

Learning Centers, a Tidal Wave in shaping the Workforce of the Future



3DEXPERIENCE®

Euro - CASE
OSLO, October 21, 2019

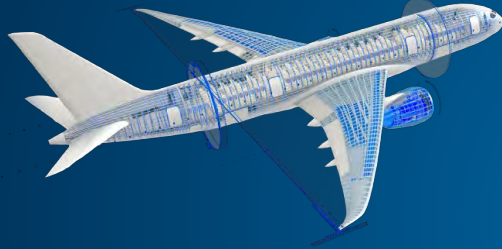
Xavier Fouger
Workforce of the Future
Senior Director – Learning Centers & Programs

Our Purpose

“Dassault Systèmes provides business & people with **3DEXPERIENCE** universes to imagine sustainable innovations capable of harmonizing product, nature and life.”



A 40 Years Journey in Industry Transformation



1981
**3D
Design**

1989
3D DMU
Digital Mock-up

1999
3D PLM
Product Lifecycle
Management



3DEXPERIENCE

2012
**3DEXPERIENCE®
platform**
Business Experience

Video can be seen at:

<https://www.youtube.com/watch?v=NqubbRN2PjM>



New Skills, New Roles, New Education

Learning Transformation

A composite image featuring a man in a plaid shirt looking out an airplane window at a large jet engine. In the foreground, a computer monitor displays a 3D model of a turbine engine component. The background shows a sunset or sunrise over a landscape.

"...there's never been a worse time to be a worker with only 'ordinary' skills and abilities to offer, because computers, robots and other digital technologies are acquiring these skills and abilities at an extraordinary rate."

*Erik Brynjolfsson and Andrew McAfee,
MIT Initiative on the Digital Economy (from their book *The Second Machine Age*).*

Roles are shifting

Entrepreneurship Innovation	
Engineer's activities	Engineer's role
Technician's activities	Technician's role
Operators activities	Operators role

Learning Centers

New practices are cyber-physical

A modern, brightly lit industrial learning center with large windows and people observing equipment. The scene is split into two panels. The left panel shows a clean, white industrial environment with various pieces of machinery and a yellow overhead crane. The right panel shows two people, a man in a blue sweater and a woman in a dark jacket with a tan bag, looking at the equipment through a large glass window.

*Industry-inspired Learning Partners for **Industry Renaissance**
Knowledge and Know How in Industry, Academia and Society.*

