DASSAULT SYSTEMES

MEDIA BACKGROUNDER

3DEXPERIENCE®

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FAST FACTS

Activity	**Dassault Systèmes is a catalyst for human progress. Since 1981, the company has pioneered virtual worlds to improve real life for consumers, patients and citizens. With Dassault Systèmes' 3DEXPERIENCE platform, 370,000 customers of all sizes, in all industries, can collaborate, imagine and create sustainable innovations that drive meaningful impact.**
Founded	1981
2024 revenues	6.21 billion euros
Workforce	25,000
Headquarters	10, rue Marcel Dassault, 78140 Vélizy-Villacoublay, France
Leadership	Charles Edelstenne, Founder and Honorary Chairman Bernard Charlès, Executive Chairman of the Board Pascal Daloz, Chief Executive Officer
Stock symbol	Euronext Paris: FR0014003TT8, DSY.PA
Industries	Aerospace and Defense Architecture, Engineering and Construction Business Services Cities and Public Services Consumer Packaged Goods - Retail High-tech Home and Lifestyle Infrastructure, Energy and Materials Industrial Equipment Life Sciences and Healthcare Marine and Offshore Transportation and Mobility
Brands	3DEXCITE 3DVIA BIOVIA CATIA CENTRIC PLM DELMIA ENOVIA GEOVIA MEDIDATA NETVIBES OUTSCALE SIMULIA SOLIDWORKS
Customers	More than 370,000 in 150 countries
Website	www.3ds.com

DASSAULT SYSTEMES: VIRTUAL WORLDS FOR REAL LIFE

For 40 years, Dassault Systèmes has been the catalyst and enabler of some of the world's greatest technological feats. Its technology has transformed the way products are designed, produced and supported, giving way to unparalleled industrial innovation in the 21st century. Every day, patients, consumers and citizens see, use and experience something conceived with, designed with, created with and improved with the company's software solutions such as their car, their shampoo bottle, their vaccine, the kitchen in their home, the city in which they live, and even the organs inside their body.

Since it was founded in 1981, Dassault Systèmes has grown from a small spinoff to a global corporation with 6.21 billion euros in revenue. Today, it provides over 370,000 customers in 150 countries with virtual universes to imagine sustainable innovations capable of harmonizing product, nature and life. It pulls from its four decades of technological evolutions, knowledge and know-how to serve three key economic sectors: Life Sciences and Healthcare, Manufacturing Industries, and Infrastructure and Cities. Through its belief in the power of virtual worlds to extend and improve the real world, it enables industry to think differently in terms of creation, collaboration, production and intelligence, and invent disruptive solutions that can positively impact society while reducing the demands on the planet.

Founding and 3D design

Dassault Systèmes was established in 1981 through the spin-off of a small team of engineers from Dassault Aviation, led by Charles Edelstenne. The engineers were developing software to design wind tunnel models and therefore reduce the cycle time for wind tunnel testing, using surfacing modeling in three dimensions ("3D"). The independent company entered into a distribution agreement with IBM to sell this software under the CATIA (computer-aided three-dimensional interactive application) brand to the automotive and aviation industries. At the time, engineers were relying on the use of paper drawing boards to design complex planes and cars. CATIA represented a revolutionary new way to work. It enabled them to create and engineer parts and assemblies in 3D, achieving high-performance innovation that was "right the first time."

Over the next three decades, the company developed new versions of its software architecture that introduced capabilities built upon the original concept of 3D modeling for product design. These significantly transformed the way products are designed, produced and supported, and created a number of industry "firsts."

3D Digital Mock-Up and the Boeing 777

Initially, the growing adoption of 3D design by industrial customers for all components of complex products triggered the company's vision of transforming the 3D part of the design process into a systematic integrated product design to realize full 3D digital mock-ups ("DMU") of any product. Using 3D DMU, customers could represent entire complex systems in 3D, both inside and outside, and simulate the engineering. This complete understanding of a virtual product enabled them to reduce the number of physical prototypes and realize substantial savings in product development cycle times. It also ushered in a new era of collaborative innovation that made global engineering possible as engineers were able to virtually share their ongoing work.

Dassault Systèmes recognized the potential applications of its 3D DMU software in other industries, and expanded its reach to consumer goods, high-tech, shipbuilding and energy. Yet aerospace remained a key areas of focus, and the company's work with its customer Boeing would define a new era of industrial innovation. In 1989, the Boeing 777 became the first commercial aircraft entirely designed using Dassault Systèmes' 3D DMU technology. This industrial transformation would not only influence the aviation industry in the years to come, it would reverberate across and influence the progress of all industries in modern society.

PLM and Beyond

Next, the company developed a robust 3D Product Lifecycle Management ("PLM") solution to support the entire product lifecycle, from virtual design to virtual manufacturing, which often involves the use of rapidly changing technologies and frequent new product introductions or enhancements. These solutions address complex engineering needs in product design, simulation and manufacturing and must also meet sophisticated process requirements in the areas of change management, industrial collaboration and cross-enterprise work.

In parallel to this technological development, Dassault Systèmes sought other avenues for growth. These included expansion into North America and Asia, diversification into industries such as energy and life sciences, and development of a proprietary sales and marketing network. The company also made strategic acquisitions that expanded its software applications portfolio to digital manufacturing, realistic simulation, product data management and enterprise business process collaboration.

CATALYZING AND ENABLING SUSTAINABLE INNOVATION

The Experience Economy

Businesses must look beyond the aesthetics of a product or the practicalities of a service. Consumer engagement and loyalty count far more than features and benefits alone. Consumers expect to interact with or even influence suppliers – not just be sold to. As a result, the world has shifted from a "product" economy to an "experience" economy, where a product's real value comes from how it is used. Products are no longer enough for today's consumers who value experience over all else.

Dassault Systèmes recognized that, in order to help its customers simulate the consumer experience, it must have a complete understanding of the most critical business needs of the industries in which its customers operate—that is to say, their "business experience." By fusing people, ideas and data to capture insights and expertise across their ecosystem, its customers could create their own positive business experiences for the

end-consumer and, in turn, add value to their business. The involvement of, and the collaboration between, all the roles within a company drives consumer loyalty, engagement and value.

The 3DEXPERIENCE platform and virtual twin experiences

The result is "3DEXPERIENCE," the core concept of Dassault Systèmes. In 2012, building upon its work in 3D, DMU, and PLM, and recognizing trends, challenges and client needs in different industry verticals, the company unveiled its 3DEXPERIENCE platform to support clients in their processes to deliver rewarding experiences to end-users.

The 3DEXPERIENCE platform is a virtual experience platform that enables companies to collectively access and apply knowledge and know-how at hyper speed, and try infinite possibilities for innovation. It represents both a system of operations for companies to run their businesses, and a business model for them to change relationships and roles across their value network. Companies can digitally connect upstream thinking to design, engineering, manufacturing, sales, marketing, and ownership. Industry can transform how it invents, learns, produces and trades, to create value and differentiating customer experiences.

