

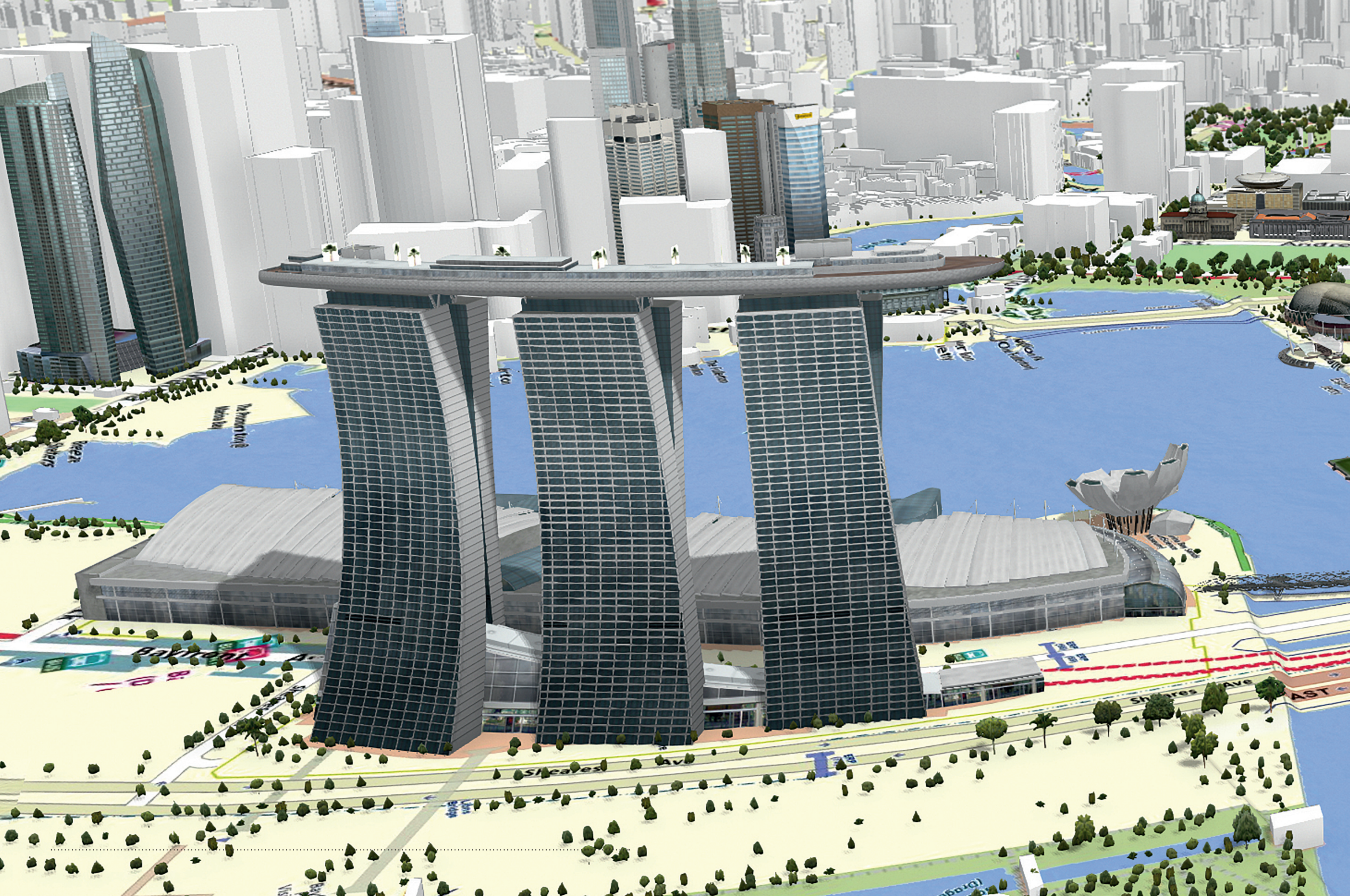
2015 3DEXPERIENCE® ANNUAL REPORT

C O R P O R A T E R E P O R T

VIRTUAL SINGAPORE
INDUSTRY OF THE FUTURE
BIOINTELLIGENCE
ADDITIVE MANUFACTURING
COP21 & SUSTAINABLE SOLUTIONS

Credits:

Aerodata, AhLamb, AKKA Technologies, Alchimik Lab (Zac Maurepas Gayeulles), Artefacto (Zac Courrouze), Atelier Buildozer, Corbis, Marcel Crozet, Dassault Systèmes, Doosan Infracore, Elixir Aircraft, Freepik, Fotolia, General Mills, Getty Images, Xavier Granet, GraphicObsession, Michelin, Mégalis Bretagne et Collectivités Territoriales Bretonnes, Seedz (ligne b) et Service de l'Information Géographique de Rennes Métropole, Service de l'Information Géographique de Rennes, Richard Silver, Solar Impulse, Olga Stefatou, PSA, Thomas Tetu, Olivier Vigerie, Meyer Werft, XtreeE, Vincent Zobler.





“IMAGINATION FINDS MORE REALITY IN WHAT IS HIDDEN THAN IN WHAT IS SHOWN.”

This quote from philosopher Gaston Bachelard guided our thinking this year. From Virtual Singapore to the additive manufacturing progress, from BioIntelligence to the fascinating journey of the “inspioneer” Bertrand Piccard, we invite you to look back on 2015, a fruitful year of events and major advances in the realization of our mission: to offer companies and individuals virtual worlds where to design sustainable innovation solutions, likely to harmonize product, nature and life. Happy reading and enjoy your trip!

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Discover the
Harmonie Project





ANTIBODY MODELING

Construction of a model to predict physical properties and optimize pH or thermal stability, and the extent of formulation development.



CASSIOPEIA CAMERA BY THE CATIA DESIGN TEAM
Social innovation and creative design project.



CATIA bleu CONCEPT CAR BY THE CATIA DESIGN TEAM
Design excellence through creativity, shape refinement,
and technological innovation.



BEYOND BOTTLE LIGHTWEIGHTING

Container shape and performance optimization
by Plastic Technologies Inc. with SIMULIA Abaqus.

2015, A SUCCESSFUL COMMENCEMENT OF OUR FIVE-YEAR GROWTH PLAN

EDITORIAL

BERNARD CHARLÈS
President & Chief Executive Officer

CHARLES EDELSTENNE
Chairman of the Board of Directors

After 2014 illustrated the relevance of our goal to harmonize products, nature and life, 2015 was a year during which Dassault Systèmes demonstrated the value of our strategy of **3DEXPERIENCE** Industry Solutions. Powered by our V6 architecture, **3DEXPERIENCE** enables our customers to create the value in their products that end consumers are seeking, and to put in place collaborative work practices and optimized manufacturing processes and costs.

These processes can be internal to the enterprise, with designers, engineers, researchers and marketing managers, as well as external, to manage suppliers and multidirectional flows of information, unleashing the innovation potential and contributing to our clients' success.

These achievements are essential as 2015 represented the first year of our five-year growth plan to double our non-IFRS earnings per share, based upon the expansion of our addressable market and the continuous improvement of our efficiency. Thanks to our broad-based performance during 2015, we achieved all of our key objectives, with new license revenue growth, driven by **3DEXPERIENCE** adoption acceleration, core and diversification industries progression and organic, non-IFRS operating margin improvement.

3DEXPERIENCE REVENUE ACCELERATION
The growth we recorded in **3DEXPERIENCE**, with sales

representing 29% of related new licenses non-IFRS revenue, up 5 percentage points compared with 2014, demonstrates the substantial value our clients are extracting from our industry solutions experiences powered by our **3DEXPERIENCE** platform.

With **3DEXPERIENCE** deployments accelerating, we delivered across all sectors significant transformation and productivity gains for our customers, thanks to our approach focused on individual verticals and their most critical industry processes. This growth in deployments reflects our unique positioning with our customers, who continuously face new challenges in a rapidly changing world. Finally, Dassault Systèmes' performance was well supported by excellent execution from our Business Transformation direct sales channel, demonstrating the progress we have made in transforming our sales force since the introduction of **3DEXPERIENCE**.

A STRATEGY WELL ADDRESSING OUR CLIENTS CORE BUSINESS CHALLENGES

Our DNA, which consists of modeling and representing as scientifically accurate as possible products, nature and life, has given birth to a unique portfolio of products and Industry Solution Experiences. Their key strengths are in their scientific content and a deep understanding of industrial processes. This applies to a wide spectrum of application domains from modeling and scientific simulation to production and logistics optimization,

applicable in sectors from Natural Resources, Cities, Transportation, Buildings, Smart Products and Consumer Goods to biological systems and chemistry.

Fully understanding our clients' key issues in each industrial sector, we provide with the **3DEXPERIENCE** platform an important step for their innovation processes, connecting disciplines, inside and outside companies. Our platform provides a new way of interacting and networking, between multidisciplinary experts, designers, manufacturers and marketing services.

DELIVERING POWER, FLEXIBILITY AND CHOICE FOR CUSTOMERS

Among our most remarkable examples is our "Virtual Singapore" engagement, which demonstrated Dassault Systèmes' unmatched capability to represent and simulate an entire city, involving integrating and giving meaning to big data on the enormous scale a city represents. We also offer significant flexibility and propose new ways of working with **3DEXPERIENCE** Industry Solution Experiences, making our products available on premise or on the cloud, delivering value equally for the largest clients, mid-sized companies or start-ups. For example, thanks to the robustness and power of our **3DEXPERIENCE** cloud solutions, customers are designing small aircraft on the cloud, something that would have been unattainable just a few years ago. And in terms of licensing, we continue to offer significant choice, as we have done for more than two

decades, with clients able to purchase or rent their on premise licenses.

ACHIEVING ALL OUR GROWTH OBJECTIVES

We met in 2015 all our key financial objectives, delivering 11% organic new licenses revenue growth and 120 basis point of non-IFRS operating margin improvement. Our non-IFRS total revenue increased 12% to €2.88 billion in constant currencies, driven by double-digit new licenses revenue growth and a good increase in recurring revenue, which represented 70% of software revenue. Non-IFRS operating margin reached 30.8%, benefiting from favorable currency trends and organic improvement and fully offsetting dilution from acquisitions. At €2.25, non-IFRS earnings per share increased 24% (or an estimated 11% excluding a net favorable currency impact). Finally, operating cash-flow, at €633 million, increased 27% compared with 2014. From an industry perspective, we made good progress in our core industries and in industry diversification. The 9% software growth of our core industries for 2015 illustrates very well the dynamic of expanding our client relationships across new domains, reaching more users. Business diversification in our new targeted verticals continued, representing 30% of our 2015 software revenue. This evolution is notably driven by the contribution of acquisition in Life Sciences and good progress in Energy, Process & Utilities, Consumer Packaged Goods - Retail and Natural Resources. On a regional basis, software revenue growth was well-balanced across our three large geographical zones.



In constant currencies, the strongest revenue growth of 14% was delivered by the Americas, driven by our Business Transformation direct channel. In Asia, revenue increased 12% on broad-based growth, led by Japan, South Korea, India and new business opportunities in China. Europe, with revenue up 11%, delivered solid results notably in the United Kingdom, France, Southern Europe, and reflected as well a strong base of comparison in Germany.

For our brands, all of them hold leadership positions and benefited from **3DEXPERIENCE** traction with strong business activity at the end of the year; this is notably the case for CATIA and ENOVIA. SOLIDWORKS, SIMULIA, DELMIA and EXALEAD, supported very well our largest brands performance.

LOOKING FORWARD

2015 was a year of solid expansion for Dassault Systèmes, accelerating growth and implementing our strategy. We should continue to make further substantial progress in 2016. Organic operating margin improvement should continue although at a slower

pace in 2016, as we will increase our investments in Research and Development as well as in Sales to support **3DEXPERIENCE** deployments. Finally, from a strategic perspective, we firmly believe our purpose to harmonize products, nature and life and our investments in this direction foresee the topics at the heart of our clients' concerns and facilitate their transition toward an experience economy, placing the end-consumer at the center of their innovation processes. We will continue to demonstrate that our investments in Research and Development, complemented by the appropriate acquisitions, provide unique value to the industries and clients we address, but also our shareholders, all the while nurturing the passion of the entire organization for innovations destined to serve the future of industry and the economy worldwide.

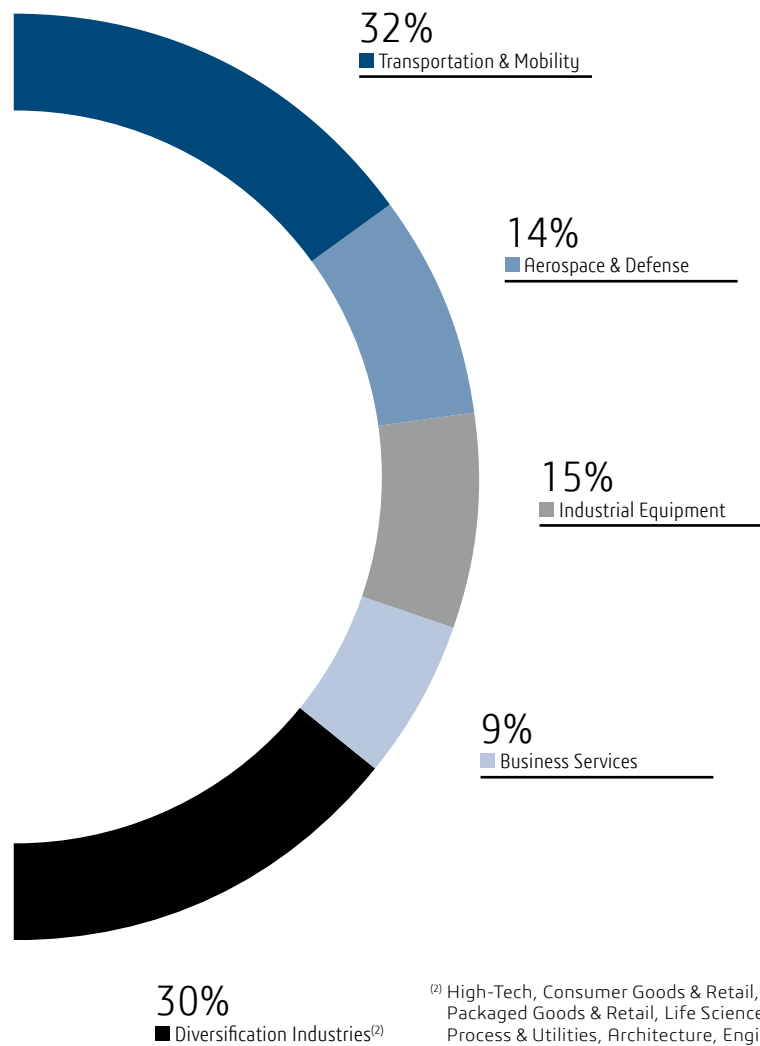
FINANCIAL PERFORMANCE 2015⁽¹⁾

DELIVERING ON ALL 2015 OBJECTIVES

| | |
|--------------------------------------|------------------------|
| REVENUE GROWTH* | + 12% |
| NEW LICENSES REVENUE ORGANIC GROWTH* | + 11% |
| EARNINGS PER SHARE* | + 24% at € 2.25 |
| DIVIDEND PER SHARE | + 9% at € 0.47 |
| NET CASH PROVIDED BY OPERATIONS | + 27% at € 633 million |

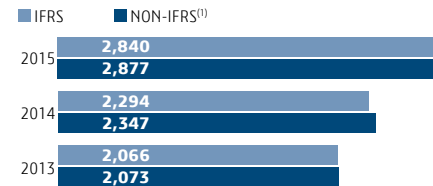
*Non-IFRS, revenue growth figures in constant currencies

INDUSTRY DIVERSIFICATION

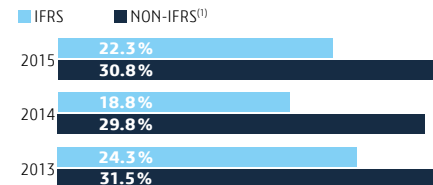


⁽²⁾ High-Tech, Consumer Goods & Retail, Consumer Packaged Goods & Retail, Life Sciences, Energy, Process & Utilities, Architecture, Engineering & Construction, Financial & Business Services, Natural Resources, Marine & Offshore.

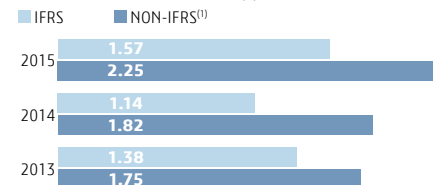
REVENUE (million €)



OPERATING MARGIN (%)



DILUTED EPS (€)



NET CASH PROVIDED BY OPERATIONS (MILLION €)



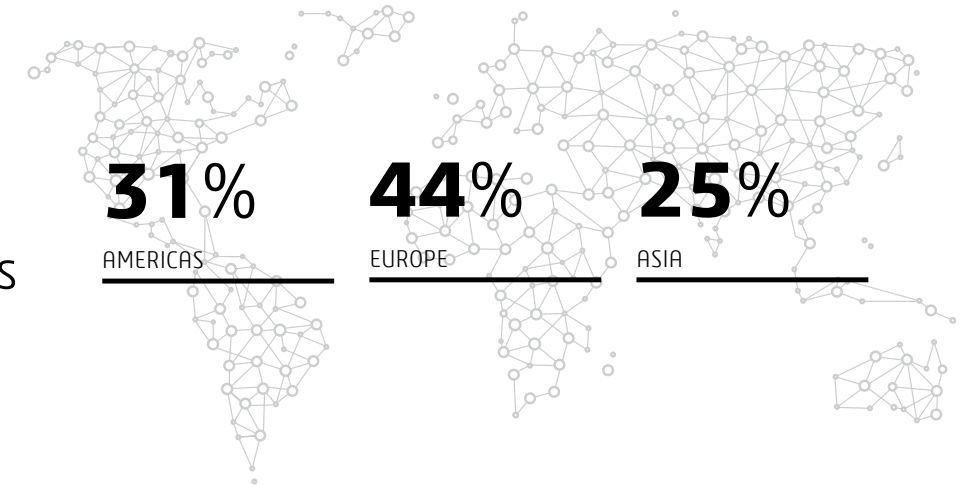
FINANCIAL PERFORMANCE 2015⁽¹⁾

REVENUE BY GEOGRAPHIC REGION

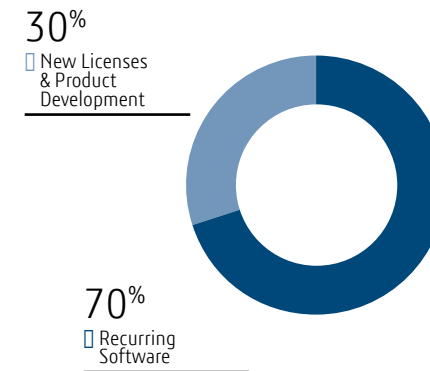


WE ARE LOCATED IN MORE THAN

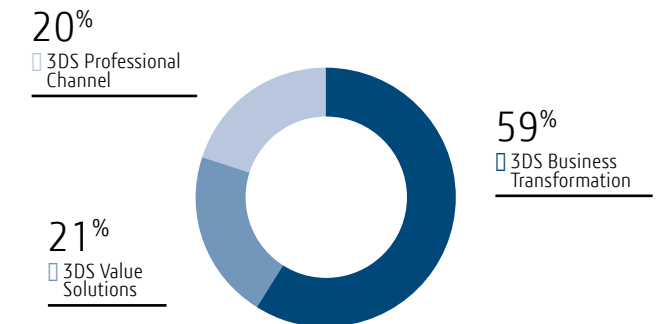
140 countries



HIGH LEVEL OF RECURRING SOFTWARE REVENUE

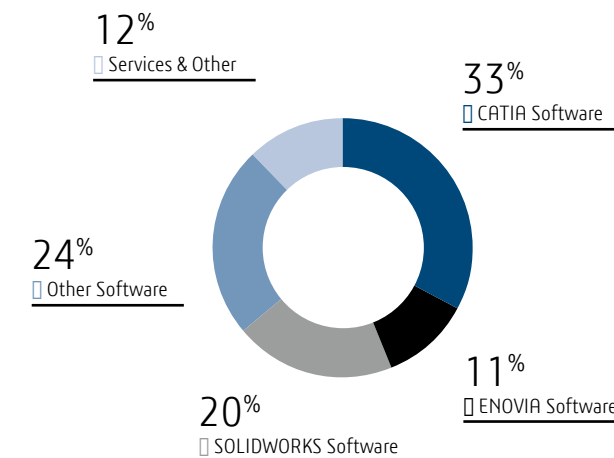


WELL-BALANCED DIRECT AND INDIRECT SALES CHANNELS



WELCOMING 22,000 NEW CLIENTS

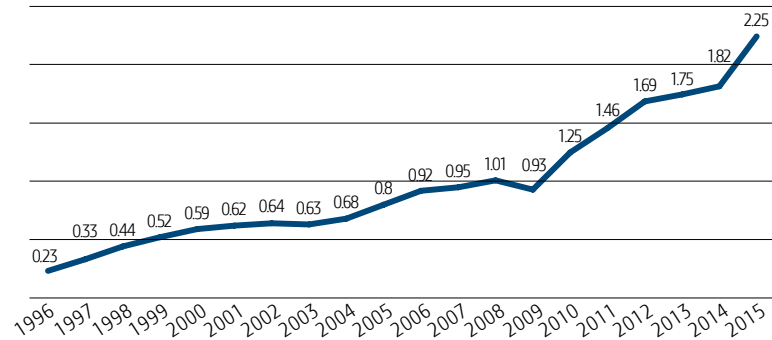
LEADING BRANDS SERVING OUR USERS



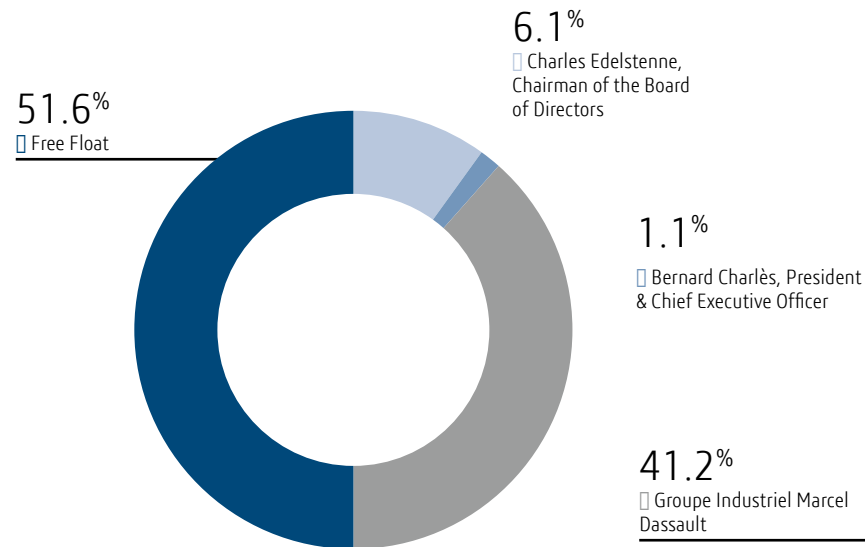
⁽¹⁾ All financial information is reported according to IFRS. In addition, the Company has provided supplemental non-IFRS financial information which excludes the effect of adjusting the carrying value of acquired companies' deferred revenue, the amortization of acquired intangibles, share-based compensation expense, certain other operating income and expense, net, certain one-time items included in financial income and other, nets, and certain one-time tax effects and the income tax effects.

