5 challenges by Anne Asensio - Article for VDID

Victor Papanek, an early advocate of design's social and ecological responsibilities, says in his book Green Imperative that
"These dangerous times for Earth call not just for passion, imagination, intelligence and hard work, but – more profoundly – a sense of optimism that is willing to act without a full understanding."

While science relies on facts and scientific prediction, design relies also on optimism and faith in the effect of small individual actions on the global picture.

I, for one, believe that Design is imperative in finding solutions that enable us, humans, to co-exist in harmony with nature and the biosphere.

The COVID-19 pandemic reminds our entire humanity that our modernity has never really released us from the biological and earthly laws of our condition. The myth of a techno-centered superiority has been exposed, and now we are facing immense vulnerability, intensely human in our material space, where we will have to demonstrate a great capacity for innovation and adaptation.

COVID-19 precipitates change and incites us to refocus on common things that bind us – to educate, nourish, protect and care.

Before the virus, we knew the world was becoming more unsustainable. We anticipated an environmental crisis, but without a sense of immediate urgency.

This crisis is making something extraordinary happen. It reverse our agendas and in a profound way changes our values.

When facing the urgency and the unpredictable, when the process is not yet informed from previous (or maybe forgotten) actions, when facing what is happening in the moment, when models fail and process management does not respond, …The responsibility moves down and relies on the team – the human – working the process, making things happens

In the reframing aspect of our lives in a post COVID world, the focus must be human – on people – much more than building a technical capability.

Lock-downs and social distancing can teach us about the coming world. Consider that our present experiences are imposing **a reversal of known values:** the Virtual (online meetings, online events) has become our sensory view of daily life and the Real (with its physical and sensory qualities) are a remembered extension.

The essence of the new real is going to be different, and must include something that until now we have put in the shadows – peoples' sense-able incarnation.

I work at DASSAULT SYSTEMS and lead the design studio

We see ourselves as catalyst and enabler of 21st century Industry Renaissance. Our **3D**EXPERIENCE® platform offers sophisticated technologies and solutions for multi-disciplinary design, by combining science-based virtual experiences and real world operations. The value of virtual twins enables companies to better understand and make decisions that deliver on the sustainable purpose.

In the Studio, we research, co create, experiment, inform, mediate and connect technologies and human wherever there are gaps or disconnects – how the human thinks and acts in the situation, but also feels and reflects the situation. A design approach contributes to a re-appropriation in the relationship.

I would like to share 5 challenges that designers will have to address

1 Complexity

2 Ubiquity

3 Sensible sustainability

4 Design & Science

5 Workforce of the future

1 **COMPLEXITY**

Design and the world have changed dramatically.

Everything is more complex.

A huge transformation is happening in how we live, work and play, and interact with our environment.

More flux and artificial and more closure and territorial at the same time

We used to design products; now we design experiences. Experiential design is the new focus as we think of users first—about the human, the citizens, the patients.

Accept and adopt complexity not a race but a dance instead.

No opposition but composition, taking challenges holistically and systemically.

There is a complete shift happening in design, enabled by the ability to see a broader picture, combining cyber and cognitive design.

To promote human emotional interaction and systemic design.

The new real is a mix of digital, physical and (especially) the human. It is a completely new hybridization. With V + R, we were thinking of each as a relevant and distinct entity we believe today that the Virtual and Real may be simultaneous.

Multiple systems and technologies can be embedded into even simple products that used to be designed linearly in a simple way in silos of knowledge.

Now it’s urgent to converge the expertise and knowledge in contributive open design spaces, taking into account product, people and planet in a sustainable holistic experience.

Designers have to tackle complexity with new means, knowledge and know how.

2 UBIQUITY

The possibilities of what we can envision to sustain, repair and regenerate our world, as we harmonize product, nature and life, are in the convergence of knowledge and know-how.