Dassault Systèmes provides a science-based representation of the world's complexity. The 3DEXPERIENCE platform enables virtual twin experiences: data-enriched, evolving 3D models that replicate products, processes or services with scientific accuracy and are used to test and improve their performance virtually, before producing them physically. Virtual twin experiences rely on biology, chemistry, materials science, mechanics and electromagnetism, and integrate 3D modeling, social collaboration, simulation, and information intelligence technologies and services.

From Things to Life

Many of the items people use on a daily basis have been designed, engineered, improved and developed using virtual twin experiences. The technology has enabled disruptive solutions that can positively impact society, from smart city initiatives and driverless vehicles, to record-breaking solar-powered aviation, hydropower plants and wind turbines.

The next frontier involves healthcare. In 2020, Dassault Systèmes extended its ambition "from Things to Life" to focus on transforming how people are cured and helping them live a better life by making the virtual twin experience of the human body possible. Virtual twin experiences with the 3DEXPERIENCE platform open up new possibilities for life sciences and healthcare by enabling research, medical, surgical and other health-related disciplines to understand, model, search, test and treat a human body as precisely, safely and effectively as other industrial disciplines already can with cars, buildings or airplanes.

The Generative Economy

With a population of 7 billion and increasing levels of environmental degradation, the world cannot produce and consume in the 21st century in the same way that it did in the last one. In the Experience Economy, a product cannot be sustainable if its impact on the environment and on society has not been thought through.

Virtual twin experiences foster the connection between this Experience Economy and a more circular, low-carbon and sustainable one. They catalyze and enable a Generative Economy in which industry can learn from life and its generative processes – the life of things. This opens up new perspectives on sustainable ways of producing, treating, living and learning, for example: self-healing materials, products that are grown rather than manufactured, waste that can become a resource for a new product, or net-positive business models giving as much back to the planet and society as they take away.

Driving this Generative Economy requires connecting multiple virtual twins that unify the virtual and the real, stakeholders, and knowledge and know-how. In such a "universe," the virtual world extends and improves the real world. Mobility is not limited to devices, for example; it encompasses passengers, vehicles, buildings, and air quality. Cancer is not limited to cells; it involves the effect of an organic process that needs to be understood in a more holistic manner. With data science, physical objects such as cars can become augmented objects that are monitored and optimized in real time through their virtual counterpart, shifting the value from the physical asset to software and enabling innovators to tailor experiences.

3D UNIV+RSES

The Experience Economy and the Circular Economy are converging into the Generative Economy, one in which society takes inspiration from the living world to generate more than it consumes, giving back to the planet as much as it takes from it. Industry can be the solution to sustainability by leveraging virtual worlds to model possibilities, make better choices and collaborate before springing into action.

Throughout the decades, Dassault Systèmes has continued to change how industry works. Each transformation represents a new generation - a new way of looking at the world. In February 2025, Dassault Systèmes unveiled its seventh generation of game-changing working methods to provide industries in the Generative Economy with new ways to use their knowledge and know-how, and address global challenges: 3D UNIV+RSES.

3D UNIV+RSES are a new class of digital representation that integrates modeling, simulation, real-world data and AI-generated content. They enable the virtualization of an entire product lifecycle, linking virtual twins across design, engineering, manufacturing and usage, and the combination of multiple virtual twins across companies. These environments enable organizations to securely experiment, learn and innovate with AI, making Dassault Systèmes an IP generation and management company.

Seven core pillars make up 3D UNIV+RSES:

1. Virtual twins: A V+R scientific representation of a product, asset or service that integrates the knowledge and know-how to create and operate it in the real world.

2. Experiences: Environments that integrate motion, transformation and time for experimenting with virtual twins. Experiences enable us to explore a domain of possibilities - what we call “what if” scenarios - and share them for observation and understanding.

3. Generative experiences: New experiences created by combining artificial intelligence with data and information from past experiences. Generative experiences offer scientifically valid knowledge to help guide the exploration of possibilities.

4. Virtual companion: Our AI-based conversational assistant (“AURA”) redefines collaboration between humans and robots. Virtual companions are capable of dialogue and actions. They can be used to improve skills, answer questions during product design, reduce programming time and more, all while preserving confidentiality.

5. Cycle of life: The evolution of products, assets and services over time within their environment. A representation of the cycle of life enables companies to make decisions to optimize sustainability.

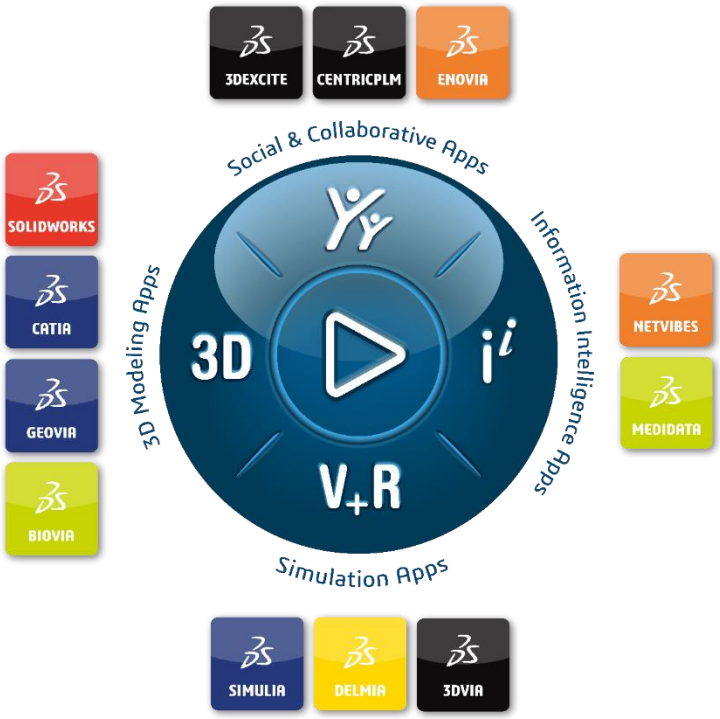
6. Sense computing: Natural interactions between humans and experiences using senses, behaviors, emotions.

7. Knowledge and know-how platform: A trusted environment in which a company can manage and share its Intellectual property.

CORE APPLICATIONS

3DEXPERIENCE platform

Dassault Systèmes has developed the largest business experience platform in the world that focuses on the following core concepts:



3D modeling: 3D and systems engineering used in a wide spectrum of domains including smart/connected products, urban systems, natural resources, and biological systems. Brands include:

- CATIA: the company's pioneer brand; addresses the complete product development process, from early product concept specification through product in service.
- SOLIDWORKS: 3D design, data management, simulation, technical documentation, and electrical design.
- GEOVIA: models and simulates the planet to improve predictability, efficiency, safety and sustainability of natural resources.
- BIOVIA: scientific innovation lifecycle management software for chemistry and biology.

