have to learn to transform their behaviours to design the new shape of the context.

As a matter of fact, "being ready" or "to be prepared" is also the Scout motto, with evangelistic roots, in latin "Estote Parati". This expression invites to be prepared and attentive to every eventuality. And this concept can be carried over and re-interpreted in the present day towards bottom-up co-design, starting from a need built together, in a community-oriented approach.

Enlarging the scouting vision (mentioned as a suggestion and not a direct instance), for the designer "being ready" means preparing the infrastructure: defining a system of tools that facilitates the reading of the problem, tools to make the right action and tools for acting in uncertain context.

This act, before achieving the final solution, might precisely be the self-construction of design tools to better function and comprehend the actors and relationships in the system. To be aware of the phases and exploit them in a malleable manner as needed, filtering data from individual situations and emergencies.

The development of these concepts could help the designer and people to be ready, by making sure that you do not arrive after the emergency has started, that you are ready before the emergency begins. Design should arrive earlier than emergency, not alongside.

Considering the concept of Design as an attitude, by Làszlò Moholy-Nagy, taken later by Alice Rawsthorn (2018), is it possible to consider the "be ready" as a designer attitude but also as the ability to create the tools to activate this? This contribution intends to promote a reflection and a host of stimuli towards a design attitude that takes into account uncertainty and allows flexibility, by introducing three steps to manage and deal with contingency. For this reason, the references are based on case studies of design strategies.

1. Context

In a context of emergency, there is a need for a quick reaction and design solutions, hence the need for the response not be one step behind the emergency. Researchers and planners have to ask themselves what they have learnt during such an extreme and "unusual" period as the pandemic – which in fact contains several recurring and valuable attitudes towards emergency response. Also, they should take a perspective on what

skills, for example, were acquired during the pandemic stop that forced every worker and user to adapt to limited modes of action. Among these, there seems to be the opportunity to preserve certain habits, situations and reactions. What was acquired at several levels during the pandemic may be valuable in the idea of a "new normal".

The time frame including mostly 2020 and 2021 has been different and has taken a distinctive route in terms of timing confronted with the normal course of tool development. Compared to the time when you usually activate certain processes – and learn and put into use certain skills and tools, the pandemic and the restrictions inherently forced everybody to adapt and learn very fast in order to continue working, studying, living. This process is considered and called "tool development": how fast and how users learn new tools. The context changed rapidly and everybody had to learn to adapt, both designers and users.

In times of pandemic, people have been forced to be very quick in solving problems and many designers have had to skip the testing phase, as it is very complex and time-consuming but at the same time, in most cases, essential in the development of successful projects. Speeding up the ideation phase and the possibility of creating empathy, given the extreme urgency and a strong shared need combined with several limitations. However, considering the cases where this process has been successful constitutes a great opportunity to reduce the design-process time, which is crucial in the contemporary era, where the curve of technological progress is exponentially growing.

The awareness of what was achieved during this extraordinary phase has helped to understand how to move forward and enrich a variety of communities by introducing new knowledge and tools. Companies and designers should not miss the opportunity to continue new processes initiated during the emergency, calibrating requirements to changing scenarios.

Designers can I) ease this process systematising and visualising these data, making them understandable and accessible II) develop feasible and "antifragile" solutions, considering diversity and variations in the system.

As Maldonado says, we cannot put ourselves far from reality. This means that we must accept that certain processes cannot be driven. On many occasions one is passive concerning the environment, alienating from the world and evolving needs, whereas it is important to keep the concept of environment clear and consciously considered. In particular, the "human environment" (Maldonado 1966, 1971). Especially in defining and ideating, the emergency situation makes it even clearer that the planner cannot take charge all parts of the project.

Questioning the meaning of the "human environment" means analysing the human being in relation to the tangible structures that surround him, the artefacts, but also understanding the relationship this subset has with others and its great power to create imbalances. Maldonado (1971). It simply means that systems are made of people and what is around them. Humans move, grow, create, and so forth in different yet progressively connected fields of action. This generates a sort of chain, a cause-and-effect in which there are no single disconnected spots. Therefore, if one element disappears or gets modified, the whole system should not fail.

> Traditional modes of reasoning (i.e., deductive and inductive) that rely on proven facts and structured experience (Kolko, 2010) often produce satisfactory outcomes under stable conditions. However, they fall short of addressing the indeterminacy of wicked problems which require the creation of new knowledge and insight that can be implemented into creative and innovative solutions, as the examples above show. (Cankurtaran and Beverland 2020: 257).