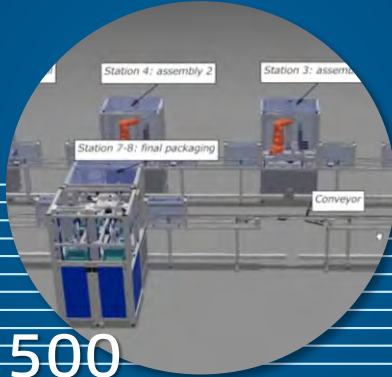
Learning Centers | Investment challenge

K€

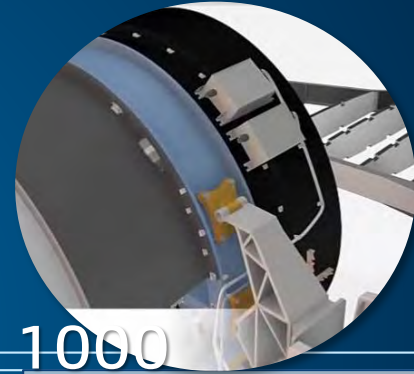
50



500



1000



Academia & Industry connected by the 3DEXPERIENCE *Platform*

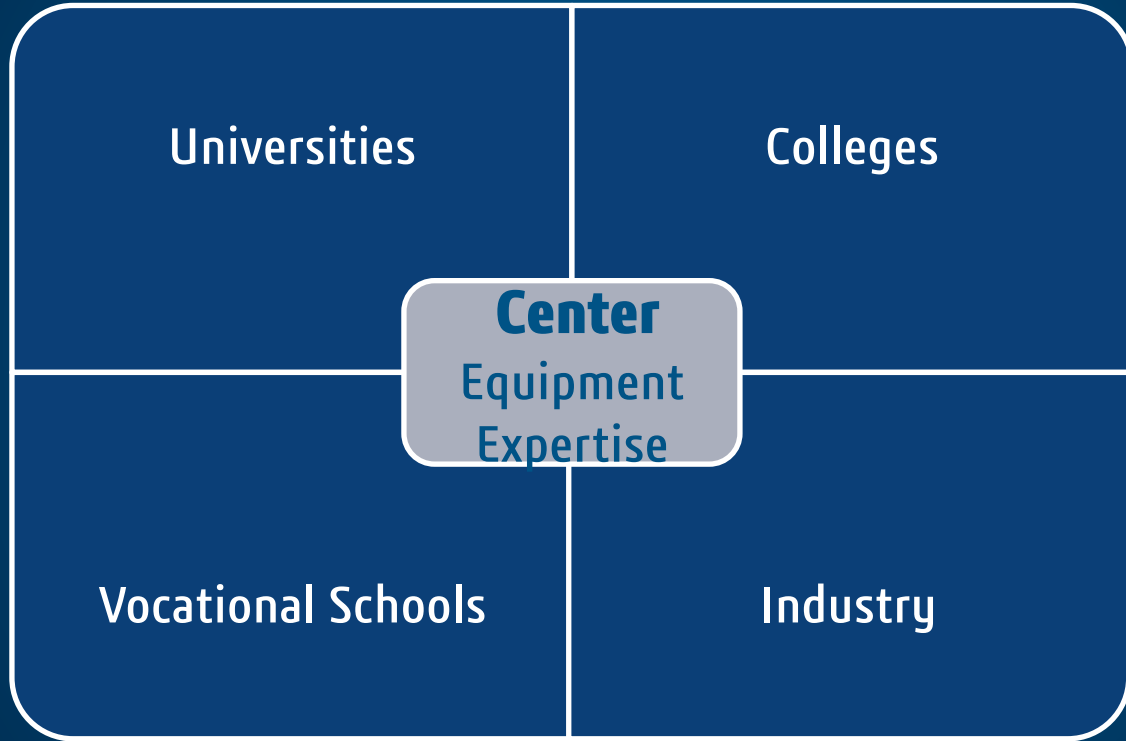
Multi-disciplinary
Cloud-based
Social Collaboration