Simulation ("Virtual+Real"): realistic simulation of products, production and usage, including complex product behaviors, factory and production systems execution, and consumer usages in everyday life. Brands include:

- SIMULIA: a scalable suite of unified analysis products that allows all users, regardless of their simulation expertise or domain focus, to collaborate and seamlessly share simulation data and approved methods without loss of information fidelity.
- DELMIA: drives manufacturing innovation by planning, simulating and executing global production processes.
- 3DVIA: offers consumers, retailers and manufacturers innovative 3D space planning solutions.

Information intelligence: indexing and dashboarding that allows customers to tackle big data challenges and search, sort, filter, navigate and understand data. Brands include:

- NETVIBES: helps enterprises transform massive information flows into actionable insights, contextualize real-world data, and reuse knowledge and know-how.
- MEDIDATA: clinical expertise and cloud solutions that help pharmaceutical, biotech, medical device and diagnostics companies, and academic researchers develop and market smarter therapies.

Connectivity: social and structured collaboration. Brands include:

- ENOVIA: brings together people, processes, content and systems involved in product creation, development, introduction and maintenance.
- 3DEXCITE: high-end visualization software, marketing solutions and computer-generated imagery services that translates engineering data into usable data for marketing professionals.
- CENTRICPLM: merchandise planning, product development, sourcing, business planning, quality and collection management for fashion, apparel, luxury and retail sectors.

Dassault Systèmes packages these applications as "industry solution experiences" that are tailored according to the complex business processes of 12 different industries through a strategic combination of the company's 13 brands.

OUTSCALE

Dassault Systèmes is one of the fastest growing cloud companies in the world. With its OUTSCALE brand, it provides governments and companies in all industries with sovereign environments for trusted business experience as a service on three levels:

- dedicated cloud for sovereign collaboration in a customer's space;
- private cloud for trusted collaboration in a common legal and fiscal space;
- international cloud for secured collaboration.

OUTSCALE empowers business users to benefit from data science – breaking down silos and capturing knowledge and know-how within their organization and ecosystem, from market intelligence and cost optimization to talent management, innovation acceleration, asset intelligence, and in-service quality enforcement.

OUTSCALE has multiple certifications:

- France's ANSSI Security Label for SecNumCloud certification of all its Public Sector Cloud offerings, reflecting the highest level of commitment and adherence to security regulations.
- ISO 27001:2013 security certification for 3DS Public Sector Cloud, recognizing information security management compliance.
- ISO 27018 certification in connection with P11 Cloud private data protection.
- Health Data Hosting certification with ASIP Santé.

HomeByMe

Dassault Systèmes' HomeByMe application is an online interior design application for consumers, interior designers and retailers. It provides an immersive and interactive user experience to transform home furnishing and interior decoration projects, to visualize this transformation in a realistic 3D environment, and to connect consumers to home professionals.

Millions of consumers use this free application to view and experiment with personalized furniture, flooring, walls, layouts and designs online virtually, before engaging in real-world purchases, projects or renovations. HomeByMe also connects a user's design environment to a greater community of businesses and home professionals including furniture providers, realtors, architects, interior designers and builders. Professional subscriptions enable these businesses to offer their customers a game-changing level of speed, responsiveness, ease of use and visual impact with 360° virtual reality and augmented reality.

HomeByMe for Kitchen Retailers is a digital 3D kitchen planning solution that helps retailers to support a virtual omnichannel buying experience, to accelerate the sales process, and to increase revenues. Their customers can digitally create, visualize and personalize their kitchens, backed by a comprehensive range of management tools, branded experiences and design recommendations.

KEY STRATEGIC SECTORS

Dassault Systèmes' 3DEXPERIENCE platform and industry solution experiences are used by customers in three strategic sectors comprising 12 industries. These address end-to-end critical product issues for a more sustainable outcome, including product quality, time-to-market, supply chain collaboration, regulatory compliance, intellectual property protection and manufacturing efficiency. The platform makes it possible to create virtual twins of a product, material, manufacturing process or an entire system, and understand, predict and improve its performance virtually, before producing it physically.

These strategic sectors and industries are:

Manufacturing Industries – representing approximately 70% of revenues

Transportation & Mobility

The company's largest industry and one of the company's two original industries of focus with aerospace and defense.

Segments: car and light truck OEMs; motorcycles; trains; racing cars; trucks and buses; suppliers and mobility services.

Customers include: AKKA Technologies, Alstom Trenitalia, Ashok Leyland, Batz Group, Blutec, BMW Group, CAF, Dana Holding Corporation, DS Automobiles, Eurostar, Faraday Future, Faurecia, FCA, Ford, GLM, Group PSA, Honda, Hopium, Hyundai, JLR, Kreisel Electric, Mahindra & Mahindra, Michelin, Peugeot Motorsport, Pininfarina, PSA Retail, QEV Technologies, Qoros, Renault Group, Rimac Automobili, Scania Group, Stadler Rail, Tata Technologies, Tesla, Texelis, Toyota, Valeo, VE Commercial Vehicles, Visteon, Volkswagen, Volvo Cars.

Industrial Equipment

Segments: industrial robots, machine tools, 3D printers; specialized manufacturing machinery; heavy mobile machinery and equipment; building equipment; power and fluidic equipment; fabricated metal and plastic products; tire manufacturers.

Customers include: AGCO, Asia Agricultural Machinery, Bobst Group, Bosch, Bridgestone EMEA, Caterpillar, Chongqing Yinhe, CLAAS, Comez International, Cummins, Doosan Infracore, DT HiLoad, Kärcher, Karl W. Schmidt & Associates, Konstrukta Industry, Maschio Gaspardo, McPhy, Müller, Valmet, Westrock.

Aerospace & Defense

Segments: Commercial aviation, space, defense, aerospace propulsion, suppliers, airports and airlines.

Customers include: Aeros, Airbus Group, Avio, Ball Aerospace, Bell Helicopter, Blue Spirit Aero, Boeing, Boom Supersonic, BRM Aero, CASC, Cessna, Comac, Dassault Aviation, Elixir Aircraft, Embraer, Eviation, FAA, GE Aviation Hamble, Interstellar Labs, Joby Aviation, KLM, Lockheed Martin, MBDA, Northrop Grumman, Pratt & Whitney, SABCA Group, Safran Group, Sky Eye Systems, Solar Impulse, Strata, Turkish Aerospace, Vertical Aerospace.

Home & Lifestyle

Segments: furniture and home goods; sports and leisure goods; fashion and luxury goods; specialist retailers.