Indeed, systems and scenarios very rarely rely on fixed and stable conditions; instead, they are susceptible to change and subject to instability. When one designs to improve the quality of life, to provide for instance new useful and expendable objects, experiences and services for the community and different kinds of needs, one goes towards change, not the other way around. Therefore, considering that in terms of innovation itself there should be the ability of adapting regardless of uncertainty. Eckert (2017). By definition the design cannot consider stable parameters. Uncertainty is an intrinsic feature of any system; in the latter, designers could still protect both people's health and sources of distraction and entertainment, thus preserving the continuity of services regardless of the assumptions and historical period, to which they should be able to permeate.

2. Methods

What can designers do to activate the "be ready"? Three main phrases were highlighted from the tagline, each of which was attributed to a specific concept developed in parallel and included in the design thinking phases: envision, enable and enhance.

The choice of these three words is very significant to make the "be ready" model concrete, because these words synthesise a good way to deal with the emergency. The first word chosen is "envision" because it includes different meanings such as: visualise, predict or provide and

imagine; the second, "enable", refers to the definition of the conditions to make possible what will happen, and/or to make the users able to do the suitable action; the third word, "enhance", recalls its intrinsic meaning of both "elevating" (literally and figuratively) and increasing the value of something, adding and relating key elements and thus giving the final push to take the project to a more deemed level.
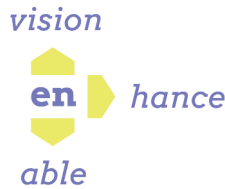

Fig.1: Representation of the three word: envision, enable, enhance.
Envision, enhance and enable phases permeate towards all the steps of
the design process and alongside external factors

As with any design process, the method involves different steps. Each step is about what kind of action can be activated from each of the three words. In particular, the choice and analysis of these words describe the users' skills and capabilities as ways of being (a kind of *forma mentis*) that we can consider as tools to act in various phases according to needs and possibly emergency.

As a design tool, taking into account design thinking like the Standford model (Stanford's d.school 2015) and putting it alongside the emergency period, a parameter appears that could be useful in re-evaluating all the stages of design thinking from a different perspective: time.

Considering these kinds of steps after the emergency, this contribution investigates the time spent on each step. Fast problem solving and fast prototyping are introduced in the emergency: the urgent need to arrive at solutions and prototypes quickly.

By introducing the parameter of awareness, the designer can realise that what is usable is simply defined by majorities and, consequently, it is the designer who decides who to include in the system. On the other hand, by analysing the innovation brought by the pandemic and visualising the system, new scenarios can be imagined. The key step to consider, through this process, is to imagine both positive and negative scenarios.

Designers will also provide solutions by assuming and simulating breaks in the infrastructure and verifying the possible impacts of the proposed solutions.
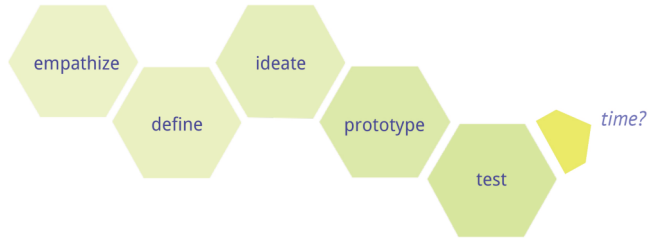

Fig. 2 : System visualisation of Stanford d.school model of design thinking phases,
with the introduction of a commentary by the authors on "time" :
if an element is removed or damaged, the stability of the entire system is in jeopardy

2.1 Envision

The first action that will be explained is *envision*. The designer should *envision* a new scenario, after having analysed the different contexts, for example, what has emerged as truly innovative during the lockdown. So, to comprehend which skills people acquired and developed as potentially useful to create a new future perspective. Lockdown periods in 2020 showed how much the infrastructure has been damaged and put at risk by the lack of some elements. Many companies have suffered irreparable damages. Their systems were so strictly connected to the world as it was that they could not bear huge changes. Despite a first difficult period, many institutions managed to acquire in their system new tools that guaranteed the continuity of their services.