This implies that people, and designers in particular, must adapt their life and business strategies by orienting it towards **more flexibility, adaptability, fluidity, lightness and openness to change.**

In order to better understand the role of these engaged designers and researchers, it is necessary to **redefine the notion of project.**

Today, the designer is a creator, or better, **a co-creator of these relational systems** and tools within complex ecosystems where new forms of collaboration can develop and prosper, generating models that go far beyond the people directly involved and improving social cohesion as a whole. Recognizing and respect the complex and dynamic relationships and interdependences, both human and non-human, within an ecosystem. Reconsidering and reinventing conceptual reference points and concrete action frameworks makes it necessary to examine more open, fluid and dynamic social structures. Driven by the human, the platform draws us into a very different environment of sense-able and sustainable Design that includes the essential complement of accessing the emotional state along with engineering to create a sustainable design practitioner.

3 SUSTAINABILITY

Design is changing quickly, with the belief that a more respectful and joyous relationship with the material world can only be established by being an integral part of it.

This heightened awareness moves design from a culture of "creating in the absence of limits" to a culture of "creating in a limited world."

This change of perspective currently underway in our society calls for a profound change in our relationship to the material and immaterial worlds and concerns everyone involved in design, production and consumption.

Design is imperative in finding solutions that enable us humans to co-exist in harmony with nature and the biosphere. Creating sustainable experiences is a complex process, requiring a diversity of knowledge and expertise. Virtual worlds enable us to improve and extend the real world, addressing impacts of design initiative and finding innovation and change for positive systemic and holistic impacts.

When we talk about sustainable impact, we often refer to carbon footprint which represents the unintended negative consequences of our actions on the environment. When it is about our ecological handprint, we evaluate the things we do which create positive changes in the environment. Design should aim to rebalance our ecosystems, forming new attitudes, encouraging changing behaviors, regenerating local know-how and scientific knowledge to reinvent our habitat and explore ways to bring our mental and physical health and well-being into alignment.

We have reached a moment in human history where we must design for sustainability and the impact on society. That is easy to say, but the reality is difficult to do. How do we go beyond the design of a beautiful object to encompass the broader picture of sustainability? How do we engage with product life management, with the full holistic experience from sourcing to use, all the way to destruction?

Today’s design practice and current process are obsolete.

The convergence in design methodologies and science is a search for progress. We need solutions, but also change our behaviors. If we want to change behavior about sustainability, we need to attract people with beautiful, aesthetic, emotional experiences.

With greater knowledge of science, and a better understanding of how things work, design can emulate certain properties and efficiencies found in nature, physics and materials. To guide systemic approaches, structural applications generated from algorithms. For salvage and regeneration efforts, the full cycle-of- life and nature‘s processes, such as using plastics and other pollutants as a resource and new materials for creating product proposals, may be simulated with new models aimed at eradicating waste.

Avoiding waste, by converging both scientific research on alternative biomaterials and redefining available raw materials, opens up new perspectives for design. These new concepts add creative potential and diversity, transforming apparent waste materials into resources that can redefine our future habitat.

4 DESIGN AND SCIENCE

Science powers design. The combination of science and technology is accelerating creation cycles that will usher in a new era of disruptive solutions to answer today's challenges. Science and design are the necessary partners to create advantages and deliver results that make life better. The designer is enhanced by technology and scientific capacity.

Design empowered by science is mutating through an experimental dialogue with artificial intelligence (AI). Together, information (data and knowledge) and people can change the way we design. Data-driven generative design is a new shift for design. The "material" that makes up products and experiences is now increasingly virtual; so, we may consider data as a material for design.

With digitalization, we can imagine new models to test & simulate and then optimize, in a virtuous iterative process to ensure the quality of a proposal that operations will run efficiently. By creating and virtually sharing all knowledge at our disposal in real time, while being inclusive in the gathering of different mindsets and open to all contributions, we make innovation meaningful. We can reduce risk, cost, waste, and trial and error, getting it right the first time and then doing it again for further advances.

The learning from previous iterations may serve out-of-the-box scenarios, building rationality into new proposals in a convergence of practice and knowledge. Working together in the same virtual design space will prepare future contributors for the transformative vision, establishing a common road map for critical, impactful decision-making.