SHAREHOLDER'S INFORMATION

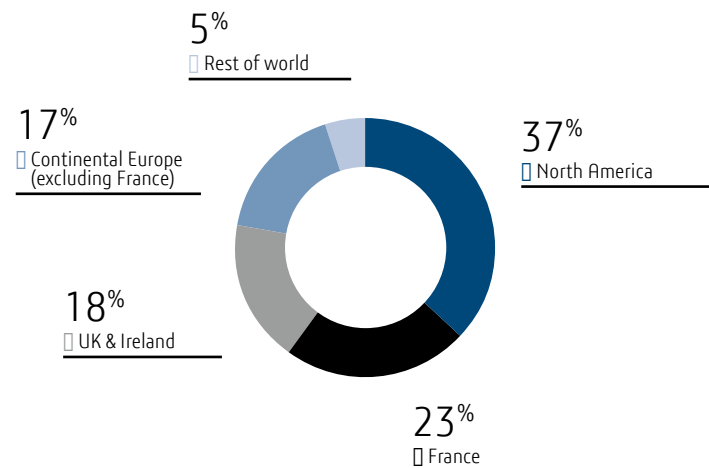
EPS MULTIPLIED BY TEN SINCE IPO



SHAREHOLDER'S COMPOSITION



SPLIT OF FREE FLOAT



DASSAULT SYSTEMES STOCK DATA

LISTED ON NYSE EURONEXT PARIS AND TRADED ON THE AMERICAN OTC MARKET

STOCK PRICE AS OF 31/12/2015

€73.77
\$81



MARKET CAPITALIZATION

€18.7 BN
\$20.5 BN



COMPARISON OF THE STOCK PERFORMANCE

Dassault Systèmes

+45%

CAC 40

+9%

Euronext 100

+12%

Daily volume of stock traded on Euronext

318,765 shares

KEY 2016 SHAREHOLDER'S EVENTS

THURSDAY, APRIL 21, 2016
RELEASE OF FIRST QUARTER EARNINGS

THURSDAY, MAY 26, 2016
ANNUAL SHAREHOLDER'S MEETING

THURSDAY, JULY 21, 2016
RELEASE OF SECOND QUARTER EARNINGS

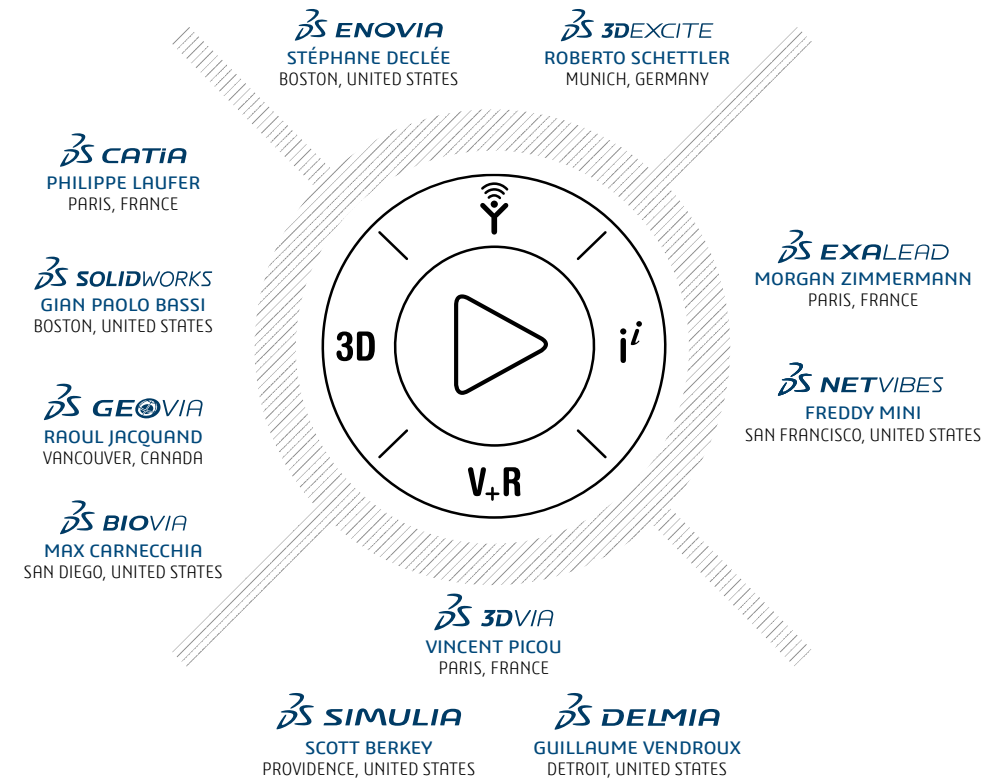
TUESDAY, OCTOBER 25, 2016
RELEASE OF THIRD QUARTER EARNINGS

SHAREHOLDER'S CONTACT

Tel.: +33 (0)1 61 62 69 24
Fax: +33 (0)1 70 73 43 59
E-mail: investors@3ds.com
www.3ds.com/investors

A CROSS-FUNCTIONAL ORGANIZATION THAT ENCOURAGES ACHIEVEMENT

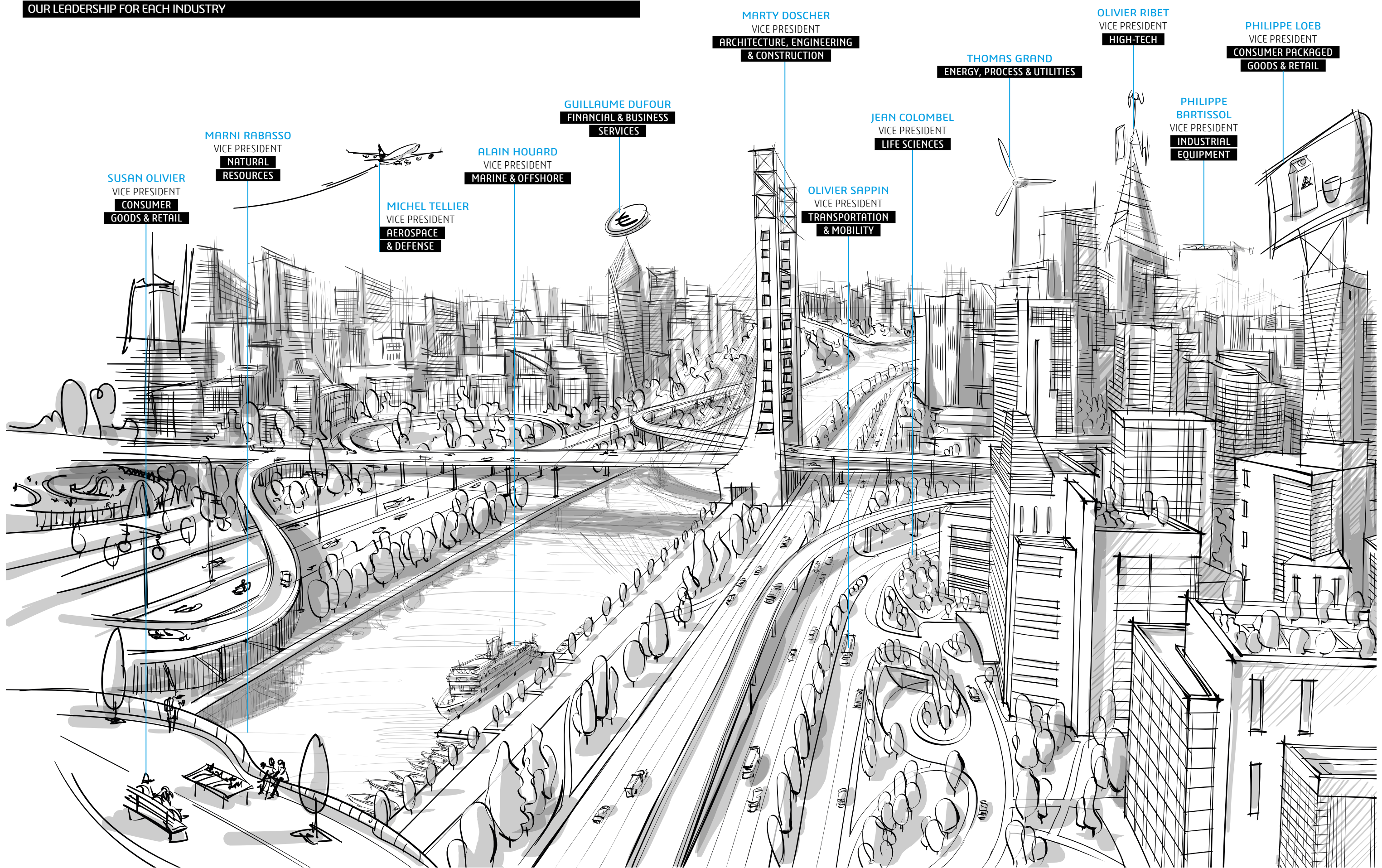
OUR ATTENTION TOWARDS USERS



OUR PRESENCE IN THE WORLD



OUR LEADERSHIP FOR EACH INDUSTRY



SUSAN OLIVIER
VICE PRESIDENT
CONSUMER
GOODS & RETAIL

MARNI RABASSO
VICE PRESIDENT
NATURAL
RESOURCES

MICHEL TELLIER
VICE PRESIDENT
AEROSPACE
& DEFENSE

ALAIN HOUARD
VICE PRESIDENT
MARINE & OFFSHORE

GUILLAUME DUFOUR
FINANCIAL & BUSINESS
SERVICES

MARTY DOSCHER
VICE PRESIDENT
ARCHITECTURE, ENGINEERING
& CONSTRUCTION

JEAN COLOMBEL
VICE PRESIDENT
LIFE SCIENCES

OLIVIER SAPPIN
VICE PRESIDENT
TRANSPORTATION
& MOBILITY

THOMAS GRAND
ENERGY, PROCESS & UTILITIES

OLIVIER RIBET
VICE PRESIDENT
HIGH-TECH

PHILIPPE BARTISSOL
VICE PRESIDENT
INDUSTRIAL
EQUIPMENT

PHILIPPE LOEB
VICE PRESIDENT
CONSUMER PACKAGED
GOODS & RETAIL

EXECUTIVE COMMITTEE

Driven by their passion for virtual worlds, the Dassault Systèmes management team nurtures talent throughout the **3DEXPERIENCE** Company. They guide their customers' transformation with sustainable innovation solutions that harmonize products, nature, and life.



1 Bernard CHARLÈS
President &
Chief Executive Officer

2 Monica MENGHINI
Executive Vice President
Chief Strategy Officer

3 Dominique FLORACK
Senior Executive
Vice President
Research
and Development

4 Bruno LATCHAGUE
Senior Executive
Vice President
Global Field Operations
(Americas), Industry
solutions and Indirect
channels

5 Sylvain LAURENT
Executive Vice President
Global Field Operations
(Asia), Worldwide
Business Transformation

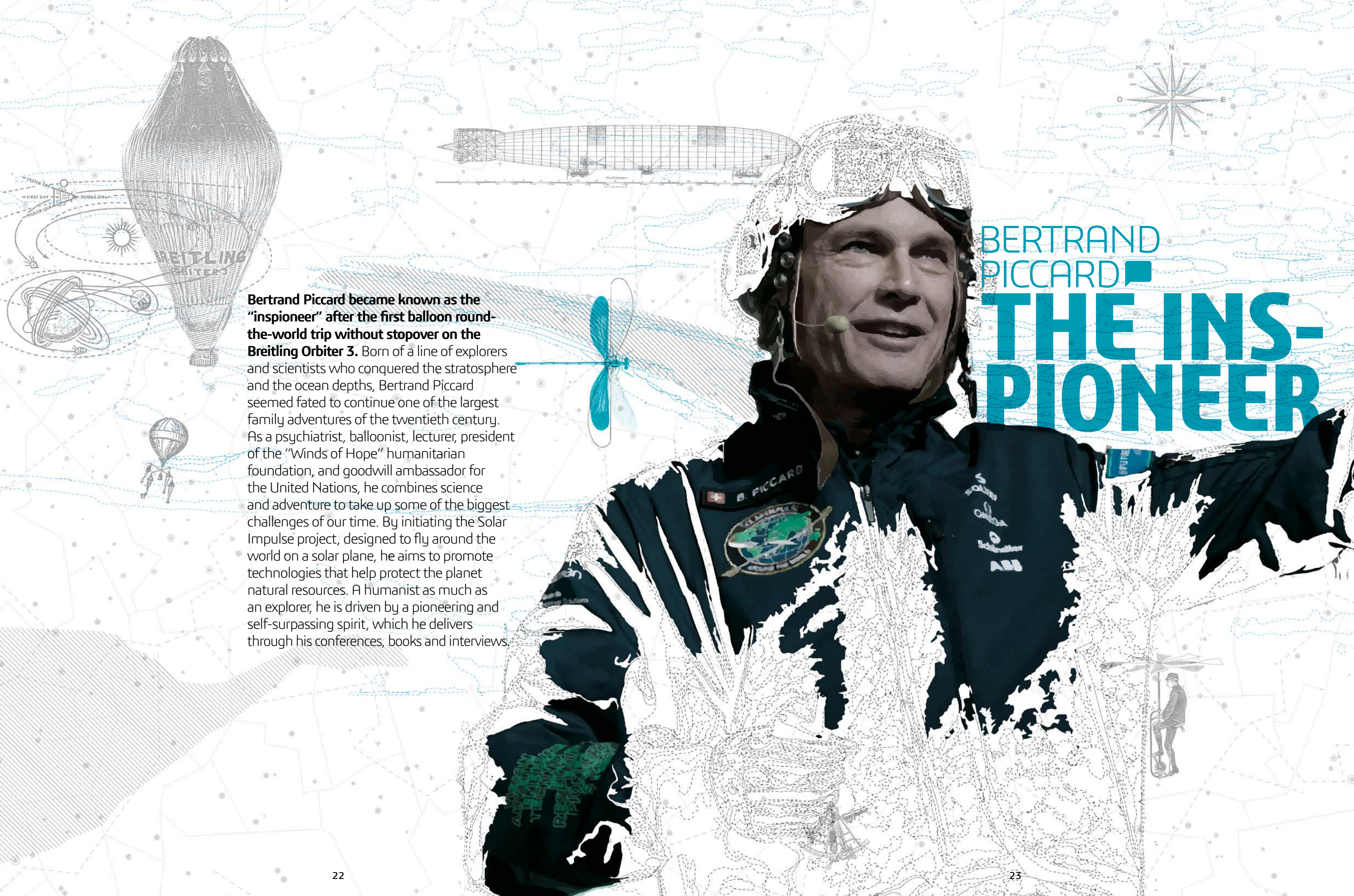
6 Thibault DE TERSANT
Senior Executive
Vice President
Chief Financial Officer

7 Pascal DALOZ
Executive Vice President
Brands and Corporate
Development

8 Laurence BARTHÈS
Executive Vice President
Chief People and
Information Officer

9 Laurent BLANCHARD
Executive Vice President
Global Field Operations
(EMEAR), Worldwide
Alliances and Services

10 Philippe FORESTIER
Executive Vice President
Global Affairs and
Communities



Bertrand Piccard became known as the “inspioneer” after the first balloon round-the-world trip without stopover on the Breitling Orbiter 3. Born of a line of explorers and scientists who conquered the stratosphere and the ocean depths, Bertrand Piccard seemed fated to continue one of the largest family adventures of the twentieth century. As a psychiatrist, balloonist, lecturer, president of the “Winds of Hope” humanitarian foundation, and goodwill ambassador for the United Nations, he combines science and adventure to take up some of the biggest challenges of our time. By initiating the Solar Impulse project, designed to fly around the world on a solar plane, he aims to promote technologies that help protect the planet natural resources. A humanist as much as an explorer, he is driven by a pioneering and self-surpassing spirit, which he delivers through his conferences, books and interviews.

BERTRAND
PICCARD

THE INS- PIONEER

QUICK BIO

Bertrand Piccard,
Initiator, Chairman and Pilot
of Solar Impulse, and inspioneer.

1958 born in Lausanne.

1985 becomes European
champion in hang glider
aerobatics.

1992 wins first transatlantic
balloon race.

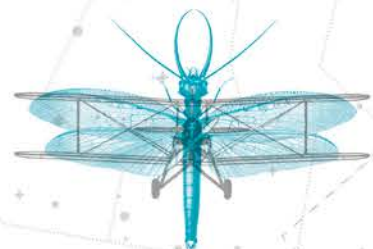
1996 awarded a doctorate
in psychiatry. Thesis: *L'Ordeal,
a Learning Experience.*

1999 completes round-
the-world balloon flight
in 19 days, 21 hours.

2011 *Solar Impulse* makes
its first international flight.

2015 *Solar Impulse 2*
begins its round-
the-world flight.

"I think that
the role of
exploration
and adventure
is now to find
solutions for
improving the
quality of life
on our planet."



We've explored nearly every corner
of the world. One could think that
the motivating force behind the
spirit of adventure has disappeared.
Yet you embody that spirit.
How do you explain that?

BP I don't think that adventure necessarily has to be spectacular. It does, however, have to be extraordinary. By that I mean that it removes us our normal way of thinking, acting, and behaving. And viewed from that perspective, there are some very powerful personal adventures. For some people – even a large part of the world's population – the big adventure is to ensure their children get an education and to feed their family. All the personal experiences related to migration, refugees, and wars are very powerful human adventures. Individuals are put in a crisis situation that requires them to rethink how they function. Of course, there are other types of adventure that are more closely related to exploration, new approaches, and new ways of thinking. That was sort of the direction I took after being inspired as a child by the pioneers of space exploration. I attended six Apollo mission launches. I met most of the astro-

nauts in the US space program during that era. I also met Charles Lindbergh and explorers – not to mention my family history. And I knew that I also wanted to lead a life that would not only be fascinating, but also productive. Because it's possible to experience amazing things in a slightly self-centered way. Conversely, you can do things that are very productive, but boring. I've always wanted my life to have both aspects. I need passion, excitement, and to make discoveries, but I also need to feel that what I do has a purpose. I think that's what we need more of these days. Adventures and explorations have to be beneficial to the community.