This is another reason to implement the multidisciplinary approach: the designers have to work with economists and other professionals from different fields to manage the different parameters to plan successful and flexible systems and services. Lots of projects nowadays develop as services supporting other professionals. It underlines how changing a single ring modifies the whole the chain. The activities that were formally done outside the home have suddenly been funnelled into activities meant for the home and accomplished solely with the tools available in an individual's home or room.
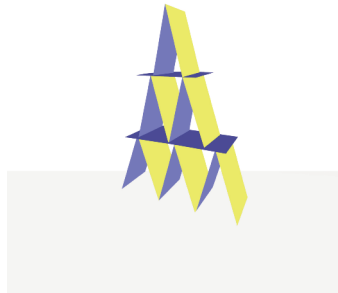
Fig.3 : Representation of the fragility of the system displayed through a house of cards:
if one element is removed or damaged, the stability of the entire system is in jeopardy

Focusing just on field-specific solutions, without taking in consideration the chain effect, would be counter-productive. People need to be aware of the whole system and tools. Therefore, it is important to take action in a design-driven way to help people visualise the systems they belong to, to understand their specific skills but also what the network of professionals consists of, the existence of other linked sectors, etc. In line with the envision concept, this is proposed as the capability "vision building" described by Morelli *et al.* :

> Vision building, which is the ability to model and visualise solutions into coherent representations of possible futures. Such visualisations include the representation of interactions among the actors, systemic maps and representations of business opportunities. (Morelli *et al.* 2020: 47)

This process can be exemplified by a project commissioned by the PACA region (Provence-Alpes-Côte d'Azur) to the students attending the Master *Design Innovation Societé 1* of the University of Nîmes. The goal was to find a solution to inform students, trainees and families about the diverse world of work and training. Besides designing an accessible platform for a young target, it was decided to design something to push them to be curious and stimulated towards their future profession. A map has been created to visualise the links between different jobs according to their area of relevance, such as food, health, tourism, etc., in order to illustrate the variety and complexity of occupations[1]. Finally, another level of representation made it possible to see the compulsory abilities to fulfil a specific job.

The map shows a useful base to reflect on the interconnections of socio-economic systems. It indeed highlights the need to illustrate each single job not just according to their singularities in terms of specific features, the training path, the skills required, but mainly considering the link between them, as parts of bigger systems. The decision to illustrate the hotspots as contact points between different professions was born with the intent to draw the complex present reality, which requires multidisciplinary teams. Since the general infrastructure involves a variety of sectors, people from different fields are involved, collaborating and exchanging their knowledge to make the system work and grow proportionally. It is possible to design new multi-level maps that can imagine and include further steps meant to visualise the whole system and the different interconnections in work places and between job tasks. These visualisations help to examine the system in its complexity and find the most suitable process, clarifying that each actor of a system is interconnected to all the others. It is fundamental to examine the system in its complexity and, possibly, in its entirety, finding the most suitable process.

2.2 Enable

The second action that will be explained is: *enable*. In his role, the designer can, on the one hand, act to create favourable conditions and facilitate processes so a project can happen, on the other hand, they create specific "tools" to make people act in a direction that they somehow already planned.

To find strategies enabling people to deal with emergencies, it is possible to follow two directions: one is to take into account the Design Thinking Model, a typical approach for the mindset methodology; the other is to design different tools, as physical artefacts, that help users solving problems.

This mindset is likely to create the conditions to preserve the user's freedom of action and adaptability even when faced with the generation of different situations and contingencies; otherwise, one would find oneself designing very specific tools for limited situations and these would only be useful in those cases without being very versatile.

Primarily, Design Thinking is a systematisation of a whole set of tools to enable people to put design approaches into practice. Tim Brown, Executive Chair of Ideo, suggests indeed to "[...] put these tools into the hands of people who may have never thought of themselves as designers and apply them to a vastly greater range of problems" (Brown 2009: 4).

If we consider the "be ready" as a design challenge, the Design Thinking, as it is used in different areas of interest, could be a resolving strategy for the challenge. From another point of view, if we consider the Design Thinking as a set of design tools, it could inspire us to create a kit of different tools properly designed to make people and environments ready for emergencies.

Differently, below, an example of an object taken in analysis as a tool to make people do something, in this case to create a relationship: Franco Raggi's "binding shoes" (Scarpe Vincolanti, cf. *fig. 4*). Those artefacts are physical and apparently dysfunctional tools that have a motor and a drive that strongly create relationships. The first Global Tools seminar in 1975 has produced objects with a provocative and reflective background, primarily linking people through their bodies. The constraint, in the case of these ceramic shoes placed at a close and well-determined distance, is exemplified and thus enlights the constriction that a certain type of design can create, stuck on the certainties of a defined situation. It is thus clear how the tools that come from design – but also within the framework of the design phases themselves – can facilitate but at the same time put up barriers, obstacles and constraints. In this case, instead of enabling users, they lead to disable the possibility of growth and strength of the system and therefore of the project.