Customers include: Adidas, Arc International, Arena, Arvind, Benetton Group, Bernardaud, Boyner Group, Cabinets.com, El Corte Inglès, Eterna, Fossil Group, Gap, Gautier, Geberit, Guess, IXINA, Mammut Sports Group, Nowy Styl, Patek Philippe, S. Oliver, Skidmore Group, The Rockport Group, VF Corporation.

Consumer Packaged Goods - Retail

Segments: Food and beverage; household products; beauty and personal care; packaging suppliers; general retailers.

Customers include: Amcor, Asda, Barilla, BAT Mexico, Bel Group, Boticario Group, Clarins Group, Coca-Cola, Danone, Familia Torres, General Mills France, Heinz, L'Occitane, L'Oréal, Monoprix, Procter & Gamble, Shiseido, SIG, Tetra Pak, Torres, VISKASE.

High-Tech

Segments: consumer electronics; security, control and instrumentation; computing; software and communications; contract manufacturing services; technology suppliers; semiconductors; telecom and media operators.

Customers include: AB Sciex, Bosch, Dong Yang, Ericsson, Fujitsu Network Communications, HP, Hisense, Hurom, LG, Microsoft Devices, Nikon, Panasonic, Parrot, Pegatron, ST, V-Zug.

Marine & Offshore

Segments: naval shipyards; commercial shipyards; offshore; yachts and workboats.

Customers include: Bureau Veritas, DCNS, Damen Shipyards, Deltamarin, DSME, Ecoceane, ExxonMobil, Heesen Yachts, Hyundai Heavy Industries, Isonaval, McDermott, Meyer Werft, ORACLE TEAM USA, Trimaran SVR-Lazartigue.

Life Sciences and Healthcare – representing approximately 22% of revenues

Life Sciences & Healthcare

Segments: pharmaceutical and biotechnology; medtech; patient care

Customers include: Akzo Nobel, AO Foundation, Bayer, CDR-Life; FEops, GE Healthcare, GN ReSound, Ion Beam Applications, Ipsen, Johnson & Johnson, Medtronic, Moderna, Novo Nordisk, Olympus Technologies Singapore, Osstem Implant, Otto Bock Healthcare Products, Pfizer, Sanofi, Shanghai Microport Orthopedics, Saint-Louis Hospital AP-HP, Stryker.

Infrastructure and Cities – representing approximately 8% of revenues

Infrastructure, Energy & Materials

Segments: mining; metals and minerals; oil and gas; power; chemicals; civil and transportation infrastructure.

Customers include: Areva, BASF, CBMM, Chevron, CHIDI, Cofely Ineo, Daewoo, Dow, Eaton, European Spallation Source, I&C Energo, Jindal Stainless, NAAREA, NIAEP, POSCO, Renew Power, Samsung Heavy Industries, Schaeffler Technologies, UK Atomic Energy Authority, Vestas Wind Systems.

Business Services

Segments: banking and insurance; rail freight; postal and express; air cargo; sea freight and logistics services.

Customers include: Eovi Mcd Mutuelle, Kinetic Vision, LALUX Assurances.

Cities & Public Services

Segments: cities and public administrations, public contractors, education.

Customers include: Philharmonie de Paris, AP-HP, France's Grand Est region, city of Meudon, France, National Research Foundation of Singapore, city of Rennes, France, SOLIDEO.

Architecture, Engineering & Construction

Segments: utilities; buildings and facilities; construction products and services.

Customers include: Aden Group, AEM, Agnico Eagle, AngloAmerican, Arup, Bouygues Construction, CadMakers Virtual Construction, Cerrejon, Cokal, De Beers, Dundee Precious Metals, Hardstone Construction, Kengo Kuma, Lafarge, LMN Architects, Palabora Copper, Red Electrica, Rio Tinto, Saint Gobain, Sanska, Dr. Sauer & Partners, Shanghai Foundation Engineering Group, SHoP Architects & SHoP Construction, SMEDI, Snam, Technip, VLP and Partners, Zahner.

GLOBAL PRESENCE

Dassault Systèmes is headquartered in Vélizy-Villacoublay, France, located in the Paris area. Its principal sites outside France are located in China, Germany, Japan, South Korea, the U.K. and the U.S. In total, it operates 88 subsidiaries worldwide. In 2024 its activities in Europe represented 38 percent of total revenues, those in North America 39 percent and those in Asia 22 percent.

RESEARCH AND DEVELOPMENT

The company's research and development is conducted in close cooperation with users, partners and customers in their respective industries to develop a deeper understanding of the unique business processes of these industries and their future product directions and requirements. Important areas of focus are:

- Modeling technologies (3D, systems engineering, natural resources and biosystems);
- 'Virtual+Real' technologies (product, production and usage realistic simulation);
- Intelligent information technologies (indexing and dashboarding);
- Connectivity technologies (social and structured collaboration);
- Breakthrough user experiences;
- Expanding the reach of its solution with immersive, mobile and native cloud solutions.

The team is composed of 10,250 engineers, representing approximately 41% of the company's total headcount, at research facilities located in Europe, the Americas and Asia-Pacific. As a science-based company, in 2024, it invested €1.29 billion in R&D to drive product innovations and enhancements. Its patent portfolio is comprised of more than 839 protected inventions, including 71 new patents filed in 2024. Patents have been granted in one or more countries for more than 70% of these inventions, and patents for the others are pending.

SALES ORGANIZATION

Dassault Systèmes has more than 370,000 customers in 150 countries. Its customer base ranges from business decision-makers at highly recognized consumer brand corporations to the maker movement, small suppliers, industrial manufacturers, educational institutions and government departments. To reach these customers, Dassault Systèmes developed a network of sales and development partners, system integrators, educational institutions and research enterprises to engage with customers in five ways:

- Customer Solution Experiences: for companies undergoing transformation;
- Customer Process Experiences: for organizations and departments seeking the highest operational performance;
- Customer Role Experiences: for users who want to reach excellence with the knowledge and know-how to perform their job;
- Customer Online Experience: for users who expect an end-to-end, full, online engagement, based on cloud-delivered roles;
- Life Sciences Engagement: for life sciences and healthcare organizations.

EXTERNAL GROWTH

Dassault Systèmes' external growth opportunities focus on expanding its applications portfolio, broadening its industry coverage and diversification, deepening its regional market penetration, expanding its universe of users, and offering Software as a Service and mobile applications.

In 2024, Dassault Systèmes acquired two companies to support its SIMULIA brand: the French companies EOMYS, with solutions to assess and control magnetic noise and vibrations in electric drives, and AMCAD Engineering, with a suite of radio frequency modeling and testing software solutions for designing and optimizing microwave circuits. It also acquired Satelliz, specialized in the development and operation of Kubernetes services, to enhance its OUTSCALE offering.

