STARTUPS

DEVELOP AND LAUNCH A STANDOUT PRODUCT IN 5 STEPS

DASSAULT SYSTEMES

WHAT IS A STANDOUT PRODUCT?

> It starts with the determination not to fall into the trap of just making things different. Because when a product has been highly regarded there is often a desire from people to see it redesigned. I think one of the most important things is that you change something not to make it different but to make it better.

— Jony Ive

Former Chief Design Officer of Apple Inc.
Current Chancellor of the Royal College of Art in London

A stand out product has the power to deliver transformative human experiences that enrich lives and provide a positive global impact. However, moving from ideation to reality can be profoundly challenging.

According to a report by INC.com, 30,000 new products enter the market each year — but 95 percent of them fail. Within a year only a fifth of successful product launches survive in the marketplace.

Given the cost to create and market a new product, combined with the failure rate, being able to successfully bring a new product to market is an indisputable skill set for companies and more so for emerging, cash-strapped startups.

At the same time, the rise in purchasing power and customer savviness has increased demand for products that can improve the human experience or facilitate a more efficient business or industrial process. From Smart-Farming and Environmental Technology to Mobility and Aerospace, technological advances are changing the way the world eats, breathes and moves.

Despite the layers of complexity involved in developing a new product and getting it to market successfully, companies cannot afford to stand still. They must overcome these challenges or risk losing market share.

With the right tool set in hand, companies are developing and launching successful stand out products to support their product development process.

Let's explore the possibilities.

PART 1:
RIGHT THE FIRST TIME

Startups, emerging tech companies and multinationals are all developing game-changing products and technologies at a mind boggling rate with the fervent hope that consumers will respond.

With U.S. consumer spending forecasted to trend around 13325.00 USD Billion in 2021 and 13592.00 USD Billion in 2022, purchasing power parity is not the issue.
While good news for companies, it also poses a challenge for those struggling to keep up with the changing expectations of empowered consumers.

Consumers want limitless innovation in their products; they want their products to be complex and originative, but also easy to use. Most importantly, they want this combination in a package that offers value for money.

Product development is never a linear process. Creators may need to revise their design and prototyping stages multiple times. While standard development cycles range across industries, the product lifestyle can take years - a period long enough for technologies and customer expectations to change.