The challenges we face today appear to be more technology-driven than in the past. Have you noticed a recent shift in that direction?

BP In the past, available technologies were a lot less sophisticated, which meant that the challenges were mostly physical and related to the exploration of new frontiers. First there was the South Pole, North Pole, Everest, and the Mariana Trench¹⁾, and then, once we had explored the entire earth, we had to explore the moon. Maybe one day we'll send people to Mars. But at the moment, it's more important to improve quality of life on earth than to explore new frontiers. Space exploration and moon missions are wonderful, but if we leave half of the population behind in unacceptable living conditions, and if we continue to exhaust our natural resources, to pollute the planet, destroy our ecosystem, and disrupt the climate, all this exploration will have been for naught. I think that the role of exploration and adventure is now to find solutions for improving the quality of life on our planet. That involves fighting poverty; working for human rights; medical research; improved global and national governance; clean technology; renewable energy; more responsible, sustainable development; and greater overall respect for life – both that of humans and all other forms of life in the biosphere. I think that those are the major challenges today.

⁽¹⁾ Jacques Piccard (1922-2008), Bertrand's father, was an ocean explorer who broke the world record for deep-sea diving, reaching a depth of 10,916 m in the Mariana Trench.

You prepare meticulously for the risks you take during your exploits. Is it possible to maintain a sense of adventure despite the level of control available through new technologies?

BP Your question raises issues about the role of technology and its end purpose. I think that if we want to improve quality of life, we cannot prevent people from pursuing development. We can't ask them to limit their mobility, travel, comfort, or standard of living. Wealthy countries and poor countries have found themselves on opposite sides of this debate. Developed countries have held the position that developing countries needed to slow down their growth in order to prevent pollution. And emerging countries have argued that since developed countries are historically to blame for triggering climate change, it is their duty to make sacrifices. But no one wants to make sacrifices. I think that technology is now enabling us to limit our impact on the environment, reduce CO₂ emissions and pollutants, and cut down on the waste of natural resources, without asking people to make too many sacrifices. That is why I think that clean technology is such a fundamental issue. We absolutely must continue to develop clean solutions. The only other way to improve quality of life is to ask people to make sacrifices, which they are unwilling to do.

We have clean technology at our disposal, so we should use it! We have taken advantage of particularly efficient technologies for Solar Impulse: ultra-light materials and electric engines, foam insulation, and extremely efficient batteries and LED lights. If all these technologies were used in both transportation and housing construction, that alone would halve global CO₂ emissions and energy use.

There is a huge opportunity to improve the environmental and climate situation using these technologies. But this is obviously very complex and can't be done alone. You need the strength of a team – multidisciplinary teams – including engineers, technicians, pioneers, adventurers, and explorers. And the political world also has to fulfill its role and see to it that these technologies reach users. You need industrial companies to produce them. You need customers who purchase and use them. The interdependence of all these stakeholders is fundamental. And that's one of the aims of Solar Impulse, which unites all these forces and is a fantastic way to spread the word about all these clean technologies. Raising awareness is fundamental.

"I think that technology is now enabling us to limit our impact on the environment, reduce CO₂ emissions and pollutants, and cut down on the waste of natural resources, without asking people to make too many sacrifices."

THE WORLD IS WATCHING US

In the new economy, the way in which we experience a product is worth more than the product itself. Industry of the Future will be dedicated to the creation and production of experiences.



ADDITIVE MANUFACTURING

3D PRINTING TAKES OFF

Additive manufacturing, 3D printing, or additive layer manufacturing (ALM), whichever term you prefer, is leading the transition from manufacturing parts by removing material from a mold or block to manufacturing by adding successive layers of plastic, metal, ceramic, or even organic material.



” WE ARE ENTERING
THE PERSONAL
MANUFACTURING ERA

JOINT INTERVIEW

Laurent Delsart, CATIA Engineering Alliance Director,
Dassault Systèmes
Frédéric Vacher, Corporate Strategy Innovation Director,
Dassault Systèmes

Is additive manufacturing a revolution?

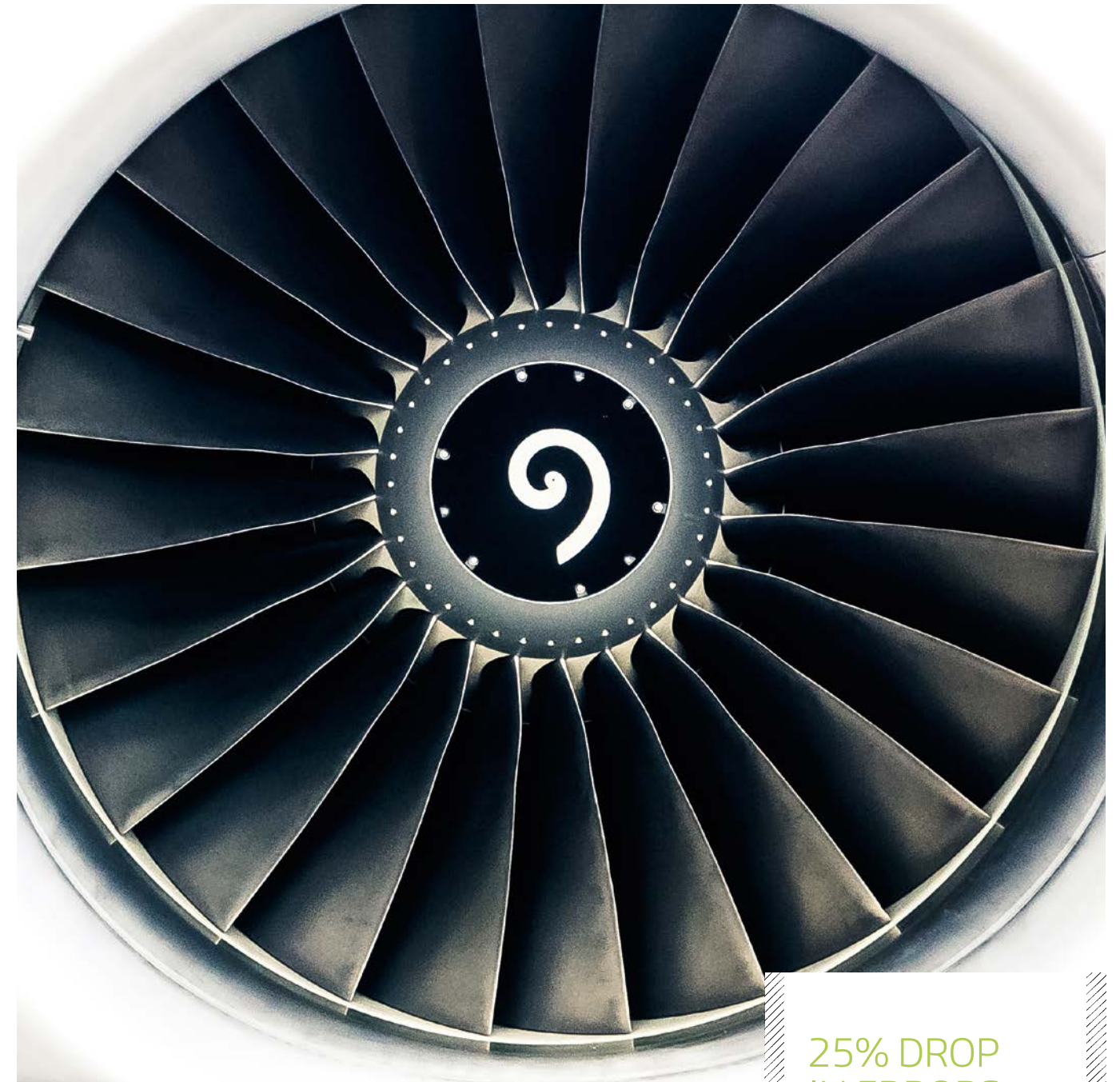
Of course, but as with all revolutions, it's come a long way. Manufacturing by adding layers has existed for 30 years in industry, and our solutions CATIA and SOLIDWORKS have supported it for a long time in prototyping. The design – we can create previously infeasible design – and the decrease in materials cost is the revolution, and the disruption that it causes for actors and applications and mainly in new materials. We can establish a parallel with the information technology world: we are entering the personal manufacturing era as we entered the personal computing era 30 years ago. The revolution is in accessibility, which will involve more people – from maker to craftsman – in new industrial sectors.

What sectors are involved?

Aerospace, automobiles are in the lead, as usual. Space applications and Formula 1 opened the way in both of these applications. The life sciences will benefit in particular, enabling ultra-personalization. We are all different so 3D printing is perfectly suited to prosthesis manufacturing, plaster casts, dental, bone and soon, organic implants. Architecture and construction are also involved. Furthermore, the entire spare-parts economy will be disrupted because instead of storing parts, we will store digital models to manufacture the part on-demand where it is needed.

How do these changes and the makers movement fit together?

The DIYers (do-it-yourselfers), those we call makers, will take advantage of these new possibilities at home or in co-working spaces, the fab labs, to make hard-to-find broken parts for example. Behind 3D design and manufacturing, the value of fab labs lies in the platform and the community. To innovate together, to learn, meetings will take place between young people and seniors, between amateurs and professionals, within this physical space but also through virtual communities to share digital resources.



PARIS AIR SHOW

**STRATEGIC PARTNERSHIP
WITH SAFRAN**

At the 2015 Paris Air Show, Dassault Systèmes and Safran announced the signing of a strategic partnership for producing aircraft engine parts using additive manufacturing. The partnership encompasses upstream material design

as well as downstream testing and manufacturing processes, to provide digital continuity for all engineering parameters necessary for the additive manufacturing of an engine part: materials science, functional specifications, generative design, 3D printing optimization, multi-robotic production, and certification.

**25% DROP
IN ERRORS**

with the *Build to Operate* industry solution experience for aerospace and defense, presented by Dassault Systèmes.



THE NEXT STEPS FOR IMPLANT SURGERY

"Today, surgeons choose from a catalog of existing implants, they become even designers in producing implants from a digital file based on data from patient measurements. The next step, combining 3D-printed implants with patient cells, holds great promise for tissue engineering."

Frédéric Vacher,
Corporate Strategy Innovation Director, Dassault Systèmes

MEDICINE

BIOMODEX SIMULATE BEFORE YOU OPERATE

BioModex, a start-up specialized in surgical simulation founded by Sidarth Radjou and Thomas Marchand, offers surgeons the possibility to train on a replica of an organ before an operation. "The replica is produced using 3D printing," explains Marchand. "It is made from different types of plastic, which are combined to replicate the organs. They react to pressure, incision and separation, just like living tissue." BioModex uses cutting-edge additive manufacturing techniques that can produce the most complex parts of the human body with precision finer than a millimeter, in a single pass. The young company has even succeeded in producing the smallest joint in the human body, the ossicles in the middle

ear! This feat is achieved by the ability to print an infinite color palette and levels of mechanical resistance (soft, hard, etc.) at the same time, without the need for additional processing. In comparison with a purely digital simulation, BioModex offers an unparalleled level of similarity with the physical actions performed during a surgical operation. Surgeons learn and repeat in order to perfect their technique. The physical model, which is created using a series of digital replication procedures, results in a safer surgical operation and offers an entirely new perspective to surgeons. 3D printing is becoming central to our understanding the human body.



ARCHITECTURE - CONSTRUCTION

XTREEE® ADDITIVE MANUFACTURING THINKS BIG

In the construction industry, speed and precise execution are poised to become just as crucial as the efficient use of materials. XtreeE® picked up on this trend and is focusing its solutions on additive manufacturing for architecture. The French start-up specializes in research and development for 3D printing of large-scale components used in the construction industry. Its staff includes architects, engineers, materials scientists, computer-science researchers, and robotics specialists. The company provides a combination of R&D and construction consulting services – two activities that complement each other well. XtreeE® often manufactures complex components that are inspired by organic structures, printed using unconventional materials such as clay, plaster, and concrete. It is easy to see why LafargeHolcim, the world leader in construction materials, is working alongside the Dassault Systèmes 3DEXPERIENCE Lab to support XtreeE®.

LEADING EDGE

"The aerospace industry – Safran and GE, in particular – is clearly the most advanced sector in terms of industrializing additive manufacturing, but the process is also leading to inventive initiatives in areas such as the construction sector."

Laurent Delsart,
CATIA Engineering Alliance Director, Dassault Systèmes

THE ADVANTAGES OF 3D PRINTING IN ARCHITECTURE, ACCORDING TO XTREEE®

Optimized structures that reduce materials and, as a result, weight.



Ability to produce complex shapes at a reasonable cost.



Shorter time to market (at least 40% less time between the design and prototype phases).



Flexible manufacturing equipment.



Industrial-quality precision (approx. 1/2 mm).

INDUSTRY OF THE FUTURE

Imagining differently

THE INDUSTRY OF THE FUTURE ALLIANCE

Established in July 2015, the Industry of the Future Alliance is a group of trade associations in industry and the digital economy that are working with academic and technology partners to achieve a common goal: make France a leader in the global industrial revival and drive forward the use of new industrial systems throughout the nation's economic fabric. Pascal Daloz, Executive Vice President of Dassault Systèmes, Brands and Corporate Development, serves as co-president of the alliance.

Dassault Systèmes is at the leading edge of all global plans, thanks to its far-reaching expertise in areas such as materials science (industrial processes), plant virtualization (combination of products/processes/production resources), concurrent engineering and production optimization, a collaboration platform (manufacturing as a service) that boosts agility (restructuring of production lines) and diversity (introduction of new elements), as well as smart systems (mechatronics or system of systems).



BUILDING AN IMAGINATION INDUSTRY

"There is a general misconception about the true nature of digital technology. The most visible benefit is increased productivity and competitiveness, but its real power, its greatest strength, is imagination – it enables us to imagine differently. Digital technology is virtual, which means possibilities, innovation, and imagination. We live in a time where big achievements are associated with the virtual, where imagination is prized above all other faculties, a time where success comes to the pioneers who imagine a world that is yet to exist. The role of industry is to invent and reinvent on a continual basis. The industrial companies destined for success are those that will create a world whose lexicon is yet to be created. Instead of trying to optimize the present, we have to imagine new forms of solutions and business models. In the future, industry will not be a mere system for producing goods, but a chain of creation, production and exchange of experience."

Bernard Charlès,
President and Chief Executive Officer, Dassault Systèmes

TRANSNATIONAL INITIATIVES

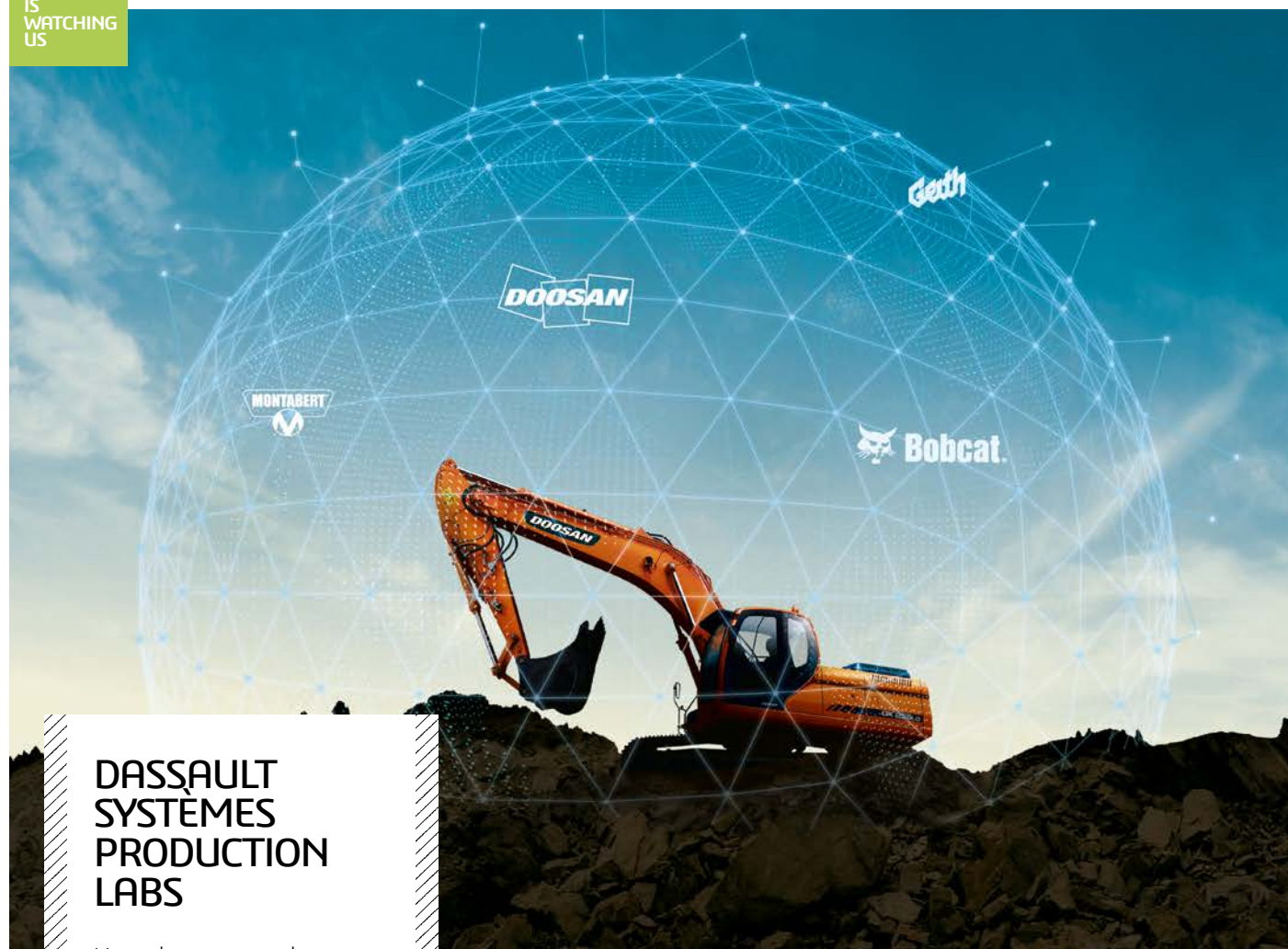
EUROPEAN UNION, MEXICO,
SOUTH AFRICA AND
THE UNITED STATES:
**INTELLIGENT MANUFACTURING
SYSTEMS.**

GLOBAL:
WORLD MANUFACTURING FORUM.
MAY 3-4, 2016,
BARCELONA.

GLOBAL MOVEMENT

Initiatives across the world are fostering the emergence of the industry of the future. These programs seek to promote new ways of organizing manufacturing bases and to set up smart factories (in reference to smart cities) – new units that offer greater production flexibility and more efficient allocation of resources, paving the way for a new industrial revolution.





DASSAULT SYSTÈMES PRODUCTION LABS

How do you speed up change? Train operators and help managers to set up latest-generation production lines. Production Labs are platforms that industrial companies can use to find machines, space, operators, and experts to suit their needs. They can test out different configurations tailored to their specific situation. The three inaugural Production Labs are specialized in collaborative robotics, 3D printing, and lineside logistics.

Pascal Daloz,
Executive Vice President
of Dassault Systèmes,
Brands and Corporate
Development

INDUSTRY

DOOSAN INFRACORE SELECTS THE 3DEXPERIENCE PLATFORM

The South Korean company Doosan Infracore produces construction equipment, drilling instruments, machine tools, and engines.

Goal: Become one of the top three machinery manufacturers by 2020.