SOCIETAL & ENVIRONMENTAL RESPONSIBILITY

Dassault Systèmes has embarked on many initiatives to put its technology and knowledge at the service of research, education, culture, and artistic creation, as well as to drive its commitment to sustainability.

3DEXPERIENCE Lab

The 3DEXPERIENCE Lab, its open innovation laboratory and startup accelerator program, shapes a new framework of open innovation to foster entrepreneurship and strengthen society's future of creation. It has yielded successful projects aligned with the United Nations' Sustainable Development Goals, including large-scale additive construction using robots, 3D printing of personalized organs for simulation of surgery, and unmanned long-range solar drones. The 3DEXPERIENCE Lab is also located in North America, where it houses a digital fabrication space designed and set up in collaboration with Massachusetts Institute of Technology's Center for Bits and Atoms, in India, and in Germany. Since the lab's creation in 2015, it has grown to include a rich ecosystem of incubator, accelerator, educational, entrepreneurial, technology and fab lab partners worldwide, 2,350 mentors, and collaborations with multinational companies on co-accelerating promising projects in specific industries.

La Fondation Dassault Systèmes

La Fondation Dassault Systèmes is dedicated to transforming the future of education and research through 3D technology and virtual universes. The foundation provides grants, digital content and skillsets in virtual technologies to education and research initiatives at academic institutions, research institutes, museums, associations, cultural centers and other general interest organizations throughout the European Union, the United States and India. *La Fondation* has supported more than 200 projects.

3DEXPERIENCE Edu

Dassault Systèmes' 3DEXPERIENCE Edu helps students and professionals thrive in the workplace with in-demand industry skills for sustainable innovation by opening up new possibilities on the 3DEXPERIENCE platform for lifelong learning and for connecting academic institutions with industry to foster employability.

3DEXPERIENCE Edu delivers skills-related publications, establishes global partnerships and educational centers, and engages students in sustainability challenges and competitions, as well as offers a new portfolio of learning experiences and certifications for professionals on the 3DEXPERIENCE platform. These programs and resources

aim to foster collective intelligence on key emerging roles and skills, redefine the way academic institutions and businesses collaborate to accelerate the adoption of new methods in industry, and transform education through experience-based learning.

It builds upon Dassault Systèmes' decades of industrial experience to support more than six million learners of all ages every year as well as academic institutions, companies, and professionals seeking to improve their knowledge, expertise or employability. This includes providing educational packages to organizations worldwide during COVID-19 lockdowns, partnerships with Ecole Normale Supérieure Paris-Saclay, Re-Engineering Australia Foundation, Arts et Métiers ParisTech, Illinois Institute of Technology on life sciences, and the World Economic Forum on advanced manufacturing skills, and the 3DEXPERIENCE Edu Centers of Excellence program – a network of centers for experiential, lifelong learning on the 3DEXPERIENCE platform.

Sustainability Achievements

Dassault Systèmes has already led the charge in transforming how products are designed, developed and supported for 40 years. Today, the company continuously endeavors to help meet the goals of the Paris Agreement and support the global response to the threat of climate change through a strategic ambition to become the world's number one partner for reinventing a sustainable economy in life sciences and healthcare, infrastructure and cities, and manufacturing. The 3DEXPERIENCE platform and virtual twin experiences fold into Dassault Systèmes' commitment to sustainability and its recognition of sustainability's role as a driver of creation and innovation in the 21st century.

Dassault Systèmes is focused on embedding sustainability in everything it does, from committing to ambitious carbon emissions targets to engaging in employee ethics training and hiring women in management roles. By implementing a strategy to optimize and transform its activities aimed at reducing its environmental footprint, Dassault Systèmes aims to be a net-positive company—one whose positive impact from the implementation of its solutions is greater than the negative footprint of its activities.

In 2024, the company figured in the DJSI World Index for the fourth consecutive year. Other 2024 achievements included a Platinum Medal rating from Ecovadis, ranking fourth in the software sector in the S&P Global CSA, and retaining its "AAA" rating from MSCI and inclusion in the FTSE4Good Index.

CORPORATE LEADERSHIP

Charles Edelstenne, Founder and Honorary Chairman
Charles Edelstenne is the founder of Dassault Systèmes and its honorary chairman. Prior to this, he was manager then president and chief executive officer of the company until 2002. Qualified as a chartered accountant, he began his career in 1960 at Dassault Aviation as head of the financial studies department, and later became general secretary then vice-chairman responsible for economic and financial affairs.

Bernard Charlès, Executive Chairman of the Board of Directors
Bernard Charlès has been Executive Chairman of the Board of Directors since January 2024. He served as Chief Executive Officer from 1995 - 2022, and was Chairman and CEO in 2023. He joined the company in 1983 to develop new design technologies and served as director of new technology, research and development and strategy from 1986 to 1988 and as president of strategy, research and development from 1988 to 1995. He holds the rank of Knight and Officer in the French Legion of Honor and is a member of the French Academy of Technology. He is a graduate of the Ecole Normale Supérieure engineering school in Cachan and has a PhD in mechanical engineering majoring in automation engineering and information science.

Pascal Daloz, Chief Executive Officer
Pascal Daloz has been Chief Executive Officer since January 2024. He was Chief Operating Officer and Head of the Operations Executive Committee from 2020 - 2023, and Deputy CEO in 2023. With more than 20 years of experience in executive positions at Dassault Systèmes, he has made a key contribution to Dassault Systèmes' policy of pioneering new sectors, especially in life sciences and healthcare, resulting in the unique market coverage it has achieved today. With his ability to embrace future trends and bring together the most original talents, he takes a multidisciplinary approach to the company's development, combining operational knowledge, technological expertise and an astute acquisition strategy. Mr. Daloz began his career in 1992 as a technology consultant and as a sell-side technology analyst at Credit Suisse. He has contributed to several books on innovation, was awarded the Hermès de l'Innovation prize for human relations in the workplace in 2010, and holds the rank of Knight in the French Order of Merit. He is a graduate of the École des Mines de Paris.