Creating sustainable experiences is a complex process requiring a diversity of knowledge and expertise. It is about optimizing current operations by connecting the dots between people, ideas and data inside and outside a company and society. It is also about having knowledge and expertise readily available – on demand – enabling people to work better and more efficiently.

5 WORKFORCE OF THE FUTURE

Design is an integrated discipline because it affects human experience directly — thinking, doing, experimenting and testing in recurrent iterations, without separating these activities. Industry with its search for performance and efficiency led to hyper-specialization and siloed processes designed for optimization; but these old siloed approaches to design, research and development are no longer adequate. The consequence has been a fragmented design approach, diminishing design's value by disconnecting its great holistic and systemic promise, connecting expertise to make the global, local.

Design is not a linear process. Design is at a cross-roads of inclusion, assembling the knowledge and know-how of a diverse community. If we have a design space for collaboration, it has to be an inclusive place, easily accessible, allowing the convergence of designers, scientists, engineers, researchers, public services, and people/citizens. This level of inclusivity is key— give everyone an entrepreneurial spirit, the ability to deliver design capabilities to the hands of young generations, the workforce of the future. This final trend goes far. Beyond experts in corporations and design studios, everyone can become a designer with the ability to access a platform for fostering sustainable design.

Design as a bridge translates scientific ideas and discoveries into real-world applications. It is critical to enable design to imagine breakthrough models that revolutionize how we live, work and play. Design fictions imagining sustainable and impactful scenarios constitutes the best mean to convey a « transnational journey of ideas » and cultural transfer allowing a community to shape its conscience of unity and its collectively shared knowledge. Design embraces the cross-fertilization of disciplines, of sensitive, forward-looking and crosscutting research likely to question the future of our contemporary society.

The growing demand for more personalized products, more personalized experiences, calls for increased customization to meet individual needs, while accelerating the process from idea to development to real-time production. Technology helps—a platform approach is essential. Design studios, suppliers, manufacturers, all stakeholders have to work as if they were located together.

Collaborative platforms allow us to stay connected, any time, day and night, together fostering sustainable projects The possibilities of what we can envision to sustain, to repair, to regenerate our world, as we harmonize product, nature and life, are in the convergence of knowledge and know-how.

We want to be able to call on any expertise—across disciplines as needed in a process of transdisciplinary—as the project progresses. To achieve this, we need to be able to work with expertise, with knowledge, with teams that may be around the globe, in a virtual design space.

If science is discovering the means to access the world, design creates the living conditions – our preferences – of how we inhabit the world. With design, we elevate and materialize our priorities and ultimately choose the future we want for ourselves and our planet.

By Anne Asensio, Vice-President Design Experience & Innovation at Dassault Systèmes and Board Member World Design Organisation

The **3D**EXPERIENCE Platform Catalyst and enabler of 21st century Industry Renaissance

Virtual experience platforms are the infrastructure of the 21st century Industry Renaissance, the global transformation in the way we design, create, learn, produce and trade. Sustainability is central to Industry Renaissance and has become a modern business imperative.

Dassault Systèmes' **3D**EXPERIENCE® platform offers sophisticated technologies and solutions for multi-disciplinary design, modeling, simulation, optimization, execution, data acquisition, analysis and reporting in a guided operations management environment. By combining science-based virtual experiences and real world operations, **3D**EXPERIENCE twins enable companies to better understand and make decisions that deliver on the sustainable purpose.

The **3D**EXPERIENCE platform is the only product innovation platform that is both a system of operations (to run a business) and a business model (to transform a business). As an operational system, the platform connects people and processes across the product lifecycle, from design ideation to modelling, optimizing, simulation, manufacturing, market delivery and societal reception. As a business model, the **3D**EXPERIENCE platform transforms relationships and roles across the value network, removing intermediaries between sellers and buyers, purchasers and subcontractors, service providers and customers.