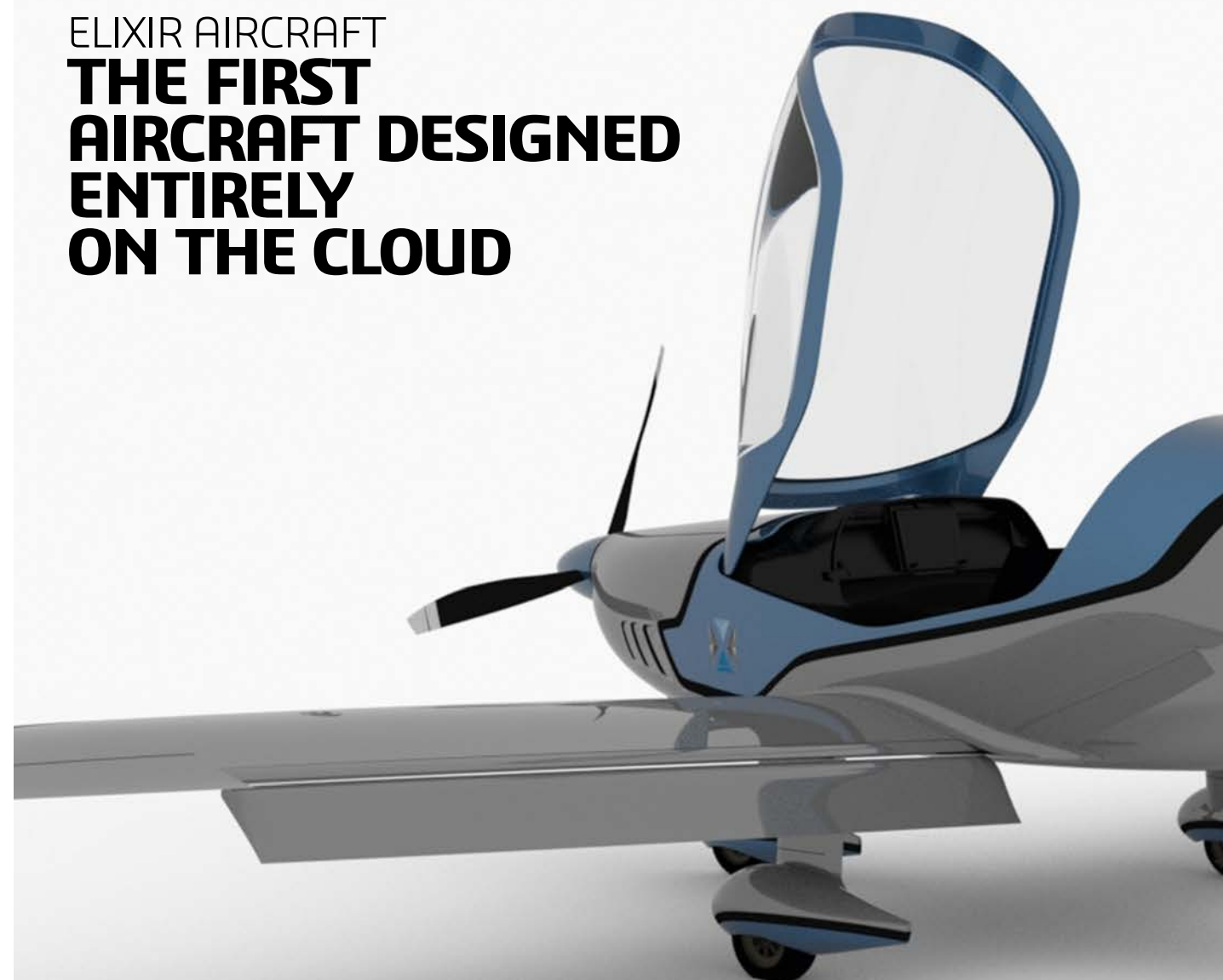
Challenge to overcome: Improve productivity and product quality at its 14 subsidiaries and R&D centers in the United States, China, Norway, and, the Czech Republic.

Selected solution: The 3DEXPERIENCE platform facilitates product development, teamwork across sites, and manufacturing simulation.

Expected benefits: Reduced development time achieved through concurrent engineering, elimination of 90% of nonconformities as well as corrective measures identified using 3D simulation, as well as improved data integrity via a shared database.

AVIATION

ELIXIR AIRCRAFT THE FIRST AIRCRAFT DESIGNED ENTIRELY ON THE CLOUD



The power of virtual worlds unlocks new opportunities for creative companies. This is particularly true in aerospace, where the industrial base, human resources and financial capital required stand as a barrier to entry, closing off the markets to everyone except for major corporations. Elixir Aircraft, a start-up founded in 2014 that designs lightweight, innovative aircraft, needed a simple, efficient, flexible tool for engineering and project management. The company naturally opted for Dassault Systèmes software, which is used to create 90% of aircraft

worldwide. The 3DEXPERIENCE Platform handles all aspects of aircraft construction, engineering, 3D design, simulation, project management, and collaboration, with an identical interface for all users. The platform eliminated all problems related to accounting, management, and data transfer and back-up – all information is stored on an ultra-secure server at Dassault Systèmes – leaving the start-up free to focus on its core business: designing innovative, safe, and high-performance aircraft.

THE FACTORY OF THE FUTURE ACCORDING TO MICHELIN

Michelin's 112,000 employees manufacture more than 184 million tires per year at 68 industrial sites in 17 countries. The tires are used to equip everything on wheels: passenger vehicles, heavy-duty trucks, two-wheelers, tractors, construction equipment, aircraft, motorcycles and cars for competition or collection.

In a globalized world where the speed of change continues to increase, our factories will have to evolve to rise to emerging challenges. Let us not forget that in 20 years, most production will still take place in factories that already exist today.

All new solutions have to be integrated into our current factory facilities, which requires us to have a long-term vision for our industrial information systems. Another challenge is providing support for our range of solutions as it grows broader, while also improving our customer service

quality, through the use of more responsive, flexible systems. Lastly, we have to maintain the same standards worldwide, no matter where production takes place. All while reducing our costs. The first driver we will leverage to meet these challenges is an upgrade to our planning, scheduling, and sequencing systems in order to streamline financial control.

The second is to improve the flexibility and reliability of our factories, which will require major changes. The third is empowerment: we want our operators to be independent, responsible,

versatile, multi-skilled, and capable of working in a team and making decisions together. To achieve this goal, we have to provide them with information system interfaces that are as user-friendly as possible, intuitive to use, and require as little training as possible. We count on the quality of Dassault Systèmes solutions in that regard.



“Offering a wide variety of products while guaranteeing a high standard of quality worldwide requires a mastery of all the technical data on the product lifecycle: from design, production, use to recycling.”

INSIGHT FROM

Jean-Christophe Guérin,
Executive Vice President
Materials Product Line, Michelin

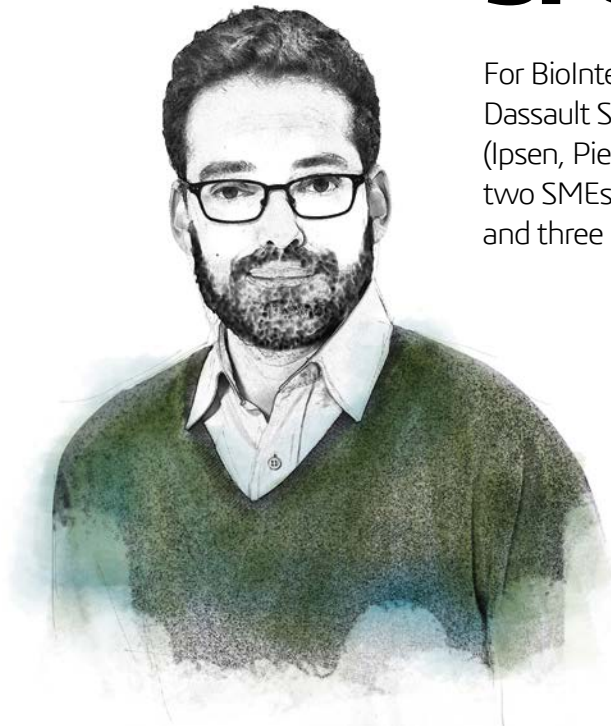
“3D printing – metal, in particular – has pride of place among the new technologies we’ve been working on for many years. Offering a wide variety of products while guaranteeing a high standard of quality worldwide requires a mastery of all the technical data on the product lifecycle: from design, production, use to recycling. We have to manage a considerable amount of data and knowing how to exploit it is challenging. In addition, one of the main trends in the mobility industry is product weight reduction, which improves fuel efficiency.

But the lighter the products are, the more sensitive they are to the slightest variation in raw materials, processes, or operating methods. So we have to monitor quality extremely carefully, and be able to react very quickly with an extraordinary amount of data. We count on the expertise of Dassault Systèmes’ teams and the performance of their solutions for the factories of the future and the future of our factories.”

BIOINTELLIGENCE

A CONSORTIUM OF LIFE SCIENCE SPECIALISTS

For BioIntelligence, a project that has existed for 10 years, Dassault Systèmes has partnered with five life sciences industrialists (Ipsen, Pierre Fabre, Sanofi-Aventis, Servier, and Bayer CropScience), two SMEs specialized in bioinformatics (Sobios and Aureus Pharma) and three public research institutions (Inria¹, Genopole, and Inserm²).



” THE VIRTUAL WORLDS ARE A NEW SCIENTIFIC SPACE THAT OPEN LINES OF COMMUNICATION BETWEEN ALL DISCIPLINES

INSIGHT FROM

Patrick Johnson,
Vice President Corporate Research & Sciences,
Dassault Systèmes

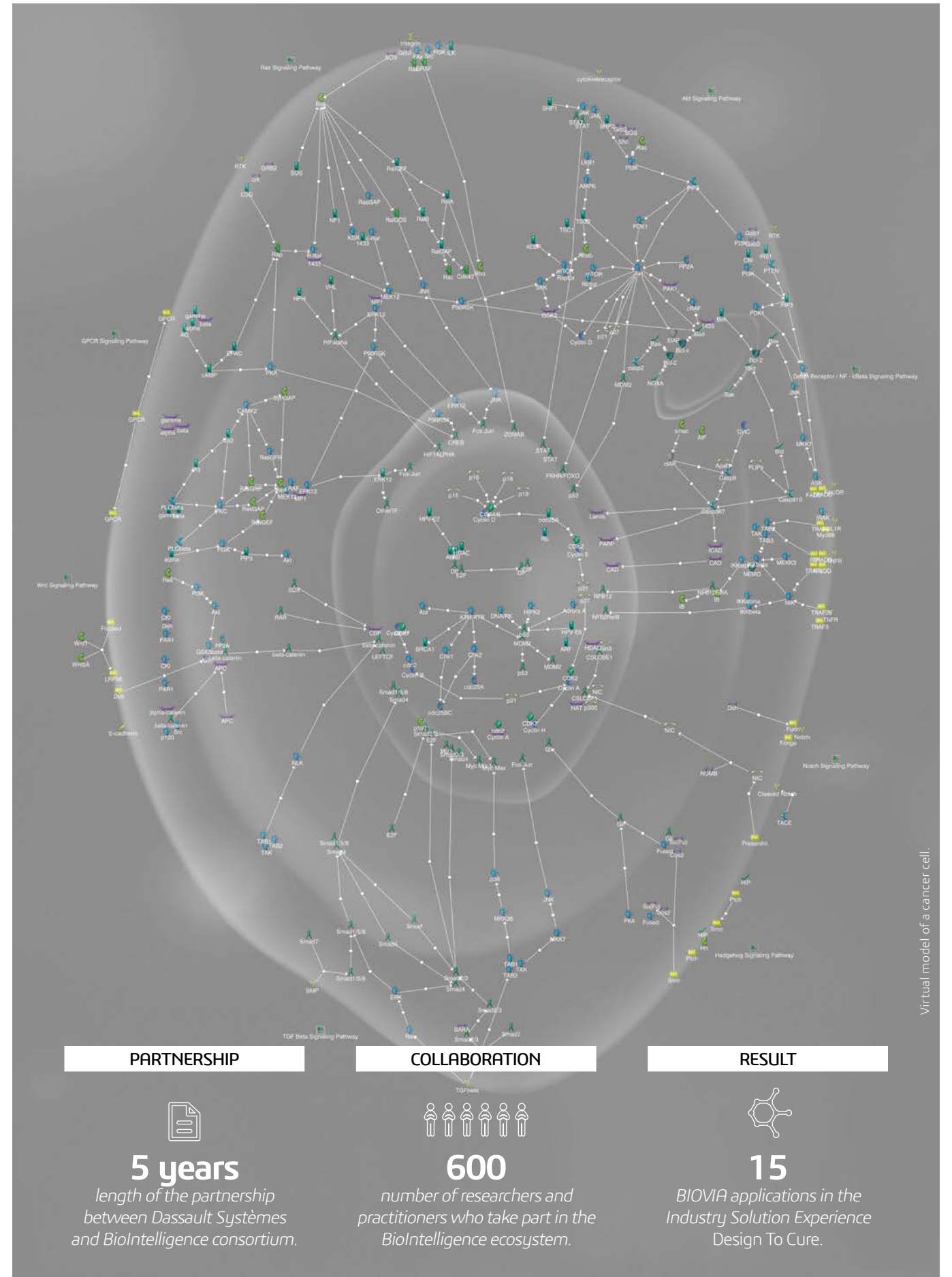
A VIRTUAL LABORATORY

The BioIntelligence program has developed a collaborative platform capable of understanding drug efficiency, simulating their action on tissues and cells, modeling their safety and predicting the results of different dosages on different groups of patients.

Cancer is one of the therapeutic areas selected during the launch of the BioIntelligence project. Why? Because cancer is a particularly complex, multifactorial disease – it generates a great deal of information. To understand the disease, it’s necessary to bring together a large number of actors from different disciplines: geneticists, toxicologists, immunologists, specialists in metabolism and energy balance, etc. And reach levels of cell abstraction and representation that combine all these scientific disciplines. We have used systemic modeling, which is particularly well suited to incorporating all these disciplines. From a collaborative project management standpoint, this

involves bringing together researchers from different disciplines, who work together on a single scientific subject and gain a much more direct understanding of each other’s disciplines. The virtual world acts as a scientific Esperanto that opens lines of communication between all these specialists. And when we finally test the model in silico, a new holistic understanding takes shape. This opens the door to more therapeutic innovation and gains in terms of development and productivity.

¹ Inria: French Institute for Research in Computer Science and Applied Mathematics
² Inserm: French National Institute of Health and Medical Research





MEDECINE

BIOMODEX SURGERY GOES DIGITAL

As we have learned, BioModex completely revolutionized the use of additive manufacturing. And the young French start-up did not stop there: an entire medical segment is also being impacted by their digital approach.

Each year in the United States, over 400,000 people are affected by medical errors, which cost more than US\$1 trillion when all complications are taken into account. Surgeons can reduce surgical risks by training, practicing, and learning throughout their career in order to perfect their technique. However, conventional training methods – on cadavers or animals, chiefly pigs – are increasingly viewed as unethical.

Pure digital simulation is a solution, but an imperfect one, because it does not teach actual hand gestures and muscle learning under real conditions.

BioModex, a young French start-up, offers a 3D-printed surgical simulator that overcomes all the issues that can arise when using a cadaver in

a laboratory or handling animals. Their digital procedure is extremely advanced. It uses digital imaging – scanner, MRI – as a starting point, followed by a segmentation process that extracts shapes from the images. Next, simulation software is used to apply biomechanical properties to a virtual solid model. The last step is 3D printing of the body part scanned at the beginning of the process – an organ, joint, etc. – with all the visual and tactile subtleties and constituent parts (even the tiniest).

This innovative digital procedure creates a virtually identical copy of an actual organ, enabling future practitioners to train under the most realistic conditions possible, on a regular basis with an infinite range of procedures. It is also useful to practicing surgeons, who can perfect

their technique using real surgical instruments and avoid discovering complications at the last minute.

The day before the procedure, surgeons can practice on a realistic model and gain an advance understanding of issues related to their patient's physical characteristics. This represents a real revolution, paving the way for patient-specific surgery and an even more advanced human approach. BioModex is taking part in the 3DEXPERIENCE Lab program at Dassault Systèmes in order to help bring health care into the digital era more quickly and thoroughly, via mutually beneficial cooperation.

EVENT

ENERGIZING THE WORLD WITH THE WOMEN'S FORUM

An international event, the Women's Forum that took place in Deauville from 2015 October the 14th to 16th, 2015 sees itself as a "Women's Davos," aimed at bringing together business, governmental, academic and cultural leaders from all over the globe. Dassault Systèmes shared in the ambitions of this event through its "Women INitiative" program which endeavors to recruit talented women and show our basic positioning within Life Sciences. Laurent Blanchard, member of Dassault Systèmes' executive committee, took part in the CEO champions meeting to highlight our determination to develop a sustainable strategic network.



The topic of the year "Energizing the world" which focused on health care was an opportunity for Dassault Systèmes to team up with our partner Roche to reveal the dynamism our colleagues. Moreover, Dassault Systèmes representatives actively co-organized sessions on the future of health care, particularly with regard to new practices and ideas in the area of new technologies and digitalization within a precision medical and health context, playing to a packed hall.

DESIGNING A HEALTHY LIFE

Biological 3D printing, predictive and personalized medicine, the Internet of Things, remote tracking, what will be our experience of health in the coming decades? New players are already imagining future health care at the core of digital, social and technological revolutions.

"The health care ecosystem will change dramatically in the near future," predicts **Isabelle Vitali, Head of Innovation and Alliances Development, Roche France.**

Advances in genomics will lead to more personalized drugs, but there is the

opportunity to go beyond drugs and develop integrative solutions. This involves using other tools such as Big Data, diagnostics and medical devices.

"If we want to transform health in the future we need to establish a new way to connect the patient to work with everyone involved in their care, from doctors to drug designers. New technologies offer the opportunity to redesign health care systems based on the collaboration and input of all stakeholders."

Anne Asensio, Vice-president Design Experience, Dassault Systèmes.

"Our technology cannot work at its best with the way health care is currently organized." **Lyse Santoro, chief executive officer, Magnisense.**

THE AGE OF DIGITAL HEALTH IS COMING!

Personalized health draws on all aspects of our lives. Citizens evolve from being passive recipients of medical care to empowered managers of their own health. How can technology enhance this transformation?

"Big changes are at work in the world of digital health, with new advances in data collection opening the door to "precision medicine".

Caoimhe Kiely, BIOVIA Vice-president marketing, Dassault Systèmes, said.

"We understand biology better than ever before which is leading to a change in the very mindset of how medicine can work. We can now target the root causes of many diseases, he noted, not just the symptoms. This can be done through genome sequencing and also through harnessing data from sources like social and medical records."

Guillaume Kerboul, Life Sciences Business Consultant Director, Dassault Systèmes.

"By processing sequences from all around the world we can build standardized models against which people with medical conditions can be compared and the differences in cell characteristics observed."

Anne Goupil-Lamy, fellow, BIOVIA Science Council, Dassault Systèmes.

COP21

FOR THE PLANET

The 2015 Paris Climate Conference was held from November 30, 2015 to December 12, 2015 at the Le Bourget Exhibition Center outside of Paris. It was the 21st Conference of the Parties (hence the name COP21) of the United Nations Framework Convention on Climate Change (UNFCCC). The international summit was attended by 195 countries and concluded with an international agreement signed on December 12, 2015, and approved by all participating nations, setting a goal of keeping global warming to below 2°C and to further decrease temperatures to 1.5°C by 2100.



” **SUSTAINABLE INNOVATION IS AN INHERENTLY SYSTEMIC, HOLISTIC APPROACH**

INSIGHT FROM

Valérie Ferret, Public Affairs and Corporate Responsibility Director, Dassault Systèmes

The COP21 was pushed forward by the pressure of public opinion, political will, and historic commitments from the US and China. It also brought together stakeholders offering solutions for reducing our long-term negative impact on the environment. Dassault Systèmes has worked

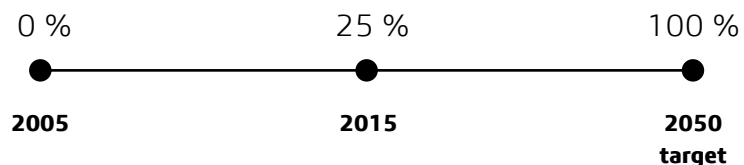
diligently for many years to help change our habits. The power of digital technology has the potential to optimize, and, increasingly, radically reshape all the sectors in which our customers operate. Digital technology enables us to understand, act, accelerate, and anticipate in retail,

transportation, energy, and urban planning. The approach is inherently systemic and holistic.

RENEWABLE ENERGY IN CHINA



WORLD'S LARGEST PRODUCER OF WIND POWER.



\$80 BILLION INVESTED IN GREEN ENERGY IN 2014, AS MUCH AS EUROPE (\$46 BILLION) AND THE UNITED STATES (\$34 BILLION) COMBINED.



100% RENEWABLE ENERGY (ELECTRICITY, DISTRICT HEATING, AND TRANSPORTATION).

SUSTAINABLE MOBILITY

AKKA TECHNOLOGIES INVENTS THE FUTURE OF TRAVEL

A fully autonomous, continuously connected electric vehicle that communicates with the smart infrastructure in its city via sensors and applications accessible on the cloud. That's the vision for sustainable mobility at AKKA Technologies, which developed Link & Go 2.0 in partnership with Dassault Systèmes, using technologies on the 3DEXPERIENCE platform. The driverless electric concept car features technological innovations that automakers can incorporate in their future vehicles.



WestRock is one of the world's largest paper and packaging companies with US\$15 billion in annual revenue and 42,000

employees in 30 countries. WestRock uses our Perfect Package solution to deliver innovative packaging faster to brand manufacturers, reducing delivery time from 18 to 6 months. WestRock supplies more than

US\$1 billion worth of paperboard cartons through its processing equipment and uses Perfect Package to design the cartons with a focus on efficiency and cost-saving materials to support their customers' sustainability efforts.