Grégory Abate, General Secretary
Laurence Barthès, Executive Vice President, Chief People and Information Officer
Rouven Bergmann, Executive Vice President, Chief Financial Officer
Florence Hu-Aubigny, Executive Vice President, Research and Development
Patrick Johnson, Executive Vice President, Corporate Research and Sciences
Samson Khaou, Executive Vice President, Asia-Pacific
Philippe Laufer, Executive Vice President, 3DS Global Brands
Victoire de Margerie, Vice President, Corporate Equity, Marketing and Communications
Elisa Prisner, Executive Vice President, Industry, Marketing, Sustainability and Corporate Strategy
Erik Swedberg, Executive Vice President, Americas
Florence Verzelen, Executive Vice President, EMEA

COMPANY MILESTONES

1981	– Creation of Dassault Systèmes; launch of flagship brand CATIA and signature of global marketing, sales and support agreement with IBM focused on automotive and aerospace
1984	– Launch of V2 software, integrating 2D and 3D capabilities
1986	– Launch of V3 software for 3D design
1992	– Creation of U.S. subsidiary
1994	– Launch of V4 architecture for full digital mock-up ("DMU") of a product; expansion of industry focus to fabrication and assembly, consumer goods, high-tech, shipbuilding and energy – Creation of Japanese subsidiary
1996	– Initial public offering on Euronext Paris and on NASDAQ (the company voluntarily delisted from NASDAQ in 2008)
1997	– Acquisition of SOLIDWORKS, targeting the 2D to 3D migration market opportunity; creation of its professional sales and marketing channel to support SOLIDWORKS
1998	– Acquisition of IBM's product manager software and creation of the ENOVIA brand to manage CATIA product data
1999	– Launch of V5 architecture software for the PLM market; acquisition of SmarTeam, product data management for small- and mid-sized companies (SMB)
2000	– Creation of the DELMIA brand for digital manufacturing
2005	– Acquisition of Abaqus and creation of the SIMULIA brand to focus on realistic simulation; creation of its PLM Value Solutions sales channel focused on SMB
2006	– Acquisition of MatrixOne, global provider of collaborative PDM software and services; expansion of its industry focus from seven to 11 industries
2007	– Creation of the 3DVIA brand to imagine, communicate and experience in 3D; acquisition of ICEM, provider of styling and high-quality surface modeling and rendering solutions to the automotive industry
2008	– Launch of its V6 architecture for next-generation PLM using collaborative intelligence; acquisition of Engineous software for process automation, integration, optimization
2010	– Acquisition of IBM PLM for full control of its distribution sales channels; signature of a global alliance agreement with IBM in professional services, cloud computing, middleware, flexible financing and hardware – Acquisition of Exalead, provider of search platforms and search-based applications for consumer and business users
2011	– Acquisition of Intercim, provider of manufacturing and production management software for advanced and highly regulated industries – Sales operations transition from IBM completed; 100% of total revenues derived from its three sales channels
2012	– Expansion of company strategy to 3DEXPERIENCE based on its V6 architecture and introduction of first Industry Solution Experiences – Expansion of industry focus to natural resources sector with acquisition of Gemcom in the mining sector; creation of a new brand, GEOVIA, dedicated to modelling the planet – Acquisitions of Netvibes intelligent dashboarding capabilities and SquareClock cloud-based 3D space planning solutions

2013	– Acquisition of Apriso; extending manufacturing offerings to manufacturing operations management
2014	– Acquisition of Realtime Technology AG ("RTT") providing professional high-end 3D visualization software, marketing solutions and computer generated imagery service; creation of 3DXCITE brand to extend offering to marketing professionals – Acquisition of Accelrys, provider of scientific innovation lifecycle management software for chemistry, biology and material; creation of a new brand, BIOVIA – Acquisition of Quintiq, provider of supply chain management and optimization spanning production, logistics and workforce planning applications for new reach into global business operations planning in metals, mining, oil and gas, rail, delivery and freight
2015	– Change in legal status of the parent company from that of a French public limited company (Société Anonyme) to that of a European company (Societas Europaea, SE) reflecting the international dimension of the Company and its growing presence in Europe – Creation of *La Fondation Dassault Systèmes* to empower innovative and transformative projects in education, research and scientific knowledge in the European Union – Launch of the 3DEXPERIENCE Lab, its open innovation laboratory and startup accelerator program to nurture disruptive projects and transform society
2016	– Acquisition of CST, technology leader in electromagnetic simulation – Acquisition of Ortems, focused on production planning and scheduling – Acquisition of 3D PLM Software Solutions Ltd., its joint venture in India with Geometric Ltd.
2017	– Signature of partnership with Boeing for the use of the 3DEXPERIENCE platform for manufacturing operations management and product lifecycle management. – Acquisition of Exa Corporation, for highly dynamic fluid flow analysis – Acquisition of AITAC, whose software application is used to automate the creation of drawings – Acquisition of majority stake in Outscale, provider of enterprise-class cloud computing infrastructure services
2018	– Launch of the 3DEXPERIENCE Marketplace, the company's online ecosystem where business innovators can collaborate and transact with other industrials and service providers – Majority acquisition in Centric Software, a privately-owned, U.S.-based industry market leader driving digital transformation with software innovation in fashion, apparel, luxury and retail – Acquisition of COSMOlogic, a Germany-based leader in thermodynamics for exact modeling of solubility and computational chemistry – Acquisition of No Magic, a U.S.-based company focused on model-based systems engineering, architecture modeling for software, system of systems and enterprise business processes modeling – Dassault Systèmes is listed on the CAC 40, the premier benchmark stock market index in France

2019	– Acquisition of Medidata, whose clinical expertise and cloud-based solutions power the development and commercialization of smarter therapies for pharmaceutical companies and biotechs, contract research organizations (CROs), and medical centers and sites – Acquisition of IQMS, a U.S.-based leading manufacturing ERP software company – Acquisition of Argosim, pioneer in systems specification simulation – Acquisition of Elecworks, the suite of CAD software developed by Trace Software – Acquisition of a non-controlling interest in BioSerenity, a firm specializing in the development of connected medical devices and remote-monitoring solutions for patients with cardiac, neurological and sleep disorders – Acquisition of Distene, the developer of market-leading meshing software – Launch of 3DEXPERIENCE WORKS, a new portfolio of applications aimed at small and midsized companies and SOLIDWORKS customers – In France, 3DS OUTSCALE obtained the ANSSI Security Label for SecNumCloud certification of all its Public Sector Cloud offerings. This is a first for a provider of Cloud infrastructure services (IaaS) and reflects the highest level of commitment and adherence to security regulations.
2020	– Pascal Daloz appointed Chief Operating Officer – "From things to life" ambition announced to make the virtual twin experience of the human body possible. – Medidata supports Moderna's COVID-19 vaccine clinical trials with its Rave Clinical Cloud Platform – Acquisition of NuoDB, cloud-native distributed SQL database leader. – Acquisition of PROXEM, specialist in AI-based semantic processing. – Investment in AVSIMULATION (15%), provider of ultra-realistic virtual world for automotive simulation. – Commitment made to the Science Based Targets initiative to reduce greenhouse gas emissions – Membership in the Global Enabling Sustainability Initiative and the Ellen MacArthur Foundation's network
2021	– Enters the S&P Dow Jones Sustainability World Index, ranking 5th in the software category – Science-based targets approved and net zero emissions timeline set – Launch of 3DEXPERIENCE Edu Centers of Excellence, its global program to empower the workforce of the future – Joins the European Green Digital Coalition as Founding Member – Joins the GeSI's Digital with Purpose Movement – Acquired ITEROP, a business process management firm – Majority stake in BLOOM, an AI platform
2022	– Acquisition of Diota, developer of augmented reality and field control technology – Launch of its OUTSCALE brand as the leading sovereign and sustainable operator of trusted business experience as a service – Expansion of the 3DEXPERIENCE Lab to Munich