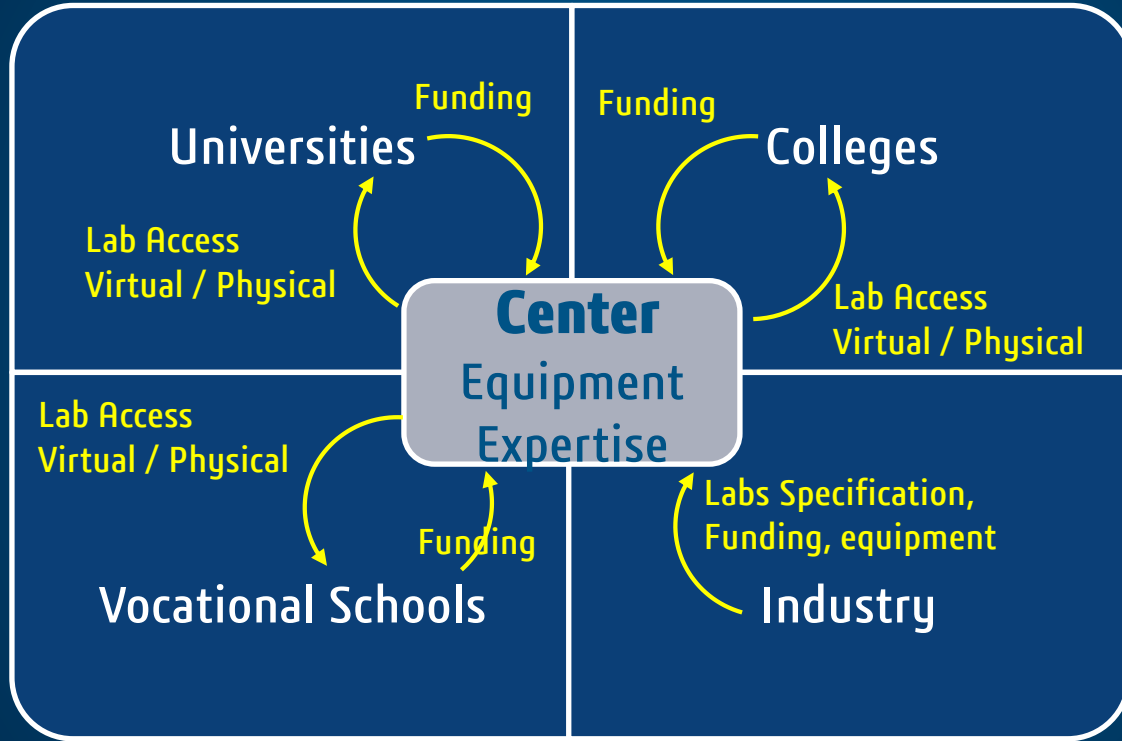
3DEXPERIENCE Learning Centers



3DEXPERIENCE Learning Center



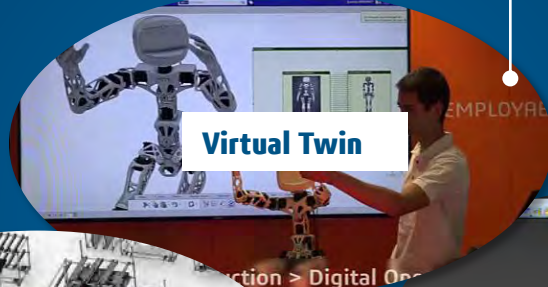
3DEXPERIENCE Learning Center | Acces to learning