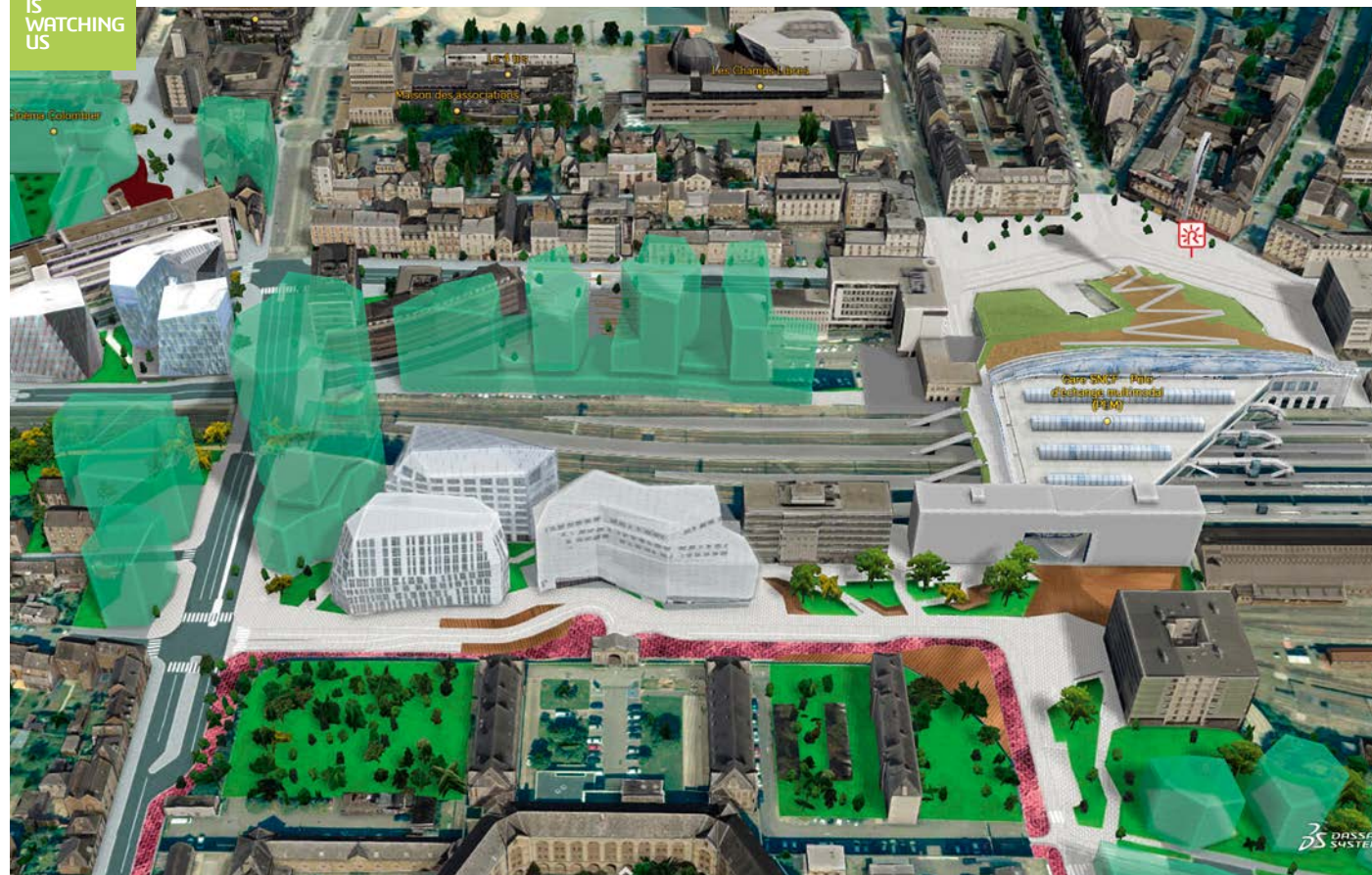


GLOBAL 100 OF THE MOST SUSTAINABLE CORPORATIONS

DASSAULT SYSTÈMES
NO. 2
WORLDWIDE

The 2016 Corporate Knights Global 100 index of companies that excel in sustainable development ranked Dassault Systèmes number two, just behind BMW, with an overall score of 75.7%.

The index used 12 performance indicators to assess 4,353 companies with market capitalization of over US\$2 billion.



SUSTAINABLE CITY

RENNES, CHAMPION OF SUSTAINABLE CITY PLANNING

The city of Rennes was present at COP21. Or rather its digital referential, the first of its kind in France, created by 3DEXPERIENCE. 3D design tools and simulation functionalities on the 3DEXPERIENCE platform were used to model the city's buildings, architectural superstructures and infrastructure. The virtual model offers a meeting place for all the city's stakeholders – elected officials, residents, developers, planners, architects, entrepreneurs, energy suppliers, water utilities, waste treatment managers, transportation systems, and communications networks – to collaborate and innovate together as they plan and build the city of the future.



SEEN ELSEWHERE

SMART GRID

AN INTELLIGENT SOLAR DISTRICT DEMONSTRATOR

The Nice Grid project prominently features local photovoltaic electricity production, energy storage units and connected electrical equipment. It enables the inhabitants participating in the experiment to manage their energy consumption, and is backed by innovative technologies, a connected meter and the existing electrical infrastructure, to test the smart grid concept as a whole.



ENERGY TRANSITION

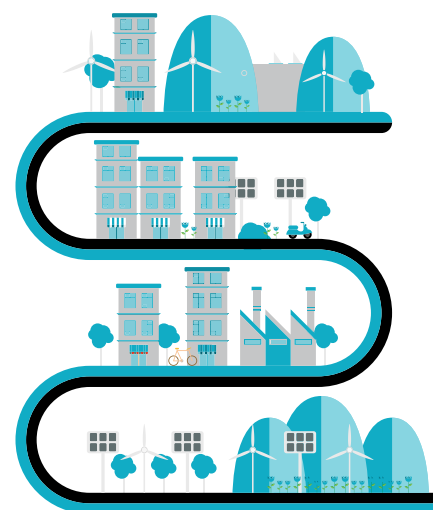
SOLAR IMPULSE MAKES THE IMPOSSIBLE POSSIBLE

Pilot an aircraft powered solely by the sun? Bertrand Piccard, André Borschberg and the entire visionary, passionate Solar Impulse team rose to the challenge, building a plane capable of flying day and night solely on solar energy. The team developed revolutionary technologies: foam insulation in the cockpit to protect the pilots from extreme temperatures, a system for detecting fatigue and

alertness, and ultra-thin solar cells that are more efficient than those used for buildings. These innovations and many others helped Solar Impulse successfully complete its flight around the world. The adventure was carefully planned, designed, and tested using virtual technologies from Dassault Systèmes, without which Solar Impulse would have never taken off.

AIMING FOR 100% RENEWABLES

DURING COP21, MANY COUNTRIES ANNOUNCED AMBITIOUS TARGETS



SCOTLAND:

100% renewable energy **by 2020:** wind, hydro, biomass, solar, tidal, and wave power.

DENMARK:

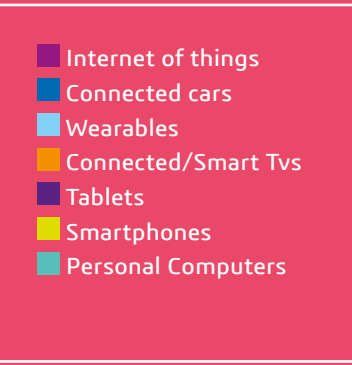
100% renewable energy **by 2050:** solar power, wind, hydro, and biomass power. **In 2014,** 50% of electricity in Denmark came from renewable sources, 39% of which was wind power.

TOKELAU (territory of New Zealand): 100% solar energy in 2016.

In 2015: 94% of electricity came from renewable sources.

NEW ZEALAND:

90% renewable energy **by 2025:** hydro, wind, and geothermal power.



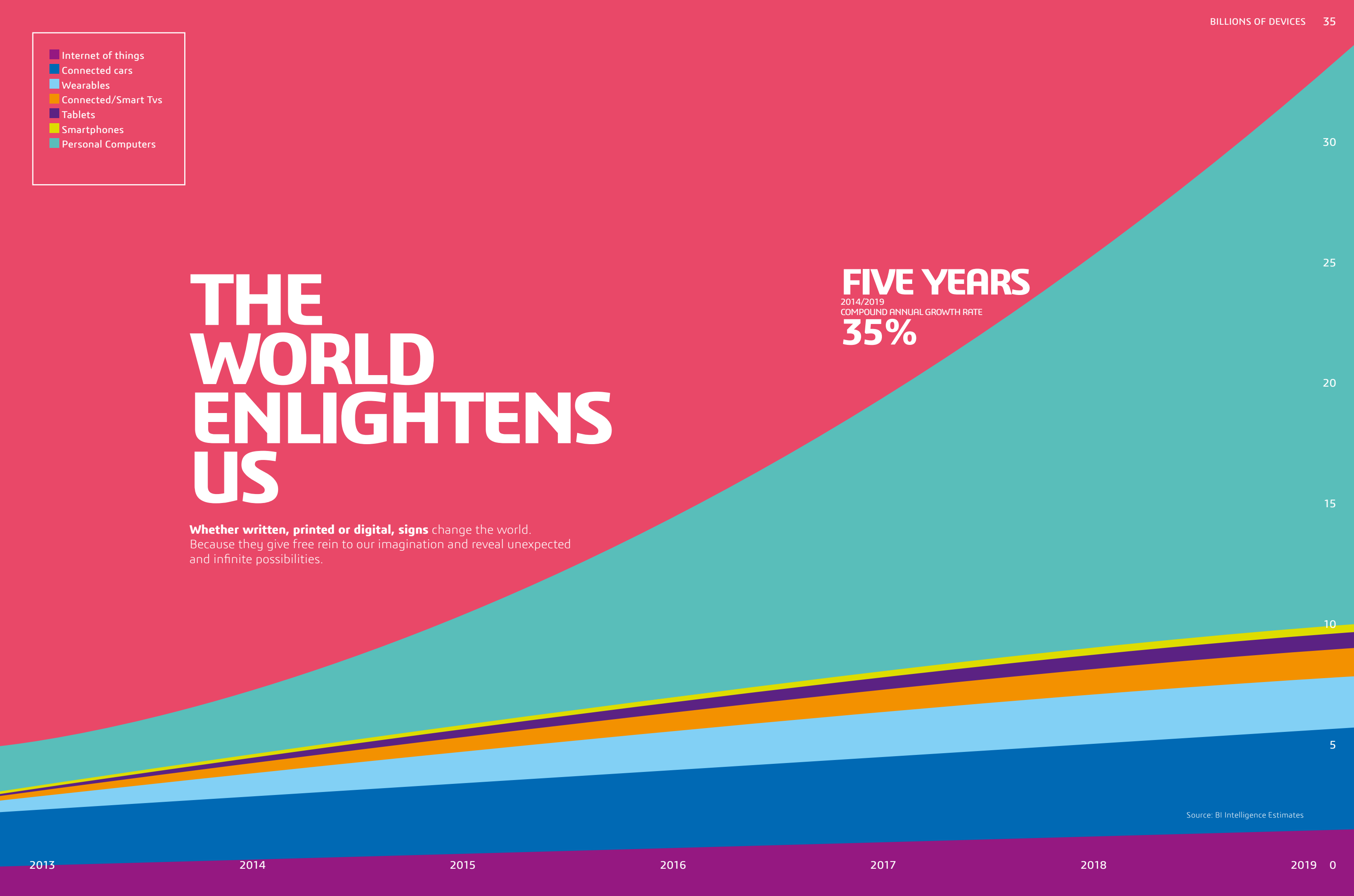
THE WORLD ENLIGHTENS US

Whether written, printed or digital, signs change the world. Because they give free rein to our imagination and reveal unexpected and infinite possibilities.

FIVE YEARS

2014/2019
COMPOUND ANNUAL GROWTH RATE

35%



Source: BI Intelligence Estimates

SINGAPORE DREAMING THE SMARTCITY

Dassault Systèmes' **3DEXPERIENCity** solution is providing the Virtual Singapore platform with a digital referential of the city. Sustainable, connected and participative – the city truly is becoming smart.



” THE PROMISE OF A VIRTUAL SINGAPORE

INSIGHT FROM

George Loh,
Director Programmes, Singapore National Research Foundation

Singapore faces many challenges and our researchers are attempting to address some of them by developing models and through simulation. We decided to work on 3D models – the starting point for the Virtual Singapore project – and when we found about the 3DEXPERIENCE platform, we knew it would provide

us with an opportunity to build a virtual Singapore to work on and test out scenarios. There is a huge influx of data in the world today, which will be increasingly generated dynamically in real time, via connected devices and the Internet of Things. We are running an experiment that draws on data from the urban environment, while also giving our students a firmer

grasp of data about themselves. Our partnership with Dassault Systèmes has been honest and open, both in terms of our relationship with the R&D team and management as a whole. Our goals are perfectly aligned.”



PROJET MANAGEMENT

VIRTUAL SINGAPORE

is led by the Singapore National Research Foundation, in partnership with the Singapore Land Authority and the Infocomm Development Authority of Singapore. The gradual roll-out of the project is expected to be completed in 2018.



3DEXPERIENCity

THE VIRTUAL SINGAPORE PROJECT IS BACKED BY THE 3DEXPERIENCity SOLUTION, WHICH WAS DEVELOPED BY DASSAULT SYSTÈMES IN 2012 AND ENHANCED IN APRIL 2013 BY THE ACQUISITION OF TERRITORIAL-MODELING SPECIALIST ARCHIVIDÉO. THE PROJECT IS MUCH MORE THAN SIMPLY A 3D VIEW. IT'S A DIGITAL INDEX OF THE CITY – EVERY BUILDING IS IDENTIFIED IN THE SYSTEM, ALONG WITH DATA ON ITS CONSTRUCTION, MANAGEMENT, AND THE TRANSPORTATION AND ENERGY NETWORKS THAT SERVE IT.

JUNE 2015

DECISION AND AGREEMENT

Dassault Systèmes develops Virtual Singapore, in collaboration with the Singapore Research Foundation, to provide 3D modeling of the city for government, business, researchers, and citizens.

SEPTEMBER 2015

SENSg TRIAL

WITH SINGAPOREAN STUDENTS BY THE SINGAPORE NATIONAL RESEARCH FOUNDATION

SENSg: A LABORATORY WORN AROUND THE NECK

Designed and developed by researchers at Singapore University of Technology and Design (SUTD), SENSg is a small box that is worn around the neck. A full-fledged miniature laboratory, the device has sensors that measure travel, number of steps taken, temperature, humidity, atmospheric pressure, light intensity, and sound pressure levels. It uses Wi-Fi signals to identify its location and upload the collected data to a secure database, once a known hotspot is within range. The data is anonymous, stored securely, and can be viewed by the participants that produced it.

DECEMBER 2014

PRESENTATION OF THE 3DEXPERIENCE SOLUTION DURING THE VIRTUAL SINGAPORE CALL FOR TENDERS

In 2005, Singapore launched iN2015, a 10 year-program to transform the city-state into an intelligent nation, a global city. The agency in charge, the Smart Nation Programme Office, reports directly to the Prime Minister's Office.

JUNE-SEPTEMBER 2015

CONSTRUCTION OF VIRTUAL SINGAPORE



DECEMBER 2015

PRESENTATION OF THE FINAL PLATFORM AND EMBEDDING OF ALL TRIAL DATA



VIRTUAL SINGAPORE

DATA

NSE AND DATA CROWDSOURCING

The National Science Experiment (NSE) has two main goals: to introduce students to the practical applications of science, technology, engineering, and mathematics, and to gather data on their environment that can be input into Virtual Singapore. Organized by the Singapore National Research Foundation and a number of partners from the academic and scientific world, the program kicked off in 2015 with a pilot project involving 300 young Singaporeans. There were 45,000 participants by the end of 2015, and more than 250,000 students are expected to take part by 2017. The participants are provided with a SENSg, a device capable of gathering multiple types of physical data on the environment. This information is sent to a central server using wireless technology. The students can view data about themselves online, such as number of steps walked, time spent outdoors, travel, and their carbon footprint. Projects like SENSg will help make the use of big data perfectly normal for the participants.

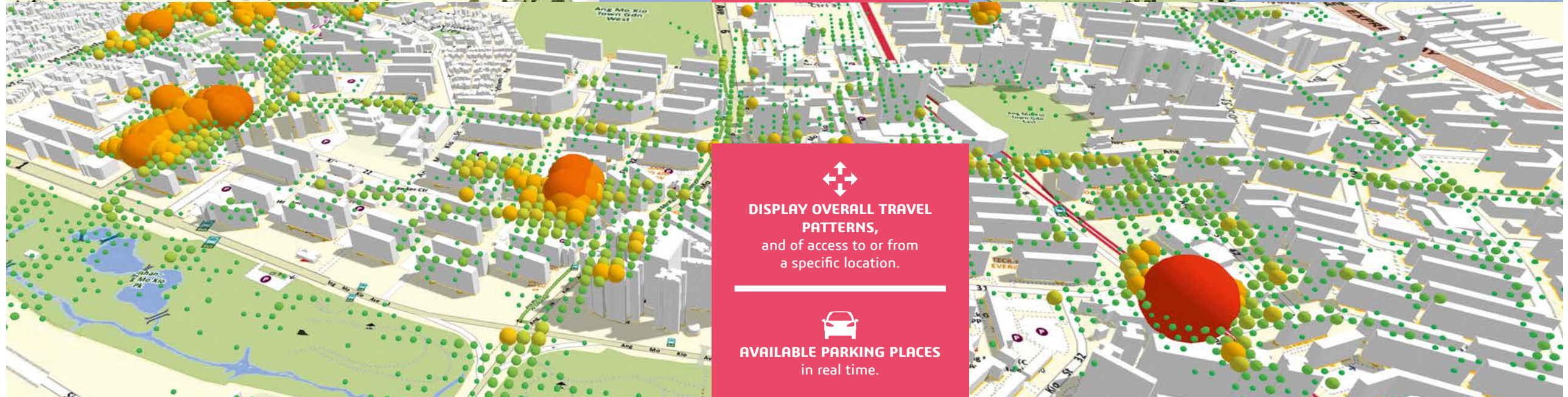


DATA CONSOLIDATION

Virtual Singapore uses both data gathered from various public institutions and data collected in real time. The platform serves as a single point of access for content and applications originating from several sources, in multiple formats. The content can be real-time, proprietary, open data, system-based, or from connected objects.



CALCULATION OF THE PERCENTAGE OF LIGHT AND SHADE
for each building, in relation to the position of the sun.



DISPLAY OVERALL TRAVEL PATTERNS,
and of access to or from a specific location.



AVAILABLE PARKING PLACES
in real time.



WEATHER SIMULATIONS
(winds, currents, etc.)

THE INTERNET OF EXPERIENCES

The first experience with a product is essential to its success and in acquiring new customers. Achieving an optimal design is a major challenge for companies with design teams spread across the world and complex development processes. With open innovation, these processes extend beyond the scope of the company, fueling the hybridization of new ideas by bringing together start-ups, industrial companies, and research laboratories in inventive collaboration.

Meanwhile, the staggering growth of connected objects – about 4 billion exist today and the figure will reach 20 billion in a few years – is ushering in the era of the connected experience, the Internet of Experiences. Dassault Systèmes helps companies in all sectors to offer captivating, connected experiences to their customers, in line with one of its central goals: improving people’s lives.



” ENCOURAGE INSPIRATION AND CONCEPTUALIZATION AND FACILITATE THEIR TRANSFORMATION INTO TANGIBLE EXPERIENCES AND PRODUCTS

INSIGHT FROM

Olivier Ribet,
Vice President High-Tech Industry, Dassault Systèmes

“To be successful, open innovation must efficiently bridge the gap between the generation of ideas and their transformation into tangible product experiences. With the Design Studio’s experience thinking consulting services, our ‘Social Ideation’ industry solution experience and partnership with bluenove, Dassault Systèmes aims to further support and develop

its high-tech customers’ innovation initiatives. Our goal is to foster inspiration, ideation and identification of the best ideas, and facilitate their transformation into world-class designs, engineering excellence and successful projects.”

” CONNECT IDEAS AND INFORMATION FROM OPEN INNOVATION WITH PRODUCT DEVELOPMENT

INSIGHT FROM

Martin Duval,
President and COO of bluenove Group,
an open innovation consulting firm

“Trends and technologies such as big data, connected objects, mobile services and 3D printing are changing how companies innovate—while startups have long been sources of disruption, large industrials are now establishing open innovation programs to harness resources that can drive the evolution of industries. Using the **3DEXPERIENCE** platform, these companies can now work much more efficiently. The ideas, intelligence and

data that are generated from bluenove’s open innovation strategies can now be connected with product development on a single platform, simplifying the overall innovation process.”