2023	– The “Generative Economy” announced as the company’s strategic horizon for 2040
	– Bernard Charlès becomes Chairman and Chief Executive Officer
	– Pascal Daloz, Chief Operating Officer, is also appointed Deputy Chief Executive Officer
	– Acquisition of Innova Regulatory – Technology solution leveraging AI to automate investment compliance controls for financial institutions
	– Centric Software acquisition of aifora, the AI-powered price and inventory optimization solution
	– OUTSCALE becomes the first cloud qualified with SecNumCloud 3.2 security visa, the highest distinction in France and Europe
2024	– Bernard Charlès becomes Chairman of the Board of Directors
	– Pascal Daloz named Chief Executive Officer
	– 25th anniversary of 3DEXPERIENCE World (formerly SOLIDWORKS World) event in the U.S.
	– Reveal of 2040 strategic horizon - the Generative Economy
	– Acquisition of EOMYS, with solutions to assess and control magnetic noise and vibrations in electric drives
	– Acquisition of Satelliz, specialized in the development and operation of Kubernetes services.
	– Acquisition of AMCAD Engineering, with a suite of radio frequency modeling and testing software solutions for designing and optimizing microwave circuits.

ANNEX I: DATA SCIENCE AND AI FOR THE GENERATIVE ECONOMY

While data science and AI are very hot topics, our work with AI started many years ago: our users are already augmented with AI through our industry solution experiences. As the Experience Economy and Circular Economy converge into the Generative Economy, our aim is to provide our customers with the means to create their own sustainable universes to address their greatest challenges. Our approach consists of observing and revealing insights about our complex world: learning from those observations, uncovering actionable evidence and truly elevating the understanding of our complex world through sharable, multi-scale, multidiscipline representations.

We're thus bringing the power of modeling and simulation to data, delivered into the core of our customer's processes thanks to virtual twin experiences. Generative technologies are the key pillars and enablers of this new era. Ultimately, we're creating virtual universes – powered by representations, simulations and next-generation AI engines – in the three sectors of the economy we serve. We're helping organizations create next-generation products and services for people and for our planet. We do this by empowering our customers to connect the dots: structuring data into information, giving it meaning through contextualization and ultimately revealing the invisible. Maximizing the virtualization of knowledge and know-how opens new value and potential for industry, businesses and people. This is the power of virtual twin experiences.

We're passionate about supporting industry knowledge and know-how. We've accumulated a wide set of industry-specific knowledge and deep understanding of processes and practices through massive investments. Consequently, our solutions enable customers to capitalize and leverage a profound "Knowledge Book" of data, information, relationships, models, semantics, ontologies, domain corpuses and experiences – providing an industry-grade guiding path toward data-centric values and a Generative Economy. This approach opens a totally new category of solutions, with MOD/SIM/DATA acting as an unbreakable paradigm for shareable, explainable representations and meaningful experiences to transform business.

We believe in using AI in three complementary ways: for sustainability, by developing environmentally efficient products using circular business processes and maximizing value chains; for operational excellence, delivering efficiency and redirecting resources towards innovation for a more competitive business; and for the workforce of the future, upskilling with augmented contextual knowledge and know-how and role guidance. The general trend among businesses is to use AI primarily to reduce cost – but we're orienting AI with MOD/SIM/DATA to enable our customers to enter the Generative Economy.

In the Manufacturing Industries sector, standards, regulations and competition are raising the level of expectations with automotive manufacturers. Every design decision must be weighed against large sets of critical KPIs that might be in contradiction: price, weight, CO2 emission, safety, etc. With MOD/SIM/DATA and AI, every designer can easily understand the impact of their decisions on all criteria. They can leverage knowledge, supplier and value chain content and catalogs, procurement, logistics, best practices, new materials definition and more to select the most relevant combination for a better product. Here, AI-enabled virtual twins help navigate high-dimension complexity and provide a new level of synthesis to guide decisions.

In medicine, our AI-powered MEDIDATA solutions allow pharmaceutical companies to model and simulate data to create virtual patients (simulants) and cohorts (synthetic control arms) for wider, more diverse and more effective clinical trials. MEDIDATA's Synthetic Control Arm (SCA) leverages cross-industry historical data from 30,000 clinical trials and 9 million patients, unleashing scientific research, lowering costs and accelerating timelines when a control group is hard to recruit or retain, such as with rare diseases. An SCA offers a vast improvement over the most common method: searching existing medical literature for comparisons. Here, AI-enabled data opens a new world of generative possibilities, fueling creativity, innovation and new business avenues.

Finally, our customers in the Infrastructure & Cities sector – including nuclear, oil and gas and renewable energy – use virtual twin experiences to elevate data, from engineering and construction through maintenance and operation. Virtual twins are a game changer, providing science-based models for interpreting, understanding and contextualizing real world data from sensors. AI is accelerating these levers by revealing the invisible. Customers can learn from the past to navigate the future using predictive models, such as anticipating deviation risks in construction phases.

We're focusing on catalyzing the convergence between the current Experience Economy – where experience counts more than product – and the emerging Circular Economy, an approach more respectful of the planet and its resources. We're convinced that the resulting Generative Economy requires the powerful opportunities provided by virtual worlds: enhanced, seamless collaboration, ability to foster imagination, and sharing understanding and experiences of any product or process before it's deployed in the real world. Data sciences provide one pillar – inseparable from modeling and simulation sciences – to create sustainable processes and products that benefit citizens, patients, consumers and companies, and our environment, society and world by elevating understanding through virtualization of companies' knowledge and know-how capital. As a scientific company, we leverage and orient those disruptive sciences in virtual twin experiences offering a new 21st century approach to creativity, innovation and responsible transformations.

ANNEX II: THE VIRTUAL TWIN EXPERIENCE

Through the ages, human civilizations have used diagrams, models and annotations to help understand and contextualize some of society's biggest challenges. Now we are in the digital age, computers have replaced the pencil and paper, 3D modelling has replaced 2D diagrams, and simulation has superseded repeat experiments. However, despite the prevalence of these digital formats, we still mostly work in a disconnected manner – with the virtual world distinct and separate from the real world.

Advisory firm Gartner defines a digital twin as a 'digital representation of a real-world entity or system', which comes in the form of a 'software object or model that mirrors a unique physical object, process, organization, person or other abstraction'. At high level, a digital twin is a computer-based model of a physical system. For example, Computer-Aided Design (CAD) is a type of digital twin, representing the 3D shape of a physical object. It is straightforward to see the value of being able to use CAD to try out ideas and explore options, before creating a physical prototype.

