

INDUSTRY RENAISSANCE

A GLOBAL TRANSFORMATION TOWARD SUSTAINABLE INNOVATION

POSITION PAPER

When Johannes Gutenberg invented the moveable-type printing press in 1439, he helped spark the great European Renaissance, increasing the availability of knowledge and raising the trajectory of humanity's progress. Today, a new renaissance has begun to raise that trajectory again. This transformation – Industry Renaissance – is a rebirth destined to propel all of humanity to a more prosperous and sustainable future.

For more than three decades, Dassault Systèmes has pioneered digital technologies that enable and accelerate industrial innovation. Our close partnerships with global leaders and startups in every industry uniquely positions us to recognize emerging trends, and we have detected the early signs of a transformation so sweeping that it can truly be called a renaissance.

This renaissance – Industry Renaissance – will disrupt not only every industry but every sector, including education and government. Industry Renaissance is not digitalization of manufacturing, but a fundamental transformation in which superior mastery of knowledge (what data means and what to do with it) and know-how (how to do what needs to be done) determines market leadership.

Today's global industry leaders – Google, Amazon, Facebook, Alibaba, Uber and the like – combine products and services to deliver superior experiences without any manufacturing capabilities. As these leaders demonstrate, for the first time since the assembly line revolutionized work in the early 20th century, superior mastery of knowledge and know-how is the new competitive differentiator.

A TRANSFORMATIVE CONVERGENCE

Industry Renaissance is emerging from an unprecedented convergence of transformative technologies – technologies that Dassault Systèmes has been instrumental in either

inventing or applying – that have created the necessary conditions for this global progression:

- **Virtual worlds, the most significant advancement in capturing and conveying knowledge and know-how since the printing press, are the medium of Industry Renaissance.** Because virtual worlds can replicate anything – a single molecule, a complex system or an entire city – in precise scientific detail, they combine library, classroom and laboratory. They expose relevant knowledge and know-how in context of how they are applied. They facilitate rapid, safe and inexpensive experimentation using a multi-discipline, multi-scale approach that accelerates understanding by showing, not telling. They empower organizations to iterate between the real and virtual worlds, testing real-world data and new ideas virtually before pushing new experiences into the real world.
- **Made-for-cloud digital experience platforms are the infrastructure of Industry Renaissance,** enabling users to leverage knowledge and know-how through virtual worlds. Although virtual worlds have been used by industry leaders for years, digital experience platforms are the key to harnessing their full potential. Accessed via the cloud, digital experience platforms allow even the smallest organization to transform an industry – or create an entirely new one – by eliminating

upfront capital expenditures, ensuring equal access to technology and markets. As the world's only fully digital, federated, holistic experience platform, Dassault Systèmes' **3DEXPERIENCE®** platform is the leading enabler of Industry Renaissance.

- **Platform-based marketplaces make it quick and easy to identify, hire and collaborate with subject-matter experts using virtual worlds.** Together, platforms and marketplaces convert suppliers into value partners who can conceive of, contribute to, experiment on and learn from cloud-hosted virtual worlds as easily as any internal employee. Marketplaces also allow organizations to quickly and easily identify, manage and collaborate with multiple value networks, assembling the ideal team for any project, including those that bridge multiple industries.

WORKFORCE OF THE FUTURE

Because superior mastery of knowledge and know-how is the new competitive differentiator, Industry Renaissance will transform education as well as commerce. Market demands are changing so quickly that, for businesses to find the skills they need and provide career stability to their employees, they must become education centers. Here, too, virtual worlds, made-for-cloud digital experience platforms and marketplaces have significant roles to play.

Virtual worlds deliver relevant knowledge and know-how

to workers, presenting it as powerful and intuitive virtual experiences. This makes them ideal vehicles for mentoring employees in performing today's tasks and mastering tomorrow's. Continuing education, therefore, can become an inherent part of workers' daily activities, equipping them for fast-evolving roles through experience-based learning, providing employment stability and ensuring that employers can organically grow their workers' skills.

Ideally, each industrial sector will collaborate with educators and governmental leaders to create networks of formal and vocational training in knowledge and know-how delivered via virtual worlds.

INDUSTRY RENAISSANCE IS HERE

Industry Renaissance has already begun. Dassault Systèmes is collaborating daily with individual inventors, small startups, medium-sized enterprises and global enterprises to realize its potential.

Although this group is small today, we expect Industry Renaissance to expand exponentially; the enabling technology is available and many companies have begun implementing it. By outlining the total vision for Industry Renaissance, we hope to accelerate the day when powerful digital experience platforms deliver all of humanity's knowledge and know-how as intelligent virtual worlds, supporting and freeing people to dream, envision, innovate and create a sustainable future.

Our **3DEXPERIENCE®** platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the **3DEXPERIENCE®** Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 210,000 customers of all sizes in all industries in more than 140 countries. For more information, visit www.3ds.com.