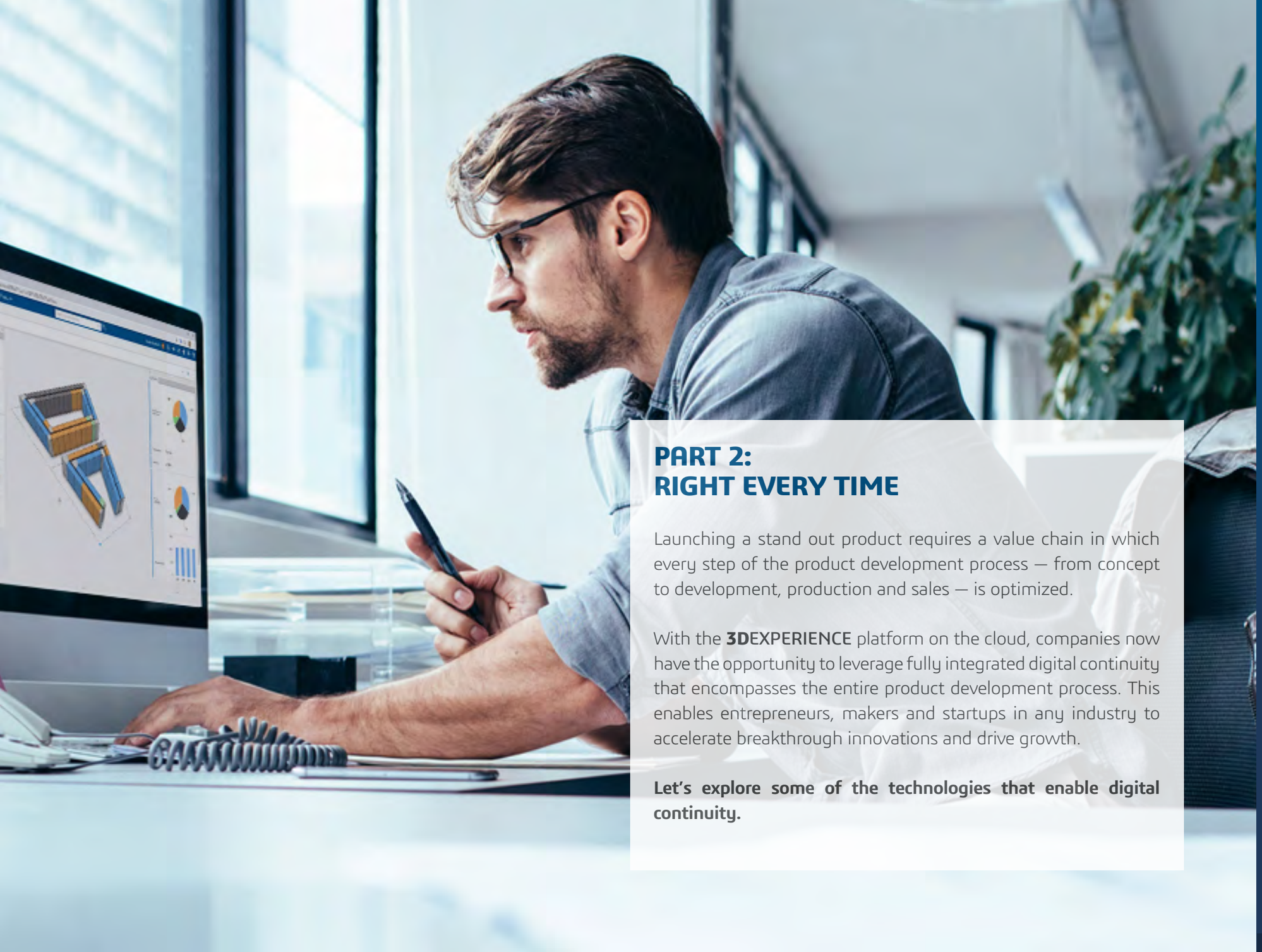
Unfortunately, product development is often lengthy and complex, where failure is essentially — and expectedly — the bulk of the product development cycle.

“Many physical prototypes are thrown into the garbage at the end of the day. I think there will come a point where the entire prototyping process — simulation, modeling, testing — is digitized.

Nothing will be performed physically. Not only will this save companies a lot of time and money, it will also have a positive impact on the planet.”

- Bastien Hillen
Worldwide Business Development
and Consulting Senior Director Dassault Systèmes

Learn how one EV Startup did just that — and satisfied consumers' desire for innovative and environmentally safe cars.