FOCUS ON

bluenove, an open innovation consulting firm.

Founded in 2008, bluenove is a major player in open innovation consulting and services and collective intelligence, based in France and Canada.

THE CONSUMER ELECTRONICS SHOW

STARS OF LAS VEGAS

Dassault Systèmes was an exhibitor at CES for the first time at this year's show, held from January 6 to 9, 2016. The booth was organized around three themes: dream, create, and live. The themes represent three high points of every memorable experience: dreaming about it, creating it, and living it.

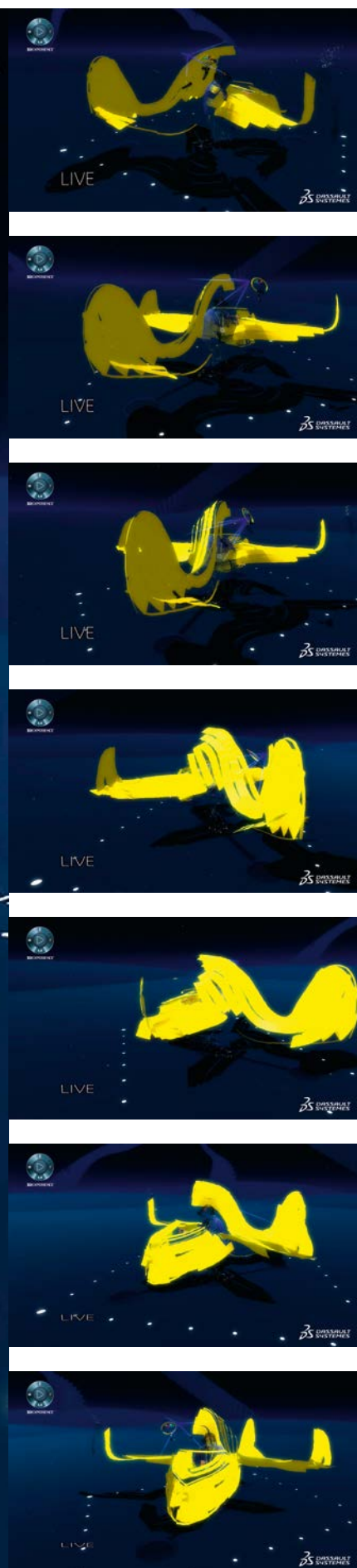
DREAM

It always starts with a dream. Each exceptional experience. Each disruptive innovation. Each pioneering project. Dassault Systèmes simply helps each dream take shape. Immersed in a virtual reality experience, the participants quickly and intuitively drew shapes created by their imagination. The "pencil" strokes were applied to a 3D space, so their virtual sketches had depth and volume. The other visitors were able to watch on a screen as the "dreamer" drew in the digital space. The system was set up in partnership with HTC, maker of the virtual reality headset.


500 VISITORS PER DAY TO THE BOOTH


240 PARTICIPANTS IN THE DREAM EXPERIENCE


MORE THAN 5,000 SOCIAL MEDIA HITS (CLICKS, RETWEETS, SHARES, PROFILE VIEWS...)



CREATE

What happens once a dream has taken shape? Visitors discovered how innovative companies use virtual universes to make the dream a reality, through various mechanisms. They were able to watch videos on the different phases in the lifecycle of a product – from the initial concept to release on the market – on a gesture-recognition touch screen. Nearby, the real met the virtual with the Skully AR-1, the first augmented-reality motorcycle helmet, featuring a 180° degree camera and heads-up display, presented alongside the Baxter robot from Rethink Robotics. Both in three virtual and physical dimensions, and both designed by SOLIDWORKS. Another guest at the booth was Poppy, an open-source robot produced entirely using 3D printing, which is connected to a virtual referential, whose every movement is automatically mirrored by the physical model. Finally, the Voxel8 and Nano Dimension printers demonstrated simultaneous 3D printing, which produces the shell and electronics of a product at the same time.



LIVE

The Internet of Things focuses on products and services activated by connected objects, whereas the Internet of Experiences seeks to improve daily life. We are now able to experience life in 3D: housing, cities, transportation, shops, the human body, and health. Virtual reality is set

to reshape life as we know it. When operating the NETVIBES Dashboard of Things (DoT), users truly become magicians who concoct magic Potions, because in addition to remotely controlling devices, DoT can make applications, devices, and social networks interact with each other. Welcome to the programmable web!

SUSTAINABLE SOLUTIONS

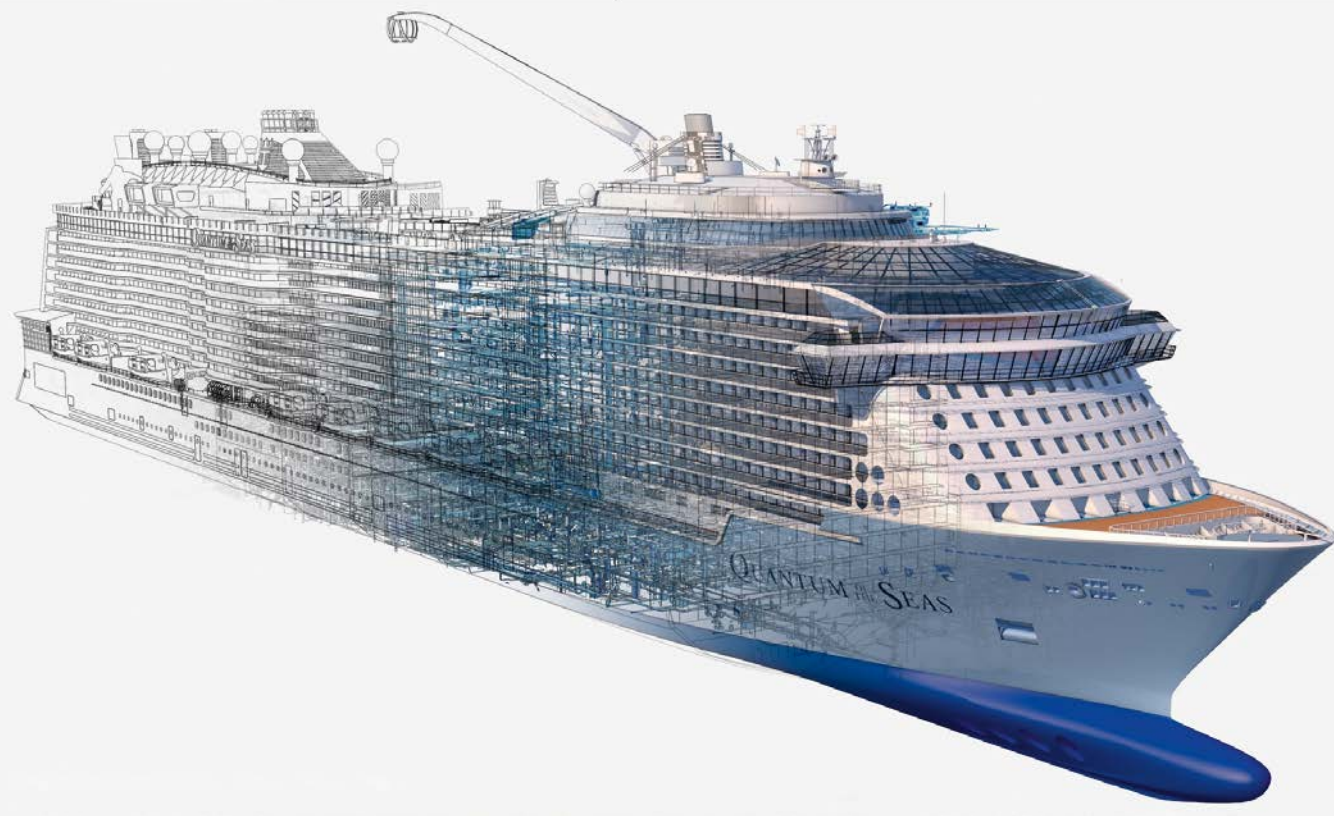
The **3DEXPERIENCE** platform helps mobility stakeholders to invent our future, by land, air and sea. Here are a few prime examples.

SHIPBUILDING

MEYER WERFT SAILS TOWARD A NEW DIGITAL ERA

Meyer Werft, the leading and one of the oldest German shipbuilders, founded in the 18th century, is implementing the On Time to Sea and Designed for Sea solutions to design and build cruise ships. The teams of designers

and developers at Meyer Werft now have access to a unified digital environment for monitoring a part of their ocean-going cruise ships lifecycle from their construction to partial operations.



AUTOMOBILE

BMW DRIVING SUSTAINABLE INNOVATION WITH REALISTIC SIMULATION

Aggressive lightweighting measures are necessarily becoming key strategies for carmakers seeking to meet increasingly stringent worldwide requirements for better fuel economy and reduced tailpipe emissions. At the same time, customer expectations are also increasing in terms of vehicle performance, sustainability, the overall driving experience but also safety. With BMW i, these challenges are being addressed boldly through energy-saving technologies combined with highly innovative design thinking.

BMW Group chose Abaqus finite element analysis (FEA) from Dassault Systèmes' SIMULIA to provide the

predictability needed to design the passive safety for the i8 virtually. A tightly integrated feedback cycle validated the Abaqus models against physical test results at every design stage, from material to component to subsystem to full vehicle.

Confidence in the predictability of design simulations enables design optimization. For the i8, once the baseline BiW design was established, BMW Group engineers subsequently optimized the design by tuning laminate thickness, ply orientation and stacking sequences, achieving an additional weight reduction of more than 20 kg, without compromising

the passive safety performance and BMW's standards of comfort and quality.

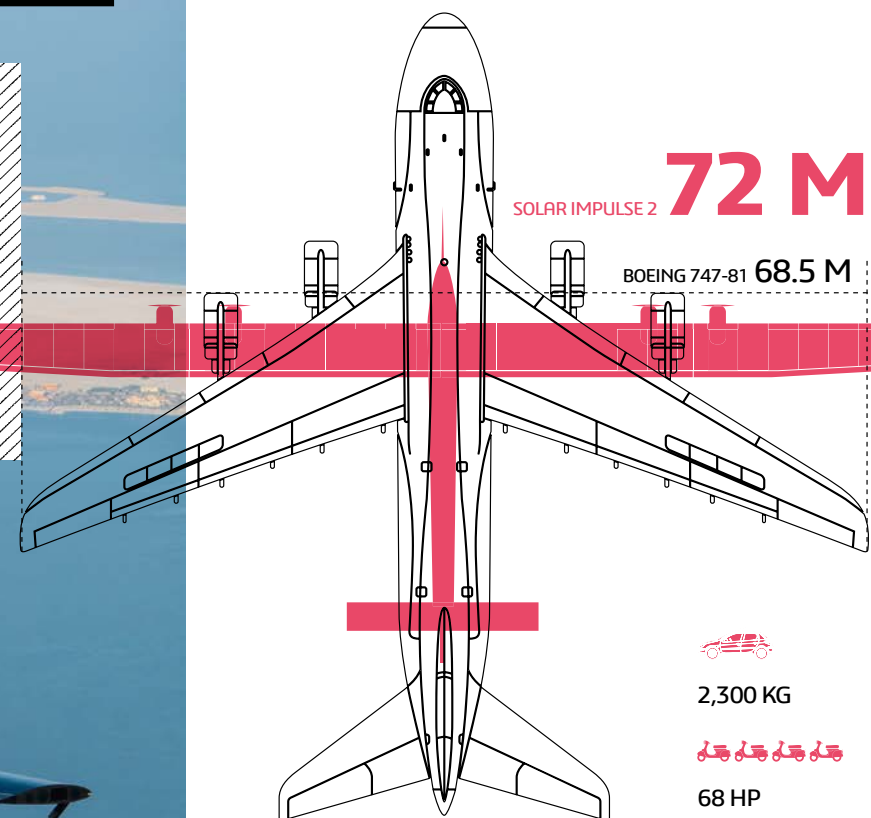
The successful passive safety design for the i8 has been a key factor in developing a totally new sustainable car architecture, and delivering an innovative vehicle that combines sporty driving performance with lower fuel consumption and decreased emissions. Now appearing on highways around the world, one automotive reviewer as called the i8 "the most significant and forward-thinking car on the road today."

CROSSING THE PACIFIC

SOLAR IMPULSE

IN BRIGHT SUNLIGHT

The first aircraft powered solely by solar energy has lived up to its designers' dream: demonstrating that clean technology and a pioneering spirit can change the world. Solar Impulse's flight from Nagoya to Hawaii lasted five days and five nights, proving that a kerosene-free airplane can fly longer than a conventional aircraft.



SOLAR IMPULSE 2

500 FLIGHT HOURS

Overall distance traveled of **35,000 km**

269.5 square meters of solar panels

90 person team

17,000 solar cells

12 years of design

0 FUEL ON BOARD

"Dassault Systèmes backed us from the outset."

INSIGHT FROM

André Borschberg, CEO, co-founder and pilot at Solar Impulse

"When the engineers started working on the project 12 years ago, their challenge was to achieve the size of a Boeing 747 and the weight of a car, in a nutshell. Dassault Systèmes backed us from the outset. There wasn't any aircraft like it. We were able to explore

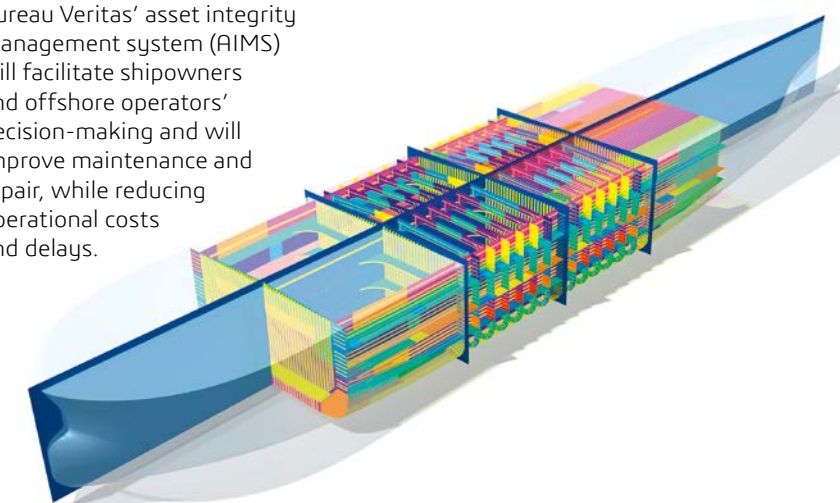
different directions and fully optimize the size and weight, in order to reach our goal and build an ultralight aircraft. In the past, we had used the trial-and-error method for this type of project. Make an attempt, run into difficulties, make improvements, make a second attempt, etc. But that only works for simple projects. When you reach the level of complexity that we did, the only solution is to seek perfection by using the right tools. That's where Dassault Systèmes stepped in, enabling us to push the project to the limits through design, calculation, and simulation. Without a doubt, it's faster, less expensive, and more efficient."



BUREAU VERITAS AND DASSAULT SYSTÈMES, PARTNERS DRIVING THE DIGITAL TRANSFORMATION OF COMPANIES IN THE MARINE AND OFFSHORE SECTORS

Bureau Veritas, a world leader in ship classification and certification, has entered into a strategic partnership with Dassault Systèmes for the continuous assessment of its customers' ships, offshore platforms and on-board equipment, throughout their life span. Connected to the 3DEXPERIENCE platform, Bureau Veritas' asset integrity management system (AIMS) will facilitate shipowners and offshore operators' decision-making and will improve maintenance and repair, while reducing operational costs and delays.

Shipowners and operators of all sizes have to manage and fulfill requirements including productivity, safety, and environmental protection. The collaborative platform connecting Bureau Veritas with its marine and offshore customers and their subcontractors will enable users to improve the efficiency, quality, and safety of their assets.



"Collaborate on every ship and offshore unit by linking with our VeriSTAR tools."

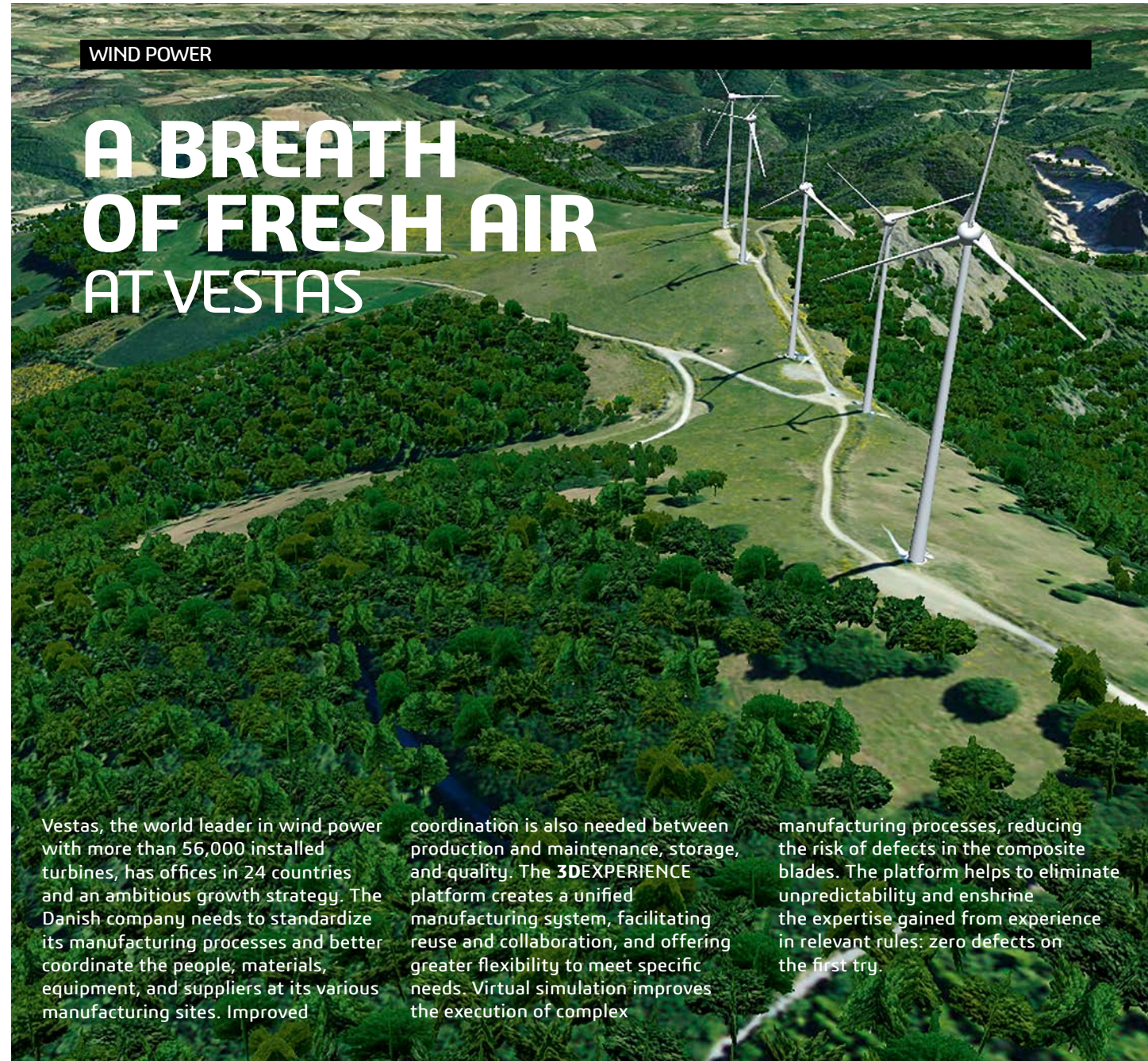
INSIGHT FROM

Didier Michaud-Daniel, Chief Executive Officer, Bureau Veritas Group

"The power of Dassault Systèmes' 3DEXPERIENCE platform will enable our engineers to collaborate on every ship and unit, link them with our VeriSTAR tools and save time and money for our clients while improving accuracy and traceability. This partnership with Dassault Systèmes and the initiatives which flow from it are some of the first steps in the digital transformation of Bureau Veritas."

NEW ENERGY

Far-reaching changes are underway that will shape how the world is supplied with energy. We are transitioning toward new ways of producing, measuring, recovering, using, managing, storing and transmitting electricity. The **3DEXPERIENCE** platform helps companies take a new approach to generating and supplying energy, in order to collaborate and innovate more effectively.



