

The 3DEXPERIENCE platform is a completely different approach to support organisations to design, think and dream about new sustainable innovations or

# Dassault Systèmes at the forefront

**The consumer world is changing at a tremendous pace and with it technology as we know it. Already, additive manufacturing is opening up a whole new realm of possibilities to companies to provide us with products and experiences unheard of until recently. 3D fab + print magazine spoke to Dick Hissink, GEO Leader Benelux of Dassault Systèmes, a leading company at the forefront of this new industrial revolution, to discuss how the fascinating and viable work they do will impact on all our everyday lives.**

*By John Butterfield  
and Gillian Gane*

## The unique philosophy of Dassault Systèmes

“Dassault Systèmes is a software company with a difference,” begins Mr. Dick Hissink, the GEO Leader Benelux. “There are a lot of software enterprises out and about, each addressing matters on how to help companies become better, faster, and smarter at what they do. At Dassault Systèmes, however, we like to think that we do more than this by providing our customers with a long-term vision and using a unique approach in order to help them transform to a new way of doing business – we call it ‘business transformation’.”

Dassault Systèmes’ heritage stems from 3D design, and twenty years ago it was providing industries with tools and applications to design in this mode. Typically, it began in the aerospace, defence and automotive industries. From there it entered the field of digital mock-up: how to combine all the 3D design parts through a full facsimile model of the products designed, which naturally resulted into product life cycle management – how to control all the parts. “Today,” continues Dick Hissink, “our organisation has become a world leader in 3D Design Software, 3D Digital Mock-Up, and Product Lifecycle Management Solutions.”

## 3DEXPERIENCE platform

When it comes to being innovative, the staff at Dassault Systèmes are excep-

tional frontrunners; as an example the new and singular solution called 3DEXPERIENCE platform has been developed which offers innovators from business, science, and society to join and start on an interactive journey with a focus on ‘Dream, Create and Live in today’s Age of Experience’. And at technical exhibitions around the world they demonstrate how the company’s 3DEXPERIENCE platform is shaping the thinking, design, engineering, and manufacturing of today’s most innovative consumer electronics to create category-changing product experiences.

The 3DEXPERIENCE platform is a completely different approach to support organisations to design, think and dream about new sustainable innovations or services, to make them possible, to simulate them, model and test them, and finally produce and provide them to the consumers of today and tomorrow. “And it provides a new way to offer experiences for consumers rather than just creating products for them which exactly fit their needs,” says Dick Hissink. “Today, this experience is particularly important because we live in a world that is developing and changing so rapidly that products are no longer satisfying enough, the consumers want to buy experiences.” In fact, to bring such experiences successfully to the marketplace requires entirely different concepts. “From semiconductors that power products, to wearable



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# of the fourth industrial revolution

*“The 3DEXPERIENCE platform helps innovators worldwide to create holistic experiences that have a positive and sustainable impact on consumers.”*

devices, to specialized electronics for transportation, life sciences or construction, rapid changes in technology trends and the high frequency of new product launches require powerful design, engineering and manufacturing applications to create and quickly adapt to new categories. This is why we have devised our collaboration platform.”

It has already proved to be successfully by helping innovators around the globe to create holistic experiences that have a positive and sustainable impact on consumers.

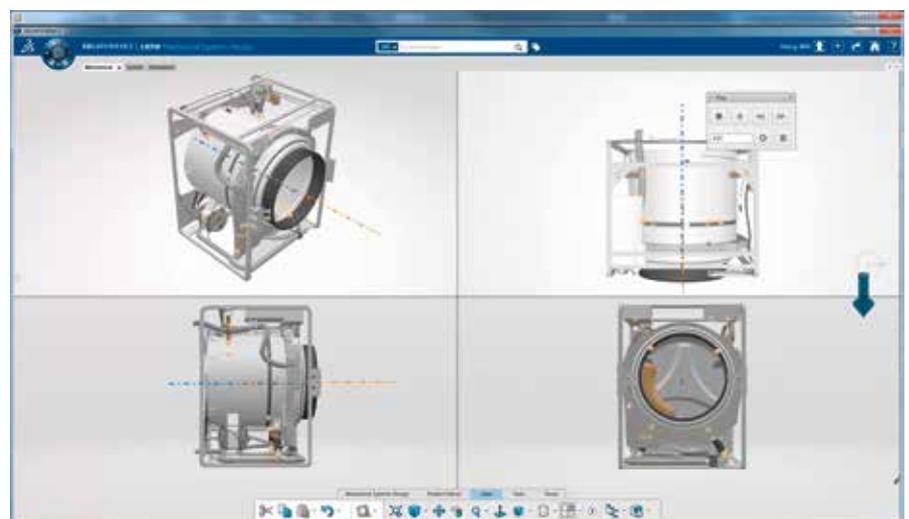
## Social collaboration as a product building block

“Today and even more in the future, the public’s emotional perception of a product will go far beyond the sampling of a product’s functionalities and features”, continues Mr. Hissink. “For example, why is there a difference in demand between say an apple and a pear when their features do not differ so much in comparison? An experience, however, consists of much more than logistics. It is something that evokes emotions, the joy, pleasure and satisfaction about the product or service – that’s what makes the consum-

er happy. In addition, an experience acts as a binding factor between the producer and consumer as both become entwined throughout the entire product life cycle from concept right through to production, and marketing. A product manufacturer/ developer can strive to be informed about the consumer’s reactions and perceptions – even in the creation process – and is enabled to adjust strategies accordingly to obtain the best results. Moreover, the consumer, in his/her own

right, feels to be a part in the creation process of something he/she needs.”