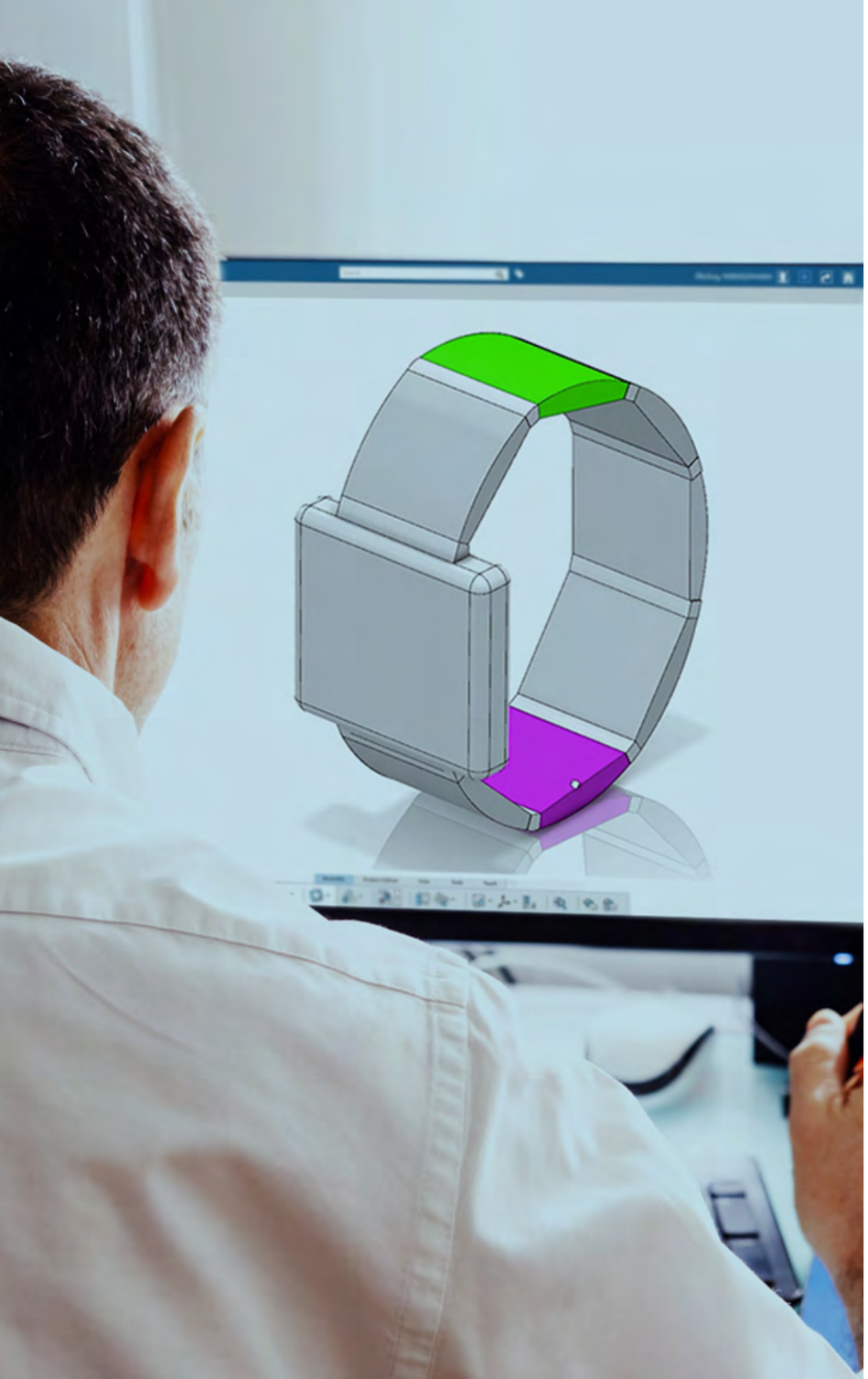


PART 2:
RIGHT EVERY TIME

Launching a stand out product requires a value chain in which every step of the product development process — from concept to development, production and sales — is optimized.

With the **3D**EXPERIENCE platform on the cloud, companies now have the opportunity to leverage fully integrated digital continuity that encompasses the entire product development process. This enables entrepreneurs, makers and startups in any industry to accelerate breakthrough innovations and drive growth.

Let's explore some of the technologies that enable digital continuity.



3D Design

Stakeholders can now expand the parameters of a simulation when designing a virtual model within a 3D workspace. Instead of being limited by the parameters of a physical product simulation — stresses between joints, weight displacement and so on — designers can now bring system behaviors and even real-world customer input into the innovation loop.

By involving these parameters at the design stage, design iterations can be made quickly and cost-effectively. Modifications to the design can also be as granular or as expansive as needed without incurring additional development time and costs.

Digital continuity allows changes to be viewed and adapted by the entire value network in the same virtual workspace. An added benefit is the opportunity to research new design options that can potentially improve the functionality and efficiency of the product. **We will explore this aspect in more detail later in this ebook.**

Virtual Simulation

Traditional simulation workflows require manual transfer of 2D design into 3D simulation. This adds additional time to the development process.