WIND POWER

A BREATH OF FRESH AIR AT VESTAS

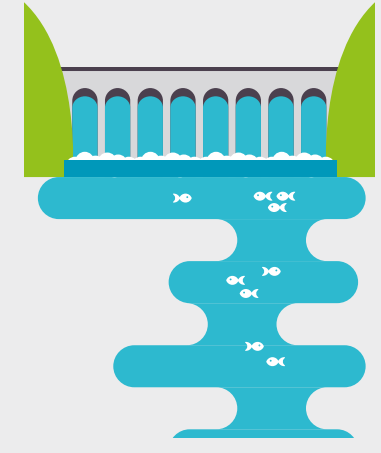
Vestas, the world leader in wind power with more than 56,000 installed turbines, has offices in 24 countries and an ambitious growth strategy. The Danish company needs to standardize its manufacturing processes and better coordinate the people, materials, equipment, and suppliers at its various manufacturing sites. Improved

coordination is also needed between production and maintenance, storage, and quality. The **3DEXPERIENCE** platform creates a unified manufacturing system, facilitating reuse and collaboration, and offering greater flexibility to meet specific needs. Virtual simulation improves the execution of complex

manufacturing processes, reducing the risk of defects in the composite blades. The platform helps to eliminate unpredictability and enshrine the expertise gained from experience in relevant rules: zero defects on the first try.

HYDROPOWER

DAMS IN HARMONY WITH THEIR ECOSYSTEM



China will have to substantially expand construction of hydroelectric dams in order to meet the targets it set during COP21. Yet, each dam represents a large-scale project requiring meticulous planning and sophisticated design and construction techniques, to minimize any negative impact on the ecosystem. HydroChina Chengdu Engineering Corporation, SimuTech, and Dassault Systèmes have partnered to create an R&D center in China. The goals of the center are to streamline the design and construction process, improve hydropower-engineering capabilities, and minimize the impact on nearby flora and fauna. When HydroChina Chengdu – a company that has designed more than 250 hydroelectric plants in China – began to grow internationally, it adopted virtual technology based on the **3DEXPERIENCE** platform to establish more precise design techniques, simulate the construction and operation phases, and manage projects more efficiently, from start to finish.



SMART GRID

THE FUTURE OF ELECTRICITY IS IN SMART GRIDS

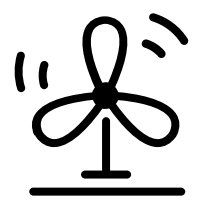
It is impossible to store large quantities of electricity easily, quickly and cost-effectively, whatever their source. Smart grid technologies adjust electricity generation and distribution in real time by prioritizing usage needs. The goal is to achieve optimal plant efficiency, avoid having to regularly build new capacity to meet peak demand, minimize line losses, and optimize the random inflows of decentralized generation, in particular from renewable sources. Smart grids, which pair electricity produced by various sources with emerging Internet-based control technologies, are poised to improve energy efficiency and reduce our impact on the environment, while also providing consumers with better information and energy-management capabilities. Dassault Systèmes connects information at city level for holistic control.



22,500 MW generating capacity of the world's largest hydroelectric dam, Three Gorges Dam in Hubei Province, China – enough power to simultaneously boil 100 million liters of water in electric kettles.



6 million kWh per year the average generating capacity of a land-based wind turbine with installed capacity of 2.5 to 3 MW.



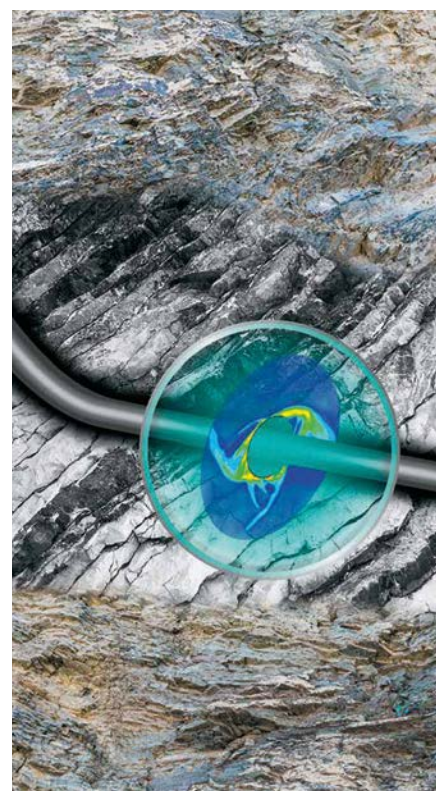
5 MW the standard installed capacity of an offshore wind turbine – twice as powerful as its land-based counterpart.

3D VISUALIZATION AND SIMULATION



INNOVATIVE SOLUTIONS FOR UNCONVENTIONAL RESOURCES

“This collaborative effort between ExxonMobil and SIMULIA has led to the development of fundamental improvements in simulation to address key drilling, completion and production challenges in the oil and gas industry. Advanced simulation technologies and 3D visualization play an increasingly vital role in the success of the energy industry and include such modeling capabilities as finite element analysis (FEA), computational fluid dynamics (CFD) and particle flow dynamics (PFD).



The visualization now possible with simulation allows you to do the interpretation—to spot either opportunities or flaws—a lot earlier. This impacts and affects the here and now much more so than ever before. So in the upstream business, visualization is a great aid, able to bring folks together with disparate types of information analyses and data to solve some very tough challenges.”

Bruce Dale,
Chief Subsurface Engineer, ExxonMobil



INSIGHT FROM

Melissa Kearns,
Senior Project Manager, SIMULIA R&D,
Dassault Systèmes

“For over 30 years, SIMULIA and ExxonMobil have had a collaborative relationship and the current engagement builds on this. Working together we have made significant advancements to SIMULIA’s numerical simulation tools to improve safety and productivity for many Oil and Gas industry applications. The current work is advancing fracture mechanics simulation technology to better understand the complex interactions between fluids and geological formations during hydraulic fracturing operations.”

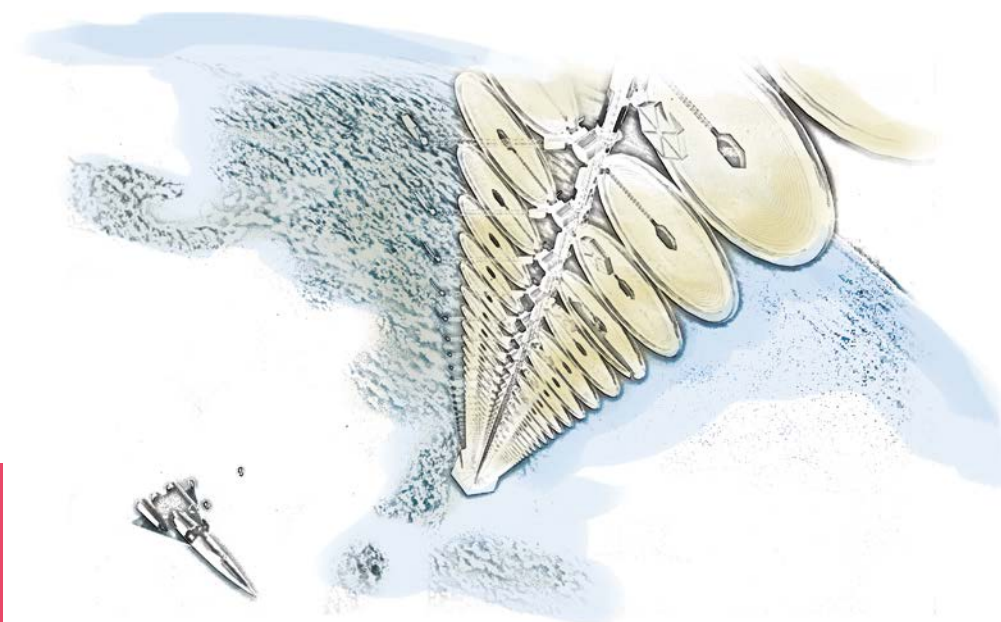


SMART NETWORKS IN ASIA

In 2013, China overtook the US in smart grid investment for the first time ever. Over the next decade, smart grid technology – traditionally the prerogative of the US and Europe – will be used widely by growing economies in Southeast Asia: Thailand, Indonesia, Malaysia, Singapore, and the Philippines. Total investment in microgrids, which can serve remote areas, is expected to reach US\$30 billion by 2023 (source: Navigant Research).

90%
of electricity produced in the US state of Washington comes from renewable sources: solar power, hydropower, wind power, biomass and geothermal power.
Source: www.eia.gov

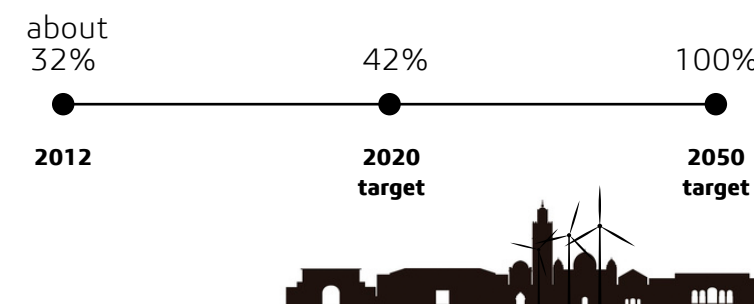
A SOLAR STATION IN ORBIT!



China is planning to build an orbiting solar plant that will use microwave or laser energy transmission to beam solar energy to a gigantic antenna on Earth. The advantage of placing a solar plant in orbit is that day-and-night cycles, weather, and the seasons become irrelevant, because the sun is always shining. An experimental plant is planned for 2030, with commercial operation by 2050.

MOROCCO EMBRACES THE ENERGY TRANSITION

Renewable energy sources – solar power, hydropower, wind power, and biomass – are making progress in Morocco, where they now cover 32% of energy needs.



THE WORLD INSPIRES US

The power of digital platforms and virtual worlds lies in their ability to both design sustainable global solutions as well as unique experiences.

Couture Accessories designed in 3D digital and manufactured in 3D Print.
Phoenix Collection - Fall-Winter 2015-2016 - by Julien Fournié.



BREAKTHROUGH INNOVATIONS

3DEXPERIENCE

Like start-ups, Dassault Systèmes places innovation as the core of its growth model. The company created the 3DEXPERIENCE Lab to nurture and empower disruptive projects that help transform society.



3 QUESTIONS FOR

Frédéric Vacher,
Director of the 3DEXPERIENCE Lab,
Dassault Systèmes

How did the project come about?

F.V.: It's essentially a governance project that enables each employee to become a social innovator. The team acts as a network of ambassadors, working to set up projects with a selection committee that reviews the projects and unites them under a single banner: the 3DEXPERIENCE Lab. The idea is to make the selected projects collaborative. Each innovation can be led by an outside start-up, but it is often enhanced by a research laboratory, the innovation division of a large corporation, a school, or mentors from Dassault Systèmes, who are able to bring together the best and the brightest to achieve societal transformation.

How are the projects selected?

F.V.: The projects must meet three criteria: offer a product or service that represents a disruptive innovation, draw on collective intelligence, and transform society in a positive way. Eligible projects are then reviewed in relation to the themes: city, life, lifestyle, connected objects, fab labs, maker movements, ideation, and the innovation process. The selection committee approves projects every quarter. As a result, we have an effective framework for getting these start-ups off the ground.

What does the framework consist of?

F.V.: It's a one-year contract, which can be renewed for a second year, to provide the applications required for the project to succeed on the cloud

platform and, most importantly, an expertise and mentoring system. The team of mentors is recruited from within Dassault Systèmes, not only from technical fields, but from support, marketing, IT, and communications as well. Each mentor can devote 10% of his or her working hours to the project. The initiative has a social role within the company, because it enables people who don't usually work together to team up on a project that they are passionate about. It is also a space for free thinking that channels energy into societal projects. But all the while, there is managed, monitored governance and all the expertise required for success is provided to the companies, some of which end up becoming 3DEXPERIENCE platform customers.



XtreeE team

PARTNERSHIP



1 to 2 years
the time that start-ups participating in the program have access to the 3DEXPERIENCE platform, as well as expertise and support from Dassault Systèmes.

A LABORATORY AND AN INCUBATOR

On November 9, 2015, Dassault Systèmes launched the 3DEXPERIENCE Lab, a new initiative that combines an open innovation laboratory and a start-up incubator. The fledgling companies selected develop physical products capable of improving daily life, the urban environment or lifestyles, via solutions related to ideation, the Internet of Things, and the fab lab movement. WWW.3DEXPERIENCELAB.COM

VIRTUAL REALITY

BETTING ON EXPERIENCE

Cinema, media, real estate, amusement parks, marketing... Nowadays, no sector can escape from virtual reality, a market expected to reach US\$ 70 billion by 2020*.



INSIGHT FROM

David Nahon,
David Nahon, 3DEXPERIENCE Lab Immersive Virtuality Director, Dassault Systèmes

Virtual reality has long been used by innovation centers of major car or aerospace manufacturers for project review through digital mockups. Immersed in a CAVE (Cave Automatic Virtual Environment), designers and decision-makers can understand and change every aspect of a product. Recently the evolution of technology, fueled by the development of smartphones and their components, produced equipment that is lighter, less expensive and more individual. It's a real democratization of virtual reality, which opens up unprecedented possibilities, even if all equipment is not technologically equal.

No industry is spared from virtual reality fever: education, training – in a professional context such as in a boutique, assembly line, offshore platform, nuclear power plant...-, underwater exploration, leisure, marketing and experiential extension of brands... For the latter, our 3DEXCITE brand can be used for upstream marketing activities: design teams will be able to show a product team that has ordered a new vehicle design, a new store, or a new packaging the project very early in the development process. This will enable them to decide which products will be marketed, based on a virtual mockup. Not a technical

mockup but an emotional one. Virtual reality is not only technological, it is also perception. Immersion implies presence and presence is about something felt. Living the virtual naturally is, in a way, the ability to transpose the same quality of experience that we live physically. It's a challenge we take up every day at Dassault Systèmes.

HÄAGEN-DAZS PRESENTS DIFFERENT OPTIONS TO EACH OF ITS PARTNERS WITH THE PERFECT SHELF SOLUTION

INSIGHT FROM

Stanislas de Maleissye,
Senior Category and Trade Marketing Manager, General Mills France

"Whereas other solutions used by consumer goods companies can create 2D diagrams and 3D planogram views, none are able to recreate such a realistic store environment in 3D complete with aisles, shelves, products and virtual shoppers. The retailers we worked with for our Häagen-Dazs project were immersed in the virtual reality of their own store environment allowing them to give more pertinent feedback on layouts, lighting, positioning and signage. The virtual stores were so real, we were able to avoid the complexity and cost of installing a physical test store."



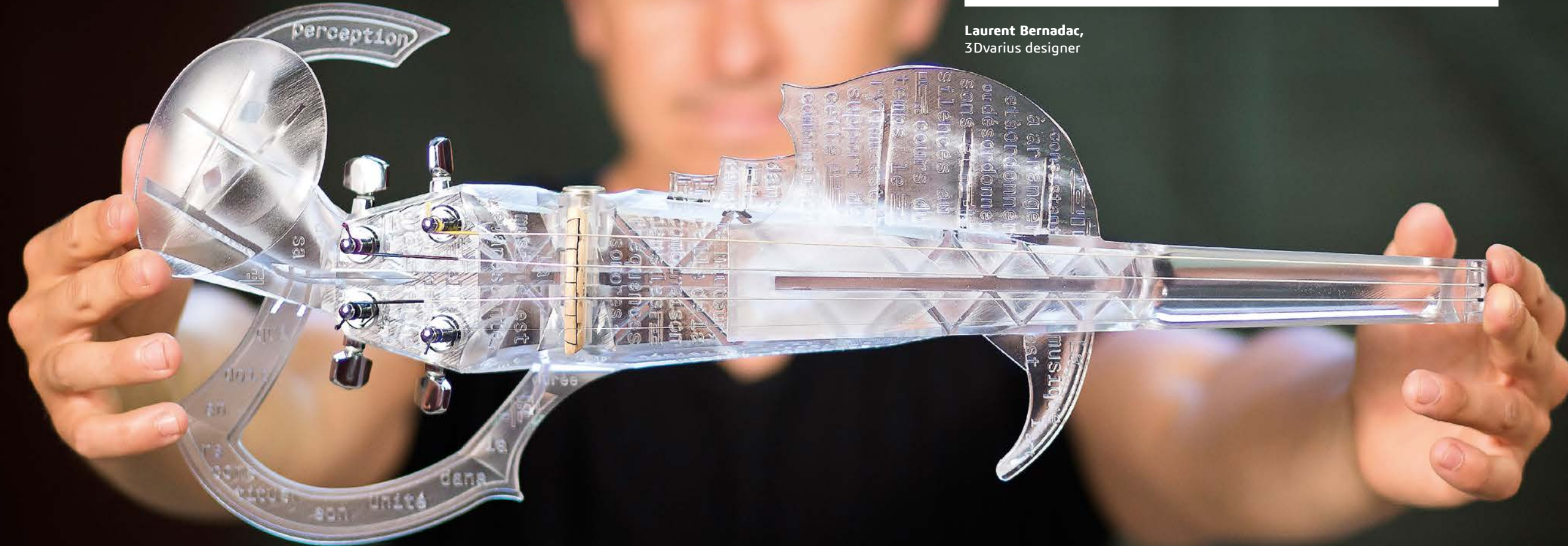
DS BRAND DISPLAYS THE FULL CUSTOMIZATION POTENTIAL OF THE NEW DS 3

A world first! DS, the premium brand of the PSA Group, presented the new DS 3 and new DS 3 CABRIO at the Geneva Motor Show, held from March 3 to 16, 2016. Setting up a virtual reality system enabled the brand to offer an immersive experience featuring all the customizable aspects of the vehicle. Using a HTC Vive headset and joystick, the DS Virtual Vision experience enabled visitors to explore and interact with the new DS 3 by choosing and swapping the colors and materials for the interior as well as the body, roof and wheel rims in a realistic and intuitive way thanks to the possibilities of 3DEXCITE.



3DVARIUS

MELODIES OF THE NEW WORLD



The unique design of the 3Dvarius combines the precision and performance of 3D printing with traditional violin-making techniques, marking a milestone in the quest for perfect symbiosis between musician and instrument. The designer of this one-of-a-kind electric violin, Laurent Bernadac, tells us more.

INTERVIEW WITH

Laurent Bernadac,
3Dvarius designer

Not every musician designs his own instrument. Tell us about yourself and what motivates you.

I'm 28 years old, I live in Toulouse and I'm a mechanical and energy engineer, as well as a professional violinist. I play the electric violin, and I was seeking a unique way to play it that differed from the classical violin, which I play as well. I wanted to take the electric violin in a new direction. I love to discover and invent new things, and I've always tried to improve details that bothered me in every violin I've tried, to add more

lightness. I try to reproduce the feeling of a classical violin on an electric violin, which has a more powerful, pure sound. This violin was really a personal project, driven by passion, to create an instrument that reflects who I am. I spent three years designing it, because I wasn't in a hurry and didn't have any orders to fill, since the violin was for me. My training as an engineer at INSA Toulouse was obviously helpful.

What are your sources of inspiration?

I'm inspired by all of my experiences, and when I am able to produce through precision and effort, by analyzing what works and what doesn't. Aerospace and space technology were a major inspiration, in particular for the design aspects. The violin is quite sleek – I wanted it to be as inconspicuous as possible, so that it almost disappears behind the musician. Light, yet with a strong identity. That's why it's clear and has a few curved shapes similar to aerodynamic designs. In aerospace,

we try to achieve solidity and strength, as well as reliability and lightness. I sought to do the same with my violin – the instrument had to have the least amount of material possible, with all the requisite characteristics in terms of strength.

How did the creation process unfold?

I used all sorts of digital resources. I did a lot of drawings, a lot of testing, and a lot of research on mechanics and sound waves. My school and former professors helped me a great deal and opened a lot of doors for me. I had originally wanted to make an aluminum violin, but the machining process used at that time unfortunately wasn't able to produce the design I was looking for. I was also looking for transparency and aluminum was not suitable. In the end, I opted for polycarbonate.

The 3D printing technique used is stereolithography, which offers precision as fine as one micron. This technology uses a UV laser to polymerize photosensitive liquid resin.



EDUCATION AND RESEARCH

INSIDE

LA FONDATION

On August 15, 2015, the group established La Fondation Dassault Systèmes, an institution dedicated to transforming the future of education and research by harnessing the learning and exploratory capabilities of 3D technology and virtual universes.

“HARNESSING THE LEARNING AND EXPLORATORY CAPABILITIES OF 3D TECHNOLOGY AND VIRTUAL UNIVERSES.”

3 QUESTIONS FOR

Marie-Pierre Aulas,
General delegate of La Fondation

How does the foundation assist the projects that it decides to support?

M.-P. A.: We provide grants, digital content and expertise in virtual technology to educational and research initiatives. Project initiators include academic institutions, research institutes, museums, associations, cultural centers and other public-interest organizations. As of early March 2016, we have already received 24 projects from 22 institutions.