If a company has an innovative idea for its market, but has no indication on how it will be received by potential buyers and consumers, then an invigorating way for the developer to move forward is to work within a social environment where potential new consumers can have a look at the product to examine and experience it and on this basis provide feedback. As such the consumer becomes involved in the ‘dream’ and ‘thinking’ process, the manufacturing process, and effectively all further product stages. The reaction of the consumers will be conceivable and a potential bestseller can be better backed



*Through the 3DEXPERIENCE platform, the consumer gets involved in the ‘dream’ and ‘thinking’ process and effectively all further product stages.*

up, so that the decision to launch a new product is facilitated.

"This is what Dassault Systèmes' 3DEXPERIENCE platform does," continues Dick Hissink. "It unites the producer and consumer in a common goal." When implemented, it can also greatly help to shorten product development. To use an analogy, you can say the cook develops his own spoon. It's the spoon he wants to have because he was involved in the development and in consequence, it will be the spoon that will sell in the market. Naturally, though, you always need to involve potential suppliers at the early stages of development, even if you have a good conceptual idea. It still might be just a dream. "Using social collaboration within the 3DEXPERIENCE platform to create something in such a framework really sounds big and new, but you don't need to turn your whole company upside down to introduce it. You can start small and build it up step by step and at a pace, that is comfortable for your own organisation," relates Dick Hissink.

### Here to stay

Of course, this long-term vision and talent at Dassault Systèmes has not been developed overnight. It has evolved and

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*"We already have more than 190,000 customers worldwide."*

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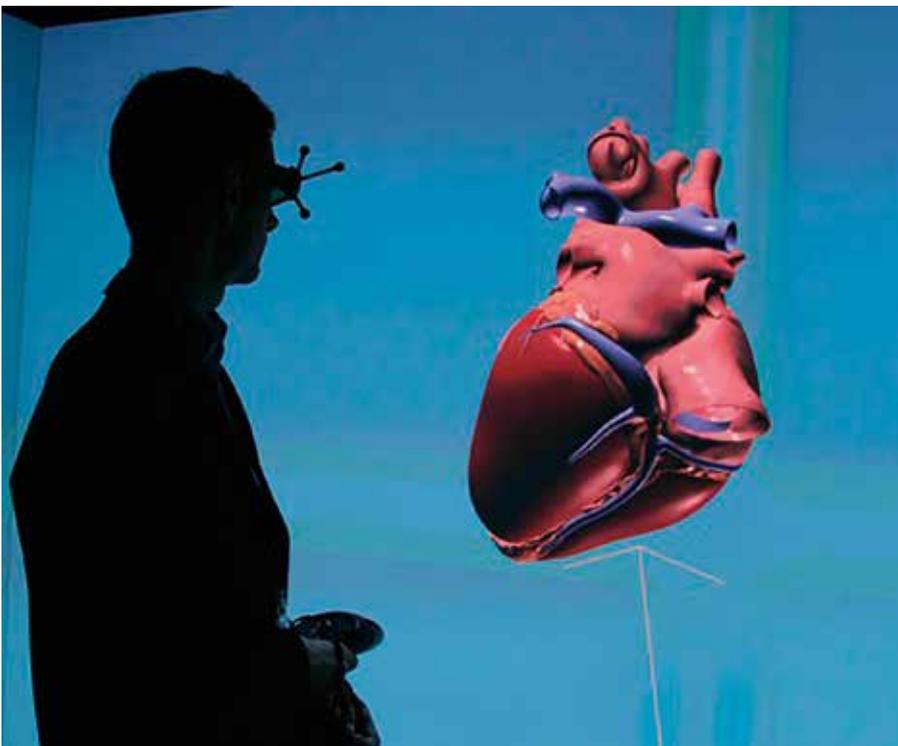
has become almost like a science considering the huge R&D investments made to move forward ambitiously. The other factor specifically addressed is innovation alongside operational excellence. "In traditional IT," says Dick Hissink, "operational excellence is served very well, but we are now living in a different and ever changing world that craves innovation above all, like 3D printing and nanotechnology. Hence, the need for a supporting platform, which in our case is the 3DEXPERIENCE platform, is definitely there in various industries."