If the simulation requires a new update or additional permissions before changes can be implemented, designers would have to repetitively and manually key in the changes, thereby restarting the process.

For instance, if a company needed to accurately measure the decibels generated by the motor of an aircraft engine, the development team would need to create a physical jet engine and test in remote areas outdoors and indoors in a test facility. Any changes to the design would require a trip back to the drawing board — a costly and time-consuming affair.

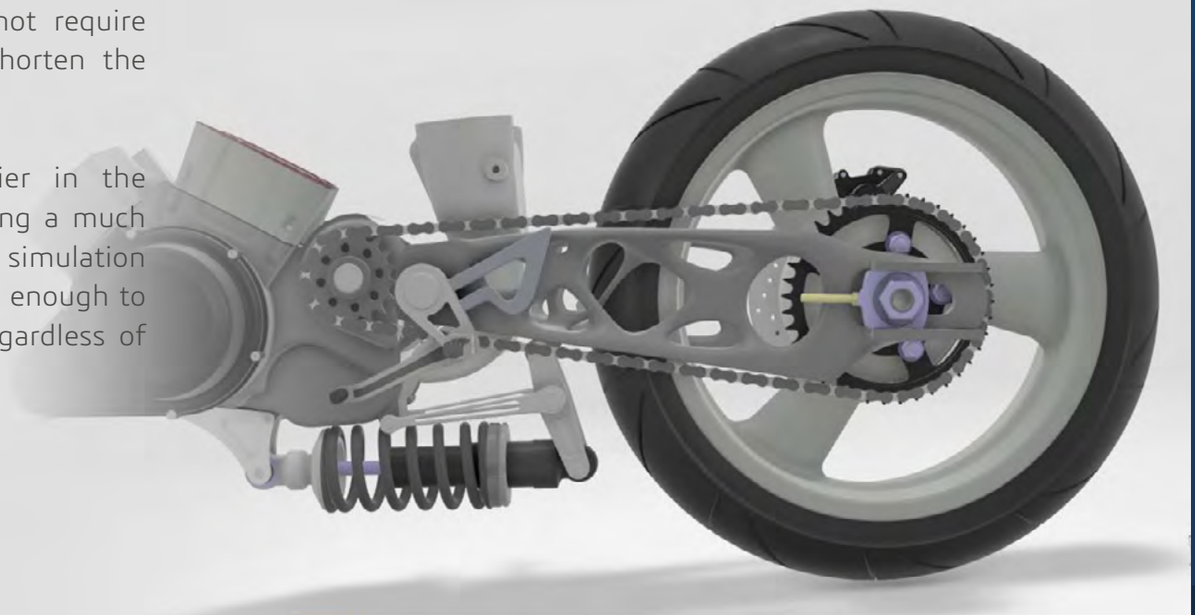
Now that we can expand the parameters of a simulation by combining physical product simulation with system behaviors and external data, product development does not require detailed physical prototype models. This can shorten the production cycle by up to 50 percent.

Simulations can now be utilized much earlier in the development process to validate concepts, creating a much smoother integration between the design and simulation stages. The solution is also powerful and intuitive enough to provide control and functionality to the user, regardless of their skill level.

Additive Manufacturing

Additive manufacturing has evolved since its introduction more than 20 years ago. Today, it is a mix of design, simulation and manufacturing. Additive manufacturing defines and optimizes the shape and design of the product, while taking into account relevant specifications and physical constraints. The user can now input all the specifications and physical constraints of the product into the design itself, and let the solution optimize the initial designs and input data.

From here, the user can accurately produce physical prototypes with 3D printing — a much faster and less costly way to test designs. An additional benefit of 3D printing is the freedom to generate complex, organic shapes that cannot be achieved through conventional machining.



Virtual Twin

Creating a virtual twin of your product is the key to unlocking the full potential of an integrated digital business platform.