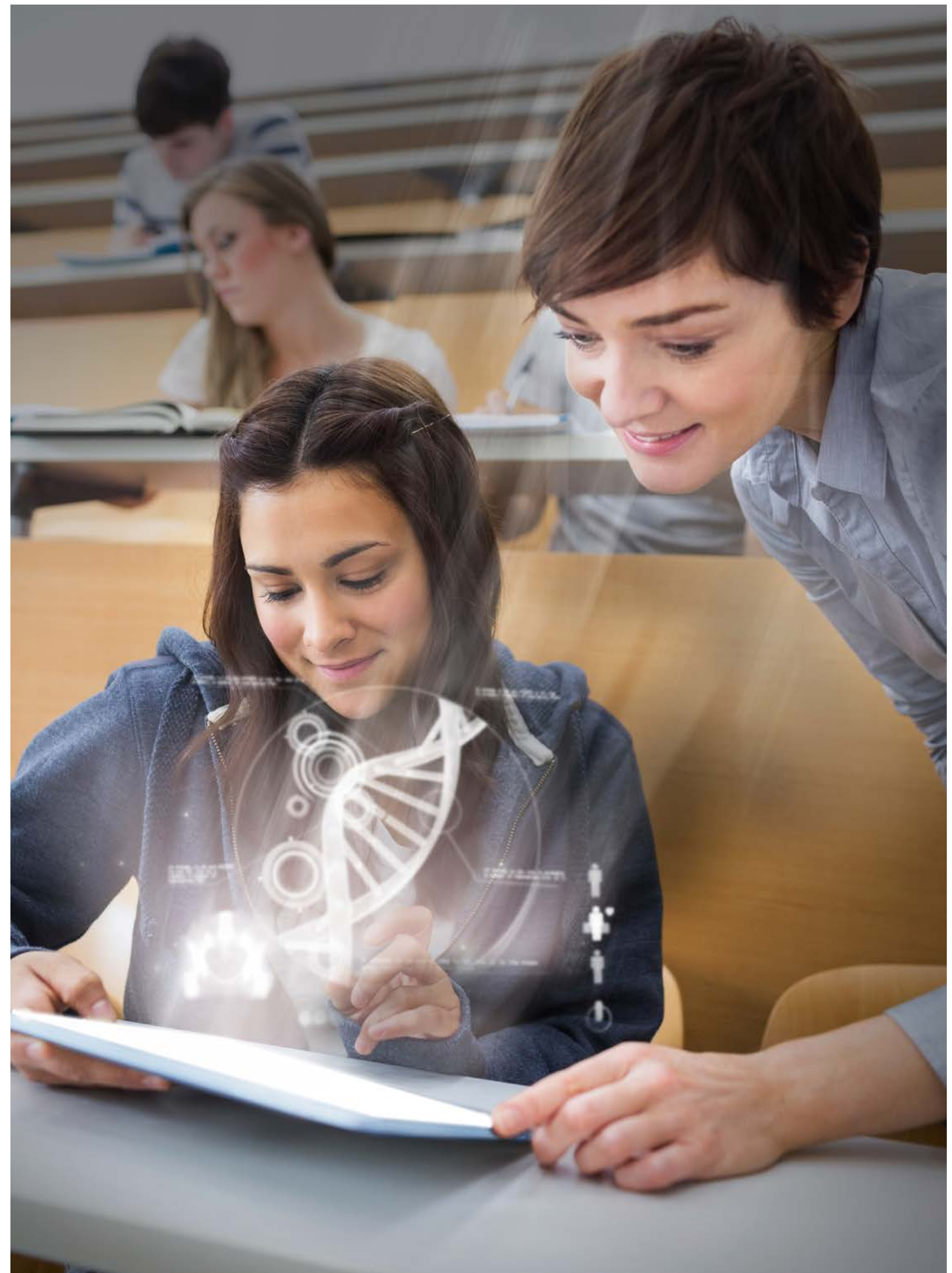
Out of those, are there any exceptional projects that you would like to support?

M.-P. A.: Yes, one of the exceptional projects comes from ENIM engineering school in Metz, which created a collaborative program with students in seven different countries: France, Peru, Chile, Mexico, United Kingdom, China, and Australia. They're working to shape the future of agriculture. Using an app that controls a drone and a robot, farmers can locate areas that need

weeding and apply herbicide in a very targeted manner, eliminating blanket use of the product. On a very different note, we are backing an initiative to transform education called Apprentis d'Auteuil, a foundation that provides support to 24,000 disadvantaged teenagers and preteens in France. We are financing a fab lab for the project. I should also mention that we also have a program for employees to volunteer their skills, and that we provide other means of support in addition to funding, although the financial aspect is important.

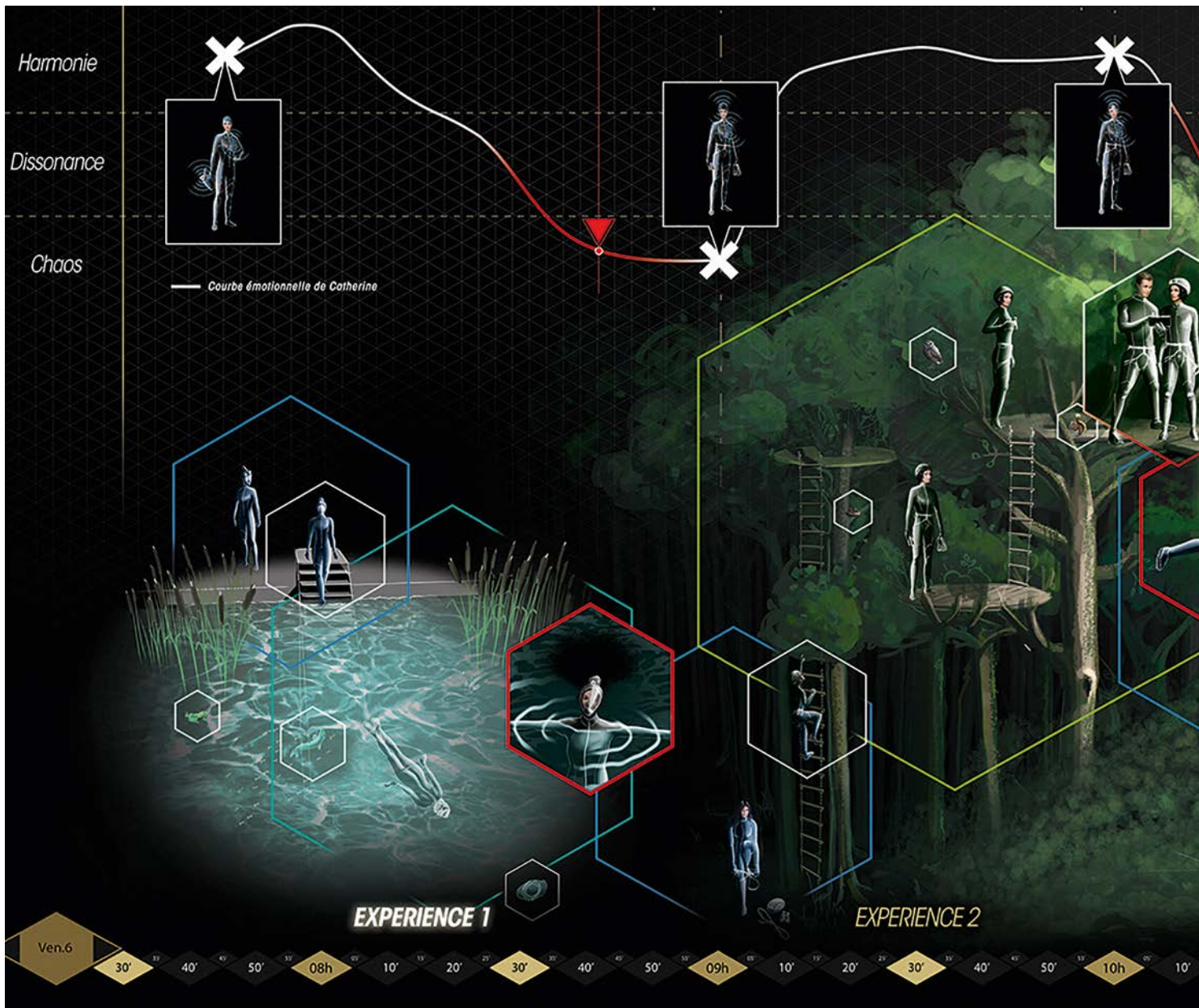
Do you back projects in areas outside training and education?

M.-P. A.: Education is our priority. We support also research, for example DRASSM, the department of subaquatic and underwater archaeological research at the French Ministry of Culture and Communication. DRASSM is the international authority in the field and is working with UNESCO to set up a virtualization platform for underwater archeological sites. The Atlantis 3D program is planning to digitalize a number of underwater historical objects. It's a scientific initiative that also has an educational component, in association with the maritime museums in Tours and Cherbourg. The institutions will be provided with all the virtual tools needed to explore this heritage, tying in with our goal to also reach the general public.



FROM PRODUCT TO EXPERIENCE: DISCOVER THE HARMONIE PROJECT

How do you create an experience? How to agree on what it should be for each of us?
How to guarantee its continued success? And what if we could build each moment
of our lives in harmony with the moment that preceded it, while ensuring that our
intentions and desires are fulfilled?

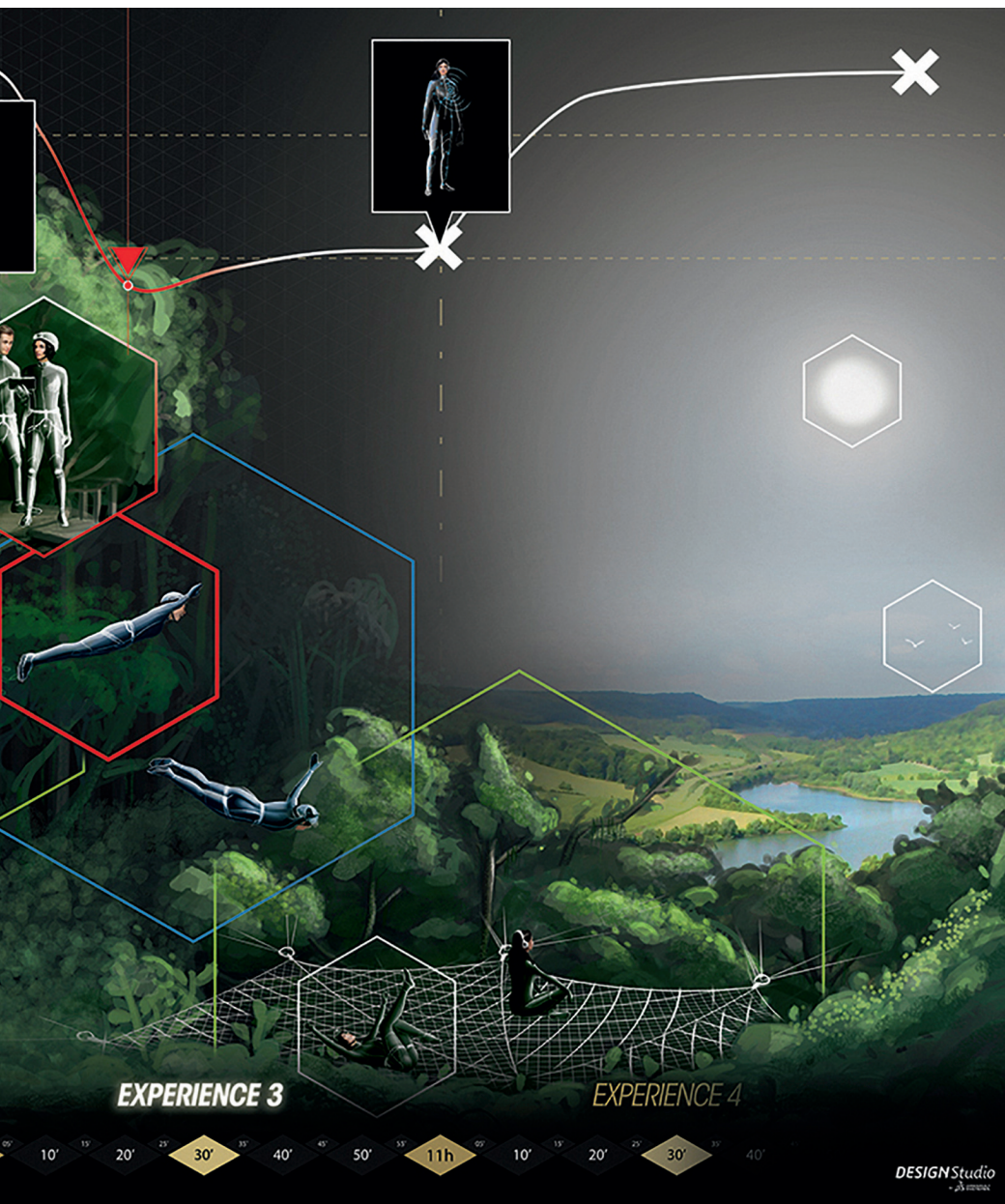


TODAY, PRODUCTS HAVE BECOME "EXPERIENCES".

Where companies yesterday offered branded objects, they today innovate by creating experiences, which have to make sense to us and capture our imagination. At Dassault Systèmes, we studied the notion of experience. We explored its holistic description in depth while thinking of new design methods on the innovation space that is the platform. The phenomenon is linked to

our history and to a multitude of connections that makes sense "in our view".

People feel a series of emotions at different times that make the "here and now" a memorable moment. Our ambition with the Harmonie project is to understand human behavior and emotions. We have tried to define the conditions of a successful experience, to understand its components and to map out the associated imaginary elements. We explore the possible combination between the world's perception mechanisms and our knowledge of life sciences.



SOME GUIDING PRINCIPLES ARE APPLIED SUCH AS:

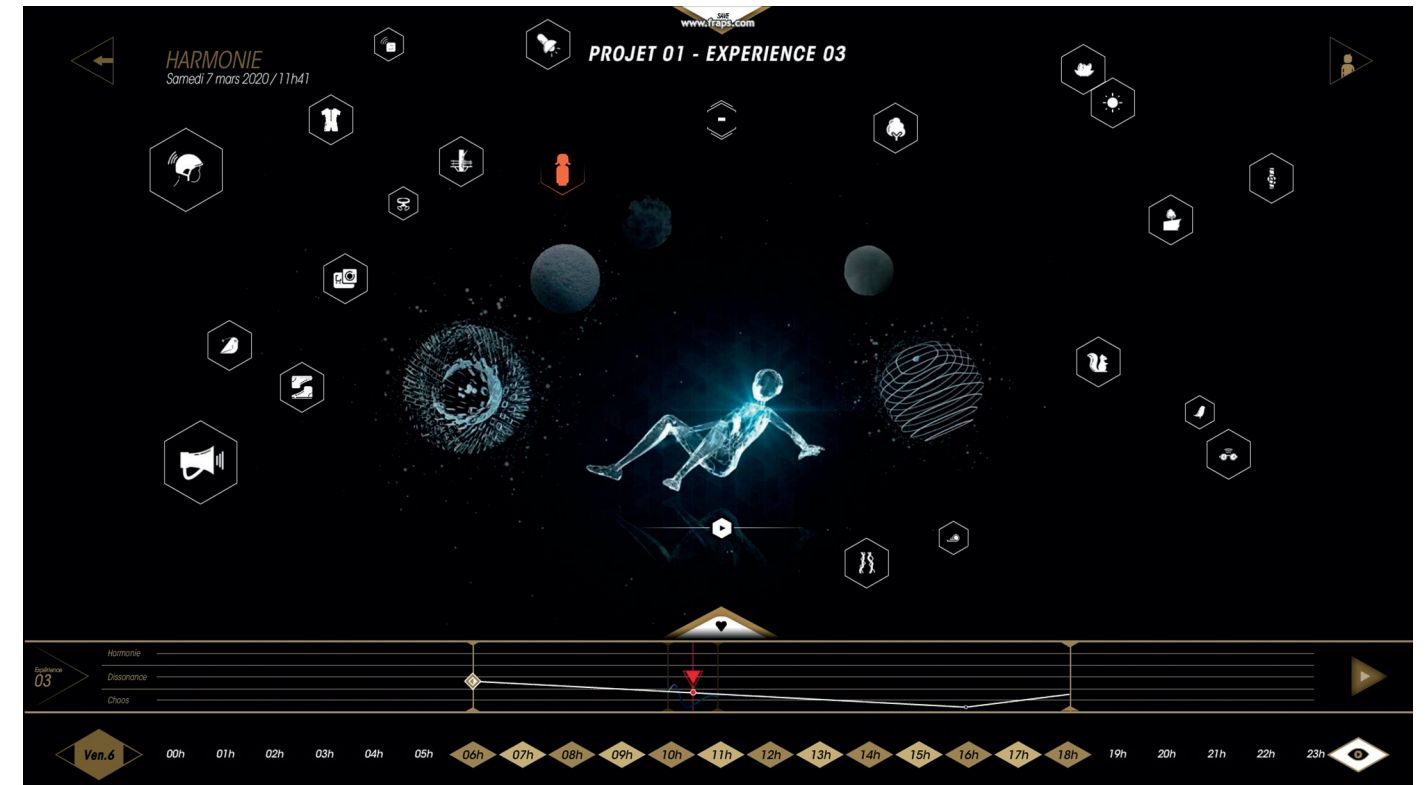
- **Reconcile body & soul** by integrating emotional criteria that will place humans at the heart of decision making
- **Seize upon infobesity** by learning to manage a wider variety of data to allow for a global vision of systems
- **Classify elementary structures and interpret** them (lexicon and language) to clarify abstract data such as emotions and imagination.

THE HARMONIE APPROACH IS DEPLOYED IN THREE KEY STEPS: KNOW, RECOGNIZE (REFLECTION OF THE SOUL) AND VERIFY.

1/ KNOW WHAT AN EXPERIENCE IS

First, we have to know the perception mechanisms of the real world through life sciences. This step allow us, for example, to understand the influence emotions have on decision-making and to grasp the relationship between behavior and environment, in order to be able to plan it.

Functional demonstrator of the Harmonie system



2/ IDENTIFY A SUCCESSFUL EXPERIENCE

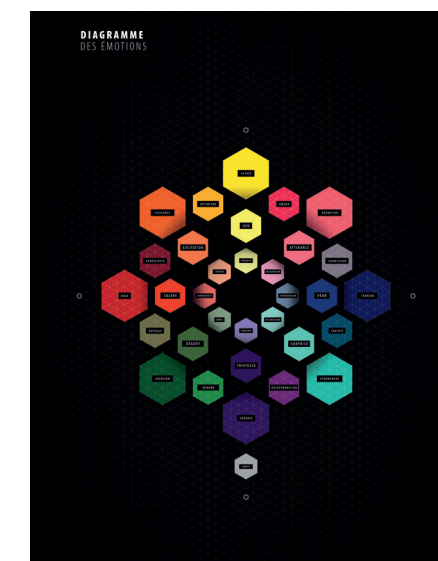
Secondly, it's about improving future experiences by leveraging a systemic visual model of emotions that can be read by all audiences. Over time, this can help to generate profiles, figure out behaviors, fine tune the self-learning process of a system, trigger scenarios, and balance the man-machine relationship. It requires seeing that which in principle cannot be perceived. Seeing how people feel when they experience something helps highlight sensory interactions.

3/ VERIFY THAT THE EXPERIENCE WAS SUCCESSFUL

Thirdly, it's about harmonizing industrial production, nature, and individuals' well-being aligned with their environment and fellow human beings. The uniqueness of the approach, the creation of knowledge, the acculturation of the 3DEXPERIENCE platform to new constraints including the "effects" of the harmonious experience prior to the design and innovation process, the experiential system as a prototype for simulation and communication and finally the

Harmonie referential make it possible to qualify and reproduce a harmonious experience.

Our ambition is to stimulate a pro-active experience system based on a Harmonie referential, explored and defined by the Design Studio to reach a kind of continuous singularity with respect to the "experience explorer".



The rose of primary and secondary emotions

WHAT IS THE DESIGN STUDIO?

Dassault Systèmes' Design Studio's mission is to accompany a company's digital transformation by applying a sensible and sustainable approach by practicing an innovative method called Experience Thinking. Its mission is to propose, capitalize and spread a new digital design approach including economic, social and usage concerns. The Design Studio participates in companies' disruptive strategies by writing future scenarios that can be prototyped by 3DEXPERIENCE, which is at the core of Design Studio's offer. The experience design approach and the management of complex systems are reinforced by a service offering to accompany companies with their projects based on the collaborative 3DEXPERIENCE platform. The Design Studio proposes both a business and societal approach by systematically placing people at the heart of its projects.

Journey of "the explorer" during an experience and the Harmonie level

ADDITIONAL INFORMATION

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