"We use innovation as a mean to develop completely new and different 'products', which is a radical change and revolution. Technology today is at a stage where it is no longer an obstacle or a circumstance you have to deal with; technology enables. 3D printing is for sure a cornerstone in changing the world. For example, the World Economic Forum states that to revolutionise healthcare,

innovative working requires an entirely different approach in terms of processes and development support... and even beyond that, we witness that our platform facilitates the harmonisation of products, nature and life, and that this in turn leads again to innovation. The use of the 3DEXPERIENCE platform, enhances creativity whereas the use of materials, the amount of waste, CO<sub>2</sub> emissions, and the weight of products are reduced, factors from which our planet and the people do benefit." These positive effects have been acknowledged a few weeks ago by Global Knights who ranked Dassault Systèmes as the second most sustainable company in the world (2016 Global 100), while many of the others are customers of the company.

### Living heart

An outstanding example for the transfer of creativity and new revolutionary ways of thinking to concrete real-world applications can be found in the story of the 'Living Heart' powered by Dassault Systèmes' 3DEXPERIENCE platform's realistic simulation applications. It is a scientifically validated 3D simulator of a four-chamber human heart, which can be used to study congenital defects or heart diseases by modifying its shape and tissue properties in an easy-to-use software editor. In addition, medical devices can be inserted into the simulator to study their influence on cardiac function, validate their efficacy, and predict reliability under a range of operation conditions. It opens up a whole new window to health care possibilities, enabling 'try-outs' before exceedingly complicated operations while freeing doctors from the regulations and ethics of the real world. Moreover, a cardiologist is enabled to test several artificial valves in that artificial heart, before carrying out the actual procedure in the respective heart. The risk factor for operations could be reduced since the surgeon is already aware what problems could occur because he has tried them out in the virtual world. Through the availability of a virtual twin of the reality a new chapter in healthcare history has opened up which will bring savings in terms of lives and in eventual spendings. And this is not the end of the story: the implementation of these applications could bring significant advantages to other industries as well...



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Dassault Systèmes and the National Research Foundation are helping to create a 3D dynamic model of Singapore – ‘Virtual Singapore’.

### Smart cities

Another futuristic but realistic possibility of applying the 3DEXPERIENCE platform is within cities. Being able to plan a whole new urban area or a city from scratch and to work out how its myriad of systems – from physical roads and houses to waste systems, health-care, and education, to even how sound and light spread, etc., – will function as a major step in urban planning and development. However, this is already happening because Dassault Systèmes and the National Research Foundation

are helping to create a 3D dynamic model of Singapore – ‘Virtual Singapore’ – a virtual platform with a rich real-time data environment and visualization techniques that will be used by Singapore’s government, its citizens, businesses, and research communities to develop tools and services that address the emerging and complex challenges that Singapore faces daily.

### Plastronics

Another important ground-breaking field for Dassault Systèmes has been in plastronics. The respective high-tech industry group has just visited the world’s largest consumer electronics exhibition in Las Vegas in January 2016 where ‘plastronic technology’ – a method of 3D printing plastic with the electronics contained inside it – has been showcased. This development is exciting as it represents

yet another next step in progressing 3D printing technology.

### Further towards the future

With already over 190,000 customers around the world, the future looks bright for Dassault Systèmes. The company is already strong in traditional industries such as transportation and mobility, aerospace and defence, and its continuing challenge will be to make other industries aware that digital technologies offer great benefits for them as well. Some of the target markets for the coming years, are high-tech, industrial equipment, consumer goods & retail and life sciences. Dassault Systèmes will also continue to invest largely in R&D to stay at the forefront of the technology drive; furthermore, the focus will be kept on a broad industrial perspective ranging from topics as far afield as from modelling to virtual biosphere, and from a minute molecular level to a full blown constructional level which ensures a high level of flexibility to react to a diversity of market situations. To ensure that it is successful in all these fields, great care will be taken to transfer the full potential of its technologies to each and every promising industry.

“Quite simply,” concludes Dick Hissink “we intend to be the leading partner in 3D offerings to the world, and to the companies and partners around us. Our dream is to further define and expand the power the virtual world holds in store for real-world experiences. Through this, we will carry on improving the life quality, based on better products which make the world a better place to live for us all. This is our firm belief which influences strongly everything we do.”

### **Benelux organization, jointly with Quintiq**

Dassault Systèmes’ 3DEXPERIENCE platform, designed to offer experiences to its customers, has been devised to fulfil customer expectations in helping them with the realisation, modelling, simulation, manufacturing and, in the end, the delivery of new products to the market. In all these areas the company offers solutions. In order to build up an experience portfolio which meets the customers need across the entire life cycle, Dassault Systèmes has consequently made a number of acquisitions. A recent one is the acquisition of the company Quintiq in The Netherlands, which employs around 500 people worldwide. It is specialized in optimizing supply chains and has increased Dassault Systèmes’ footprint in the Benelux enormously.



The capabilities of the 3DEXPERIENCE platform enhanced creativity in the development process of Faraday’s racing car of the future.