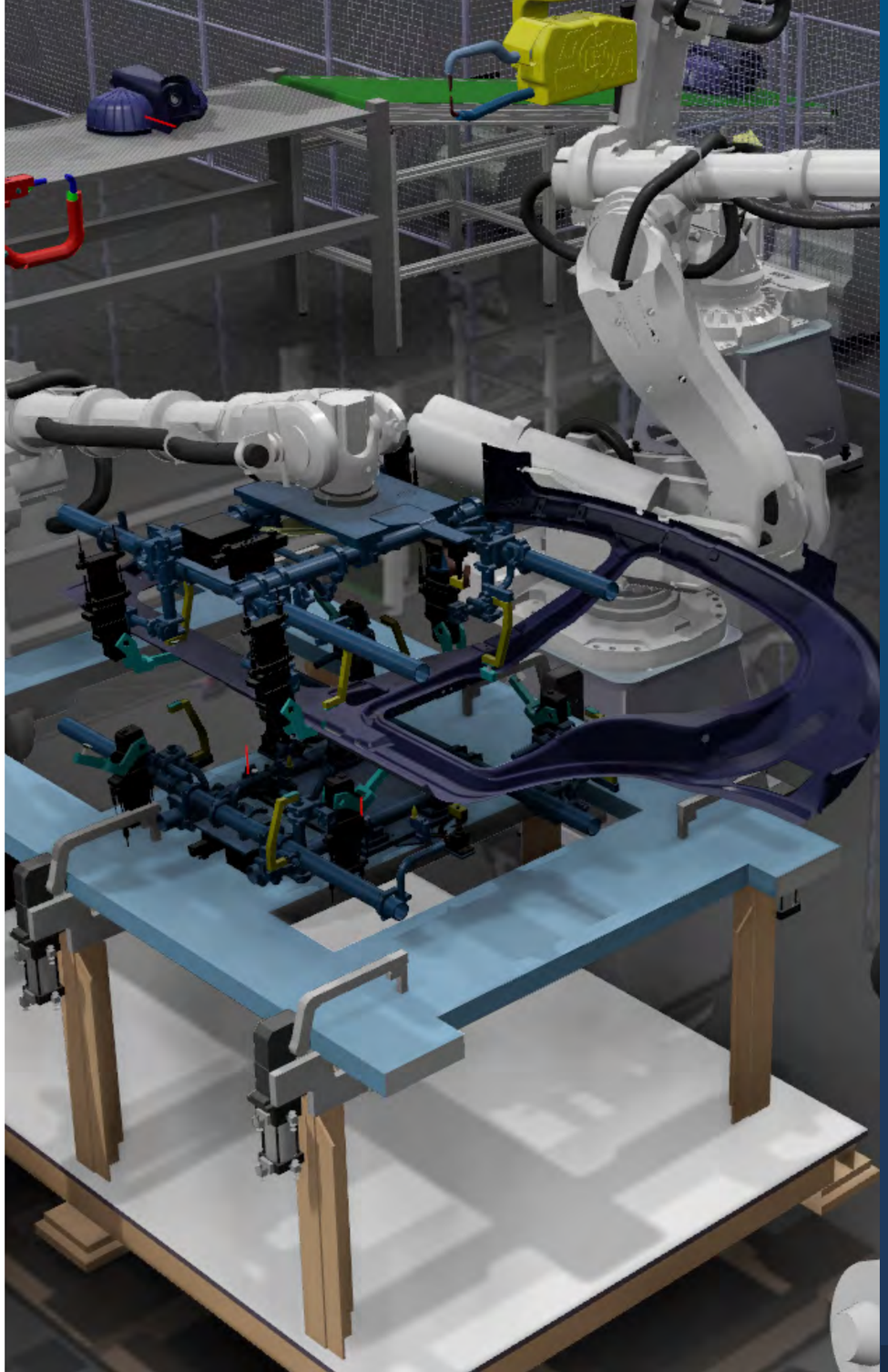
It is more than just working in a digital environment with all your stakeholders; it connects companies with a variety of real-world data inputs, such as information from sensors and IoT devices, to create a digital representation of a real product.