Fig. 4: "Scarpe Vincolanti", Franco Raggi, Albissola Marina (SV), 2019,
ph. Federica Delprino – Omar Tonella

Each tool can therefore be included by considering the process itself, and all tools by considering the relational part they create. They initiate processes that are themselves tools.

While thinking over the tools that can be used by designers, it arises that they are both processes and artefacts (digital or physical instruments),

and therefore practices or objects working on people and enable them to act. Both at the same time activate social and spatial relationships.

Once awareness of the tools available has been reached, tools which can be objects and processes in their activation, coordination and implementation, it is essential to take into account not only the time relating to the emergency in all phases of the project, but also the relationship between the awareness of the variety of elements in the system and the reference scenario (cf. *fig.* 5). This step should find a real moment to be developed between empathisation, definition and therefore ideation of the project. The reason for this is that without a visualisation of the ecosystem in which the project is to be inserted, it is difficult to plan effectively, especially in a time of emergency when the time factor is even more invasive and incisive.

The *enable* phase is effective when you really have a clear perspective on the system in your hands as a designer; then you can make the user participate and, on both sides, go towards the goal of being able to know what to do and be willing to do it.
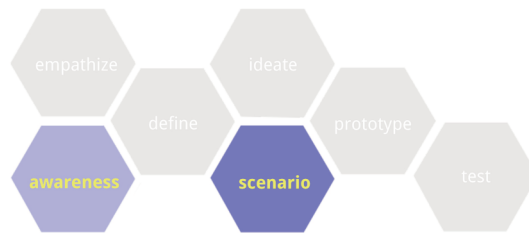

Fig. 5: Awareness and scenario are incorporated and set
as structured phases between the first designing steps
(implementation from Stanford d.school model)

Another example of enablement is the approach of self-design, already pioneered by Mari in 1974, which is now becoming increasingly prevalent in several workshops (Marco Senzastudio, Orizzontale).

Enzo Mari argued that: "The only way I know of, in that it belongs to my reality, is that it becomes possible only when critical thinking is based on the practices work. The way should therefore be to involve the user of a consumer item in its design and creation" (Mari 1974: 49).

A primary solution for emergencies is in fact the transmission of skills and the provision of means for individuals to create solutions on their own. In this case, the role of the designer is to design tools to provide the expertise and to somehow educate users to find solutions which can then become an element for the community.

A flexible approach in the perspective of both everyday life and emergencies is to make people regain certain skills and competences lost over time. It is also crucial to understand the value of certain processes, and, furthermore, to keep certain skills and competences trained over time.

In this perspective, different fields of design can be brought together, validating and supporting the systemic point of view already mentioned that sees each actor as fundamental to hold up the whole chain, whereby each one offers his or her skills and must offer tools to support the others. The emergency is supported more effectively if the project arises from a stable, multidisciplinary network, which provides each other with ways to close any gaps, which acts not only in the final part but in all steps of the design process.

An example of this is the collaboration that took place during the LURT2021 workshop, in which workshops on self-building, service design, and community building were coordinated in support of that of the civic building site, with the aim of creating an effective second floor of a building confiscated from the mafia in Riesi, and to do so not only at the structural level but also at the level of services and community support, starting from the needs and requirements of the inhabitants themselves, who were also involved in the conceptual and design process. The *Human Regeneration Workshop*, as part of the LURT 2021 programme curated by the Coltivatori di bellezza association and promoted by the Servizio Cristiano provided for the summer school:

1. *Civico Civico* workshop by studio Orizzontale in collaboration with Flora La Sita in which the building site is no longer an exclusive place for insiders, but becomes a moment of choral co-creation and relationship;

2. Self-construction workshop with Marco Terranova of Senzastudio in which rooms were self-built and designed to observe, read, make contact and communicate about the territory;

3. Community Building workshop with Elisabetta Caruso and Bitmup worked on the relationships and needs that emerged from the Riesi community, welcoming multidisciplinary skills to accommodate needs and build community maps;

4. Service Design with Maria Cristina Lavazza and Luisa Carrada work-
   shop worked on the development of service networks for the commu-
   nity itself.