A virtual twin experience, however, is much more than just a set of digital copies. It is digitally based, but it also has a lifecycle, includes science-based representations of behavior and interactions, and has a history of decisions and variants. A virtual twin experience represents a product or system as it exists now, but also how it was designed, tested and manufactured in the past, and how it could be operated and maintained in the future.

A virtual twin experience typically starts from a 3D model that represents the shape, dimensions and properties of the physical product or system. The next step would be to carry out simulations on the virtual twin, to explore how the product would behave as it is assembled, operated or subjected to extreme events. The simulations help to optimize and validate the design, materials and production processes; and the decisions that are taken can be captured and linked to the virtual twin, providing traceability through the lifecycle of the real product.

This could be considered as the 'as-designed' virtual twin experience, but the value extends much further after the product is manufactured. As the real product goes through its lifecycle, new sources of data are added to the virtual twin, such as operational data from sensors, measurements of performance, and maintenance records. The virtual twin retains that information, combined with the original requirements, design decisions and simulation results. As the real product goes through its lifecycle, so too does the virtual twin, thus becoming its own lifecycle, the twin of the 'as-made' and 'as-used' product.

In this way, the virtual twin is both the digital replica of the product itself and of its history and evolution. Furthermore, virtual twins do not exist in isolation, but can be made to interact with each other, creating virtual twins of systems and environments. For example, a virtual twin of a shampoo bottle can be put through its virtual production line, into virtual packages and through virtual shipment, visualized on a virtual shelf and ultimately used by a virtual consumer.

By combining information from both virtual and real worlds in the form of a virtual twin, organizations can improve efficiency and productivity, design better products, improve quality, improve business resilience, create new business models, and enable sustainable innovation.

ANNEX III: VIRTUAL TWINS FOR SUSTAINABLE INNOVATION

It's widely accepted today that in order to prevent irreversible damage from climate change, we must take urgent action. The level of environmental degradation from current production and consumption models are reaching the point of no return. For example, nearly 90% of the world's marine fish stocks are now fully exploited, overexploited or depleted. By 2030, we may face a 40% shortfall in freshwater.

The UN Sustainable Development Goals (SDGs) have given companies and governments a clear set of objectives to strive for by 2030, which means we only have a decade to deliver on these commitments. But prior, incremental approaches are not enough to achieve a carbon-free, circular economy within this "decade to deliver." The world needs more radically disruptive innovations.

While companies, institutions and governments are increasingly setting goals to accomplish sustainability, actual plans are harder to come by. This is in large part because, for all their good intentions, most organizations don't yet know what steps to take to concretely meet these objectives. Can virtual twin technology be the lever to operationalize sustainability and the circular economy at speed and scale?

Virtual twins are real-time, virtual representations of a product, platform or even an ecosystem as complex as a city. Dassault Systèmes' 3DEXPERIENCE platform is one way to create virtual twins, used to invent, model, and test disruptive innovations. By eliminating the need for physical prototypes, they reduce time to market. By enabling collaboration and rapid design iteration in the virtual world, they reduce the risk associated with complex projects and improve regulatory compliance.

In addition, virtual twins provide safe testing environments for radically disruptive green and circular innovation. By modeling entire value chains, virtual twins can improve the sustainability of products and services across the lifecycle, cradle to cradle: from designing for reuse to minimizing material use during manufacturing to estimating carbon emissions to modeling reverse logistics for circular economy systems.

For example, in the Transportation & Mobility industry, virtual twin technologies accelerate the vehicle concept, detailed design and design verification stages, while reducing physical testing. The result is a lower embedded carbon footprint and more circular design. The numbers speak for themselves. A large European OEM cut development of physical prototypes between 70-100% for vehicle models with limited design using virtual design and verification.

This is not some promised future technology: virtual twins are already in action today, with an estimated market of US$5.4 billion and a proven track record of helping companies and industries around the world improve the way they grow and operate. The market is set to grow at an astounding rate; it is projected to have a compound annual growth rate of 36% over the next five years. But the current adoption rate of virtual twins is just 10% globally, meaning there is enormous untapped potential to apply virtual twin technology more widely to address global sustainability challenges and accelerate the achievement of the UN SDGs.

Accenture and Dassault Systèmes collaborated on the white paper Designing Disruption: The Critical Role of Virtual Twins in Accelerating Sustainability, to advance the understanding of how virtual twins could help meet the world's sustainability goals. This paper explores use cases from five industries: construction, consumer packaged goods, transportation, life sciences, and electrical and electronics. These five virtual twin use cases alone can unlock more than 7.5Gt of CO2e emissions reductions through 2030 and US$1.3 trillion of economic value. This groundbreaking study is about changing the value chains that deliver the goods and services the world requires. Incremental, continuous improvement in productivity, resource use, emissions and waste reduction are critically needed. But such efforts alone won't address the climate crisis or achieve the UN SDGs. That requires a fundamental transformation of underlying systems and processes, and virtual twin technologies deployed at scale across industries hold the answer.

ANNEX IV: THE ONLY PROGRESS IS HUMAN

Dassault Systèmes' "The Only Progress is Human" initiative, launched in February 2020, aims to raise awareness of today's social and environmental challenges and to encourage the use of virtual tools to promote sustainable innovation.

The Only Progress is Human features a series of "acts." The most recent act, dedicated to healthcare and the patient experience, featured "Emma Twin," an avatar designed to raise awareness of the key role that virtual twins have in advancing healthcare and the innovations that are shaping the future of medicine.

Through a rich social media program, Emma Twin shared stories explaining how the virtual twin of her body was created from anonymous health data to be used for an infinite number of tests that give doctors and researchers a profound understanding of diseases and the effects of new and improved treatments.

Her social media posts documented her participation in ongoing research and medical innovations including: clinical trials using Medidata solutions; the reaction of her heart to different procedures in the Living Heart project; testing CorNeat Vision's corneal transplants; epilepsy and Alzheimer's disease studies in the Living Brain project; wearing the IASO drug administration and monitoring device; and optimizing the home for older adults.

The posts also highlighted: DAMAE Medical's portable microscope for detecting skin cancer; Dynocardia's blood pressure monitoring solution; FEops' cardiac monitoring; LUCID Implants' customized facial implants; and the VORTHEx radiotherapy simulation experience.

Prior to Emma Twin, acts included: Virtual Harmony, a unique musical and visual experience demonstrating how virtual worlds can change the way we experience emotions; Water for Life, a set of initiatives to help industry consume smarter and protect the world's most precious resource; Living Heritage, a student program to experience six UNESCO World Heritage Sites as they may have existed in the past while nurturing skills to innovate for a more sustainable world; and Urban Renaissance, a vision of the city of tomorrow through an innovative 3D video mapping projection designed by Korean artist and researcher Yiyun Kang and projected onto the Dongdaemun Design Plaza in Seoul.