This creates a continuous circle of innovation and value creation that's based on real-world activities. Iteration and experimentation can take place more quickly. All variables can be modified, and the consequences of changes can be viewed in real time.

This ultimately results in a higher quality digital model that translates to a more mature and fully realized physical product that better fulfills customer demand.

With this comes real-world feedback that can be fed back into the digital business platform, serving as another data input that provides a richer feedback loop of innovation and value creation.

Digital continuity has helped an Israeli Aviation company design and build an electric airplane that is cost-effective and environmentally friendly on an aggressive time schedule. Read more about them here.



PART 3:
RIGHT ON TIME

Whether it’s an enhancement on an existing product or a brand new one, there is always a cost to create, develop and launch a new product to market.

The potential return on investment will affect the cost and scope of the change. If the overall result is a development process that's faster, cheaper and more innovative, your product is developed with a higher quality — albeit with a higher price tag.

To deliver truly amazing products and experiences, the entire product innovation process — from ideation to final delivery, usage, support and beyond — must take place in an integrated digital environment.

It's no longer about a linear start-to-finish product development process; the secret ingredient is a continuous cycle of innovation and value creation that brings all disciplines together into a collaborative workspace.

The **3D**EXPERIENCE platform on the cloud enables this by creating a single source of truth from ideation to final delivery. All departments have access to the same knowledge set using a common data model. Rich insights across the value network can be captured and verified digitally before actual production commences.

This scenario illustrates the new 'business as usual' for a car manufacturer on the **3D**EXPERIENCE platform on the cloud:
- Automotive designers create a customized chassis according to specifications.
- Engineers subject the 3D model of the chassis to the full suite of product tests.
- Changes are propagated to the engineers, designers and simulators in real time, and modifications can be made quickly.
- This iteration loop occurs until the final model satisfies all requirements and is validated by all stakeholders.