Fig. 6 : Some photos of project phases and tools implemented during LURT2021 workshops,
Riesi (CT), 2021, ph. Federica Delprino

Here, co-design is conceived as a process to engage in strategies to be
ready, starting from the relationship with one's own body and environ-
ment ; hence an awareness towards oneself, one's surroundings, and
one's action. The same approach of co-designing the city is able to build
a single interconnected reality dependent on the needs of the users,
(Morozzo Della Rocca *et al.* 2021) which was fundamental when, due to
the pandemic, cities changed their dynamics ; in this case physical solu-
tions helped to preserve an identity. In this view, self-design and co-
design can start from an individual scale and then create a systemic
chain that gives life and support to cities, taking into account analogue
or digital solutions, face to face or remote relationships, even blended
ones.

2.3 Enhance

The third action, the *enhance* phase, entails making the project strong
and active, extremely responsive to setbacks and the unpredictable
brought about by the human, contextual, systemic factor involved. In
order to make this possible, it seems important to adjust the systems
themselves on the basis of prior experience: combining new incomes, iso-
lating the traits allegedly positive for all the actors of the system, limiting

and avoiding a further negative impact. Problems and failures are not always a negative factor for the system if they are treated as case studies and as factors that can redress the balance.

"Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty" (Taleb 2014: 3). The very structures put to the test by the pandemic can find in new digital solutions, new tools, new connections and practices effective solutions for the future, capable of sustaining them economically and increasing their value.

It might be tempting to consider at the beginning of the design process people who are already prepared: robust, active, participative. However, during the design and development cycle it is good to take uncertainty into the equation and use it to grow and implement our projects, systems and surroundings. It is a feature that also seems natural, bearing in mind that nature tends to the "autopoiesis: the capacity to self-regulate, to adapt to disturbances, to operate as a network within boundaries, to create networks of networks within ecosystems" (Pauli 2017: 4). Perfection and reliance on extremely fixed and predictable factors, on the other hand, go beyond the normal course of things; therefore it cannot be a characteristic and goal of design planning.

Whether we take into account "antifragile" or "autopoietic" solutions, on the basis of resilience but taking it a step further, the strategy seems in any case to look for solutions based on existing patterns. An approach that does not adhere to just learning a specific way to solve problems, but which profits from the awareness of multiple approaches.

The proposal to "be ready" can be approached by Daniela Piscitelli's concept of "permanent emergency". The author in her book: *First things First* underlines that the emergency, considering the Treccani definition, is something that emerges instead of something unexpected. Let's think about designing for a fragile contemporaneity. It is necessary to underline that this status should not raise anxiety and concern about the future, but recognise it as the fascination of complexity. It could be possible to live as if the people are always in an emergency, always under risk, or we can just embrace that contexts evolve and design according to this awareness.

Conclusions

It therefore seems natural to ask what's next. It seems inconvenient to design just for a well-known situation: the parameters change rapidly

both in a pandemic but also just considering the course of innovation itself. In any case, contingency or not, a specific design for a very definite situation seems not to be the ideal, economically and humanly sustainable solution.

Taking into account all those parameters which may change rapidly, a need for the following emerges clearly: I) setting a new standard of skills, based on new habits, technologies and opportunities; II) taking into consideration the whole chain, monitoring the whole of it simultaneously to keep it stable while implementing it.

In exceptional situations, innovations inputs frequently emerge. Designers have the chance and the abilities to integrate them in the evolving process. Eventually, designing to be ready essentially means taking exceptions into account. It is very important that this self-awareness causes a change of approach from the very first phase of embracing a project. It should indeed be clear before starting the design process. One of the main goals is taking the pandemic period as a chance to re-think design processes; to investigate the most suitable approach to face design projects embracing the unexpected and the unforeseen, before going back to start projects in the post-pandemic.

Anticipating and foreseeing adversity means to be aware of contingencies and complexity. Designers should not have a "god complex", because it is impossible to predict and prevent everything, but they can choose realistically and start from the data and information available, set and ready for scalability. When designers do not have a lot of time to plan, they can always have empathy.

Since uncertainty joins the design process as a matter of fact and alongside as an opportunity, to *envision*, *enhance* and *enable* means to design by permeating all external factors; creating tools and solutions as needed; to provide them to users by educating and empowering them.

Note

1   Cf. "Visualization of the job connection in the C.O.S.M.O.S project", Copyright International Labour Organization. Team: R. Boissel, G. Tagliasco, P. Baroni, M. Cervantès, Master "Design Innovation Societé 1", Université de Nimes (FR), 2020/2021, Prof. M. Deni, A. Triolaire, Y. Voglaire.

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