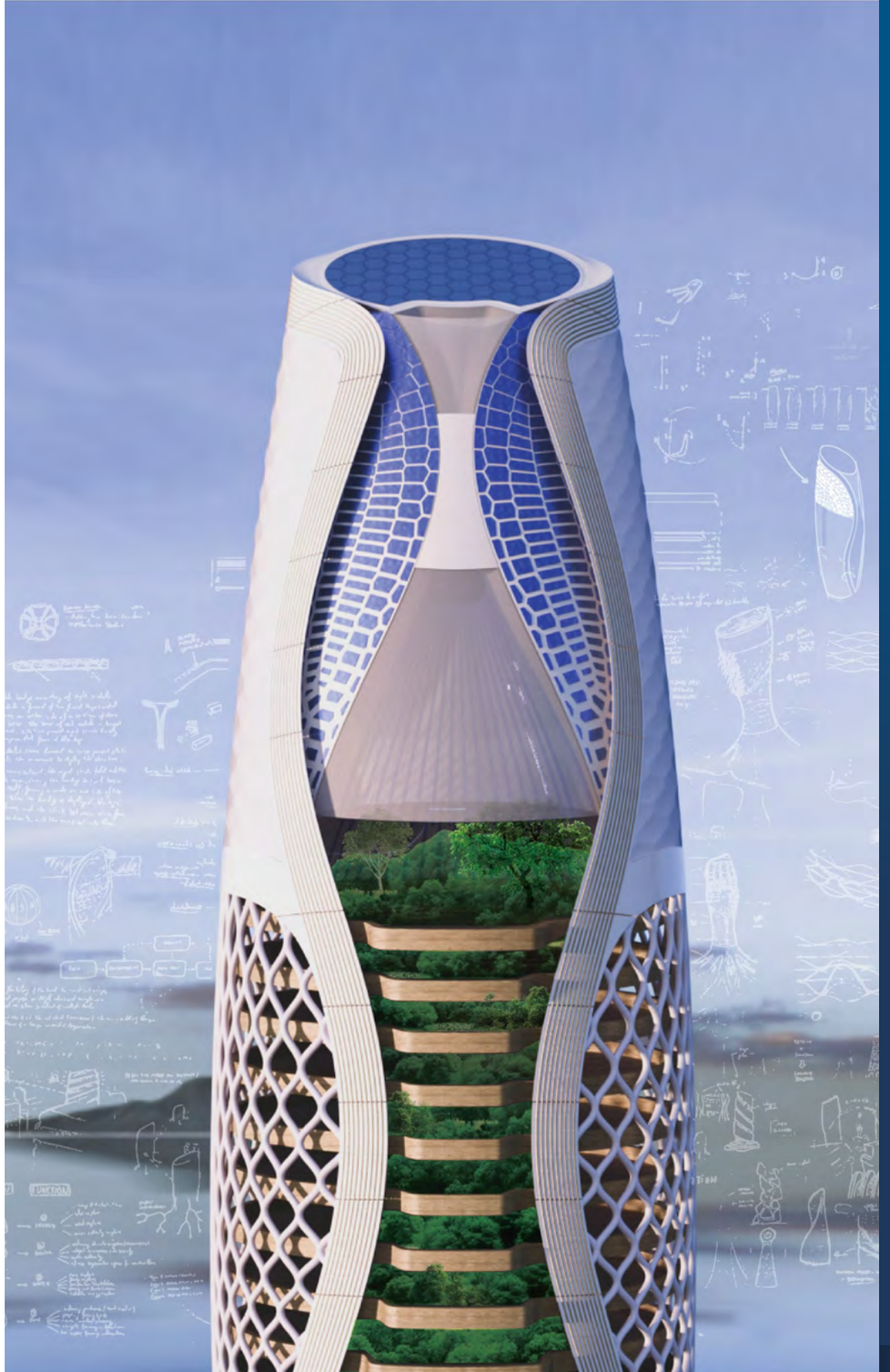
PART 4:
RIGHT FOR THE PLANET

In the past, sustainability was never a part of the conversation when it came to product development. However, consumer demand for more sustainable products and experiences has led companies to begin integrating sustainability into the development lifecycle.

A study from Centrica Business Solutions showed that between 2017 and 2019 "being socially and environmentally responsible" jumped from sixth to third place in terms of priorities for companies surveyed in Europe and North America.

But, sustainability is more than just the search for new materials. Companies across all industries must consider sustainability more holistically.

How can you make your stand out product sustainable?
Let's have a look.



Modularity in Design

With modularity, companies benefit from production scale by reducing the number of product variants, complexity and associated costs along the value chain. This also allows companies to offer more personalization and customization to consumers without incurring additional expenses.

An additional benefit of modularity comes at the end of the product life cycle. A modular product can be disassembled into smaller discrete parts which can then be recycled or refurbished. By implementing this design methodology into the product development process itself, companies can extend resource utilization and reduce waste, energy requirements and other environmental loads.

Modularity also allows consumers to enhance their original purchases or give them additional value. Companies can produce new modules that replace existing modules on the original product. This not only offers more choice over time, but also nurtures a 'reuse and upgrade' mindset.

Virtual prototyping

The prototyping process is becoming digitalized, and this is good news for the environment.

A fully modeled virtual prototype will allow designers to cut down on the need for physical prototyping and validation. They can also research new and potentially more efficient product designs that reduce resource use without compromising on the product's functionality.

Special thanks to our experts **Bastien HILLEN**, Senior Director for Business Consulting at Dassault Systèmes, and **Jean-Luc LE CONG THUAN**, Business Consultant Director at Dassault Systèmes.

THE RIGHT DEVELOPMENT PLATFORM

The **3D**EXPERIENCE platform on the cloud is the best choice to launch your stand out product. It enables you to determine your entire product development process from concept to development, production, consumption and beyond.

With the **3D**EXPERIENCE platform on the cloud, you have the agility to quickly execute winning decisions across your entire value network, regardless of potential shifts and disruptions in your industry.

Win the race to market with the **3D**EXPERIENCE platform on the cloud.
Learn more about how you can deliver unforgettable experiences: https://www.3ds.com/cloud/startups.

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