3DEXPERIENCE Learning Center | Acces to learning



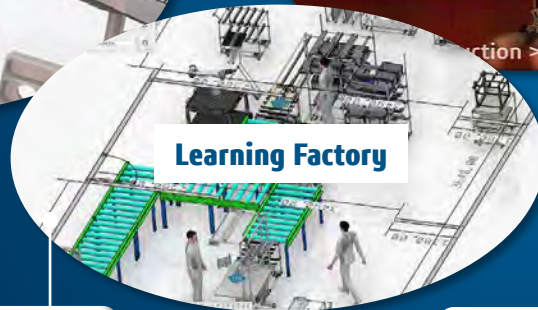
Additive manufacturing



Virtual Twin



Cobotics



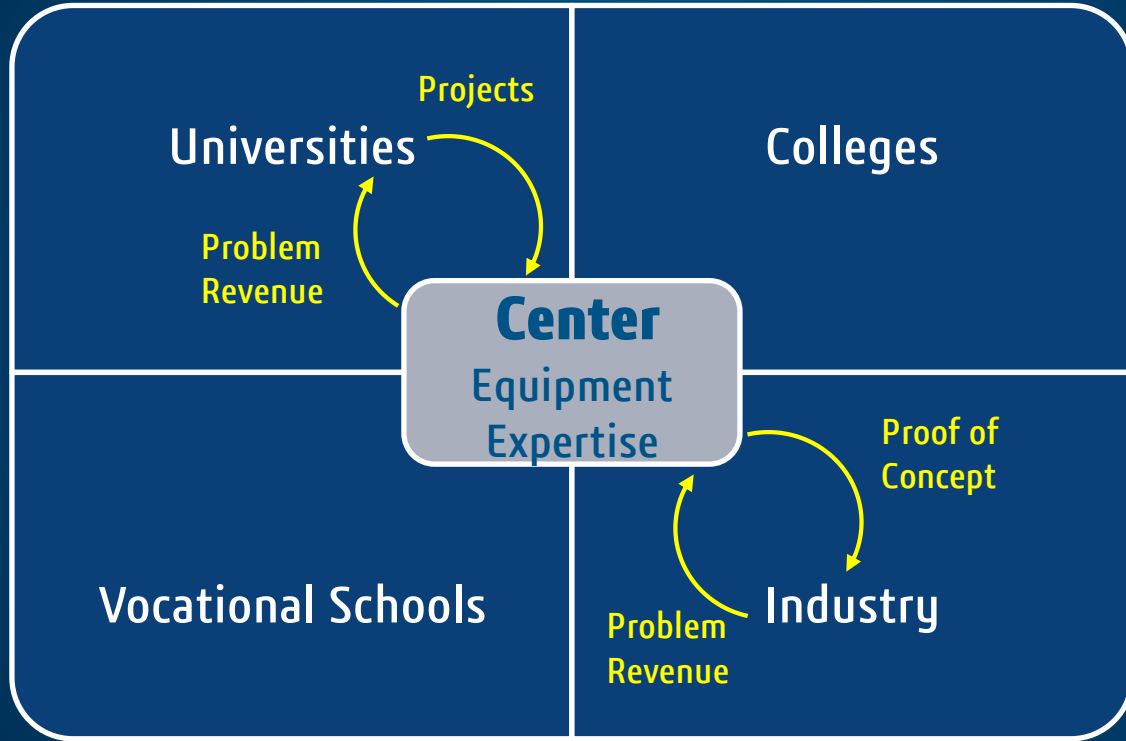
Learning Factory



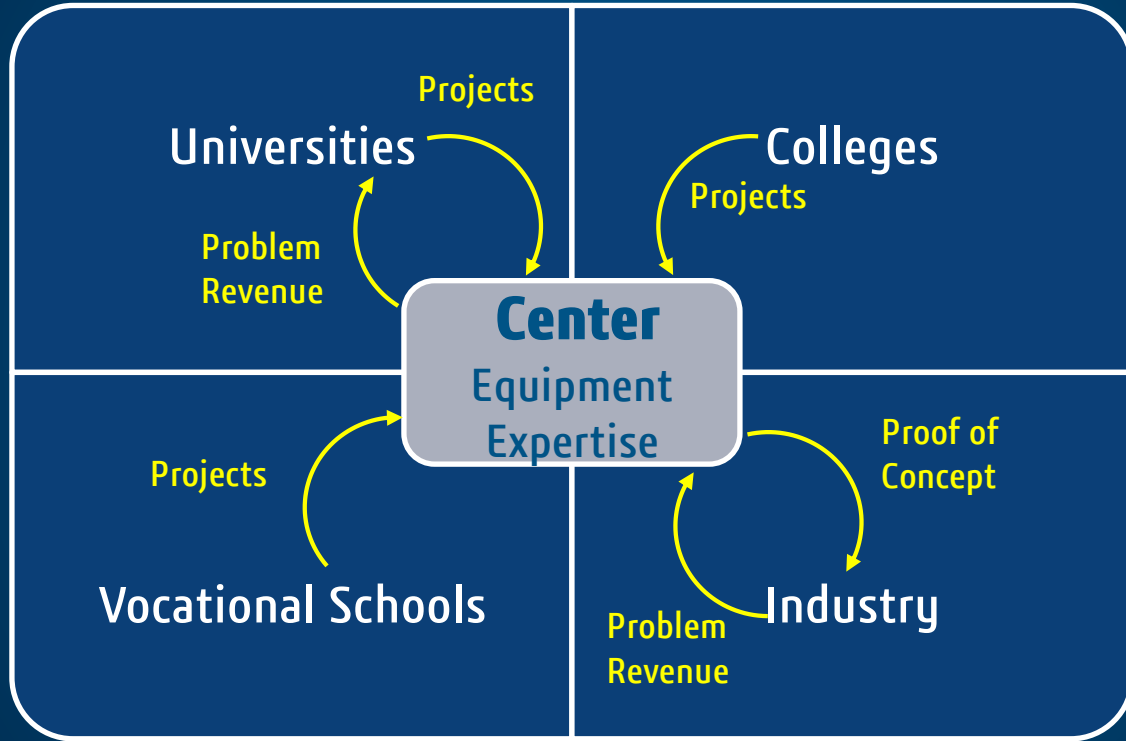
Composites



3DEXPERIENCE Learning Center | Authentic projects



3DEXPERIENCE Learning Center | Formative collaboration

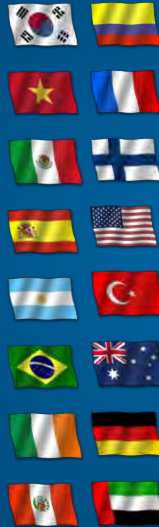


3DEXPERIENCE Learning Center | Authentic projects

GLOBAL FACTORY 2012 - 2014

SMART FARM 2014 - 2016

FACTORY FUTURES 2016 - 2017



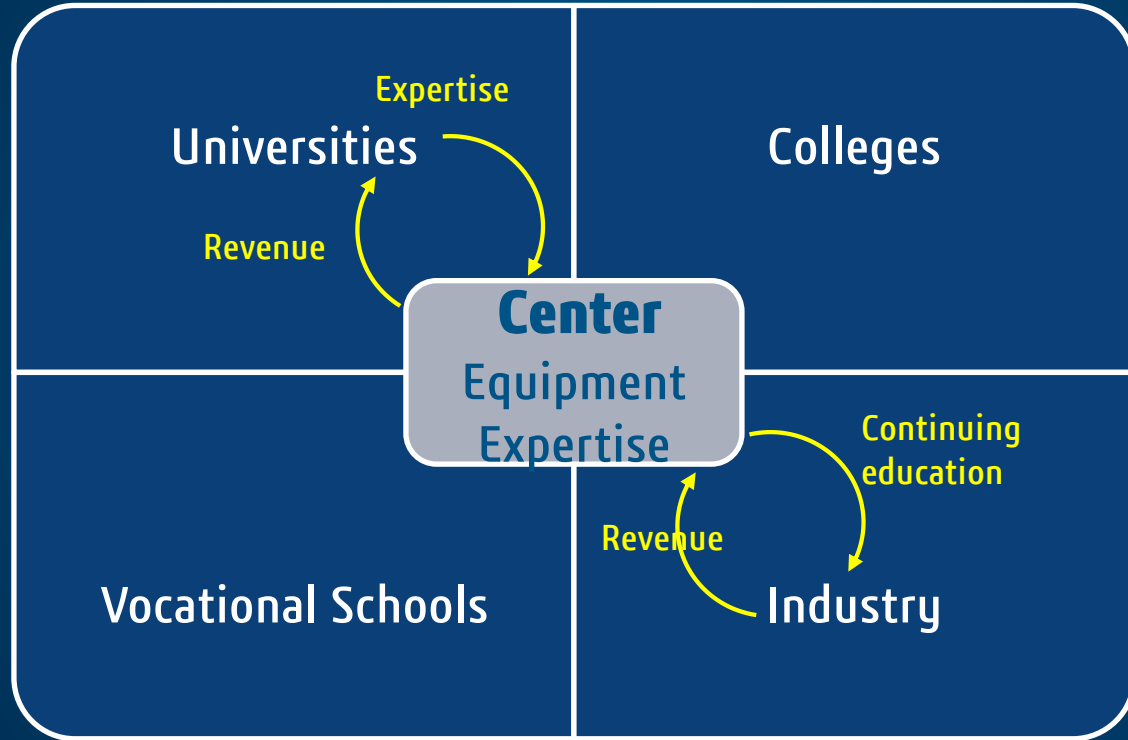
500 students, 18 Universities, 16 countries, 13 hours time difference; Yearly: September-January

EURLAB 2012 - 2018



Distributed design of mechatronics systems, high school students meets one a year to build and operate

3DEXPERIENCE Learning Center | Rapid knowledge transfer



3DEXPERIENCE Learning Center | Rapid knowledge transfer

Simultaneous content development for Initial & Continuing Education

- ▶ Course content optimized for development cost AND consistency
- ▶ For Students AND professionals
- ▶ For Engineers AND Operators



National & Regional programs

Nationwide ecosystems connected by 3DEXPERIENCE



Learning Centers | Skill gap challenge



Decision making
machines -
Environment



**Engineering
Ethics**



Exponential
Complexity



**Interdisciplinary
Skills**



Digitization of
Everything



**Digital Literacy
& Security**



Imperative
Globalization



**Intercultural
Agility**



Career Path
Fragmentation



**Lifelong
Learning**

Educators Challenge



- Most new jobs yet unknown

What changes ?

What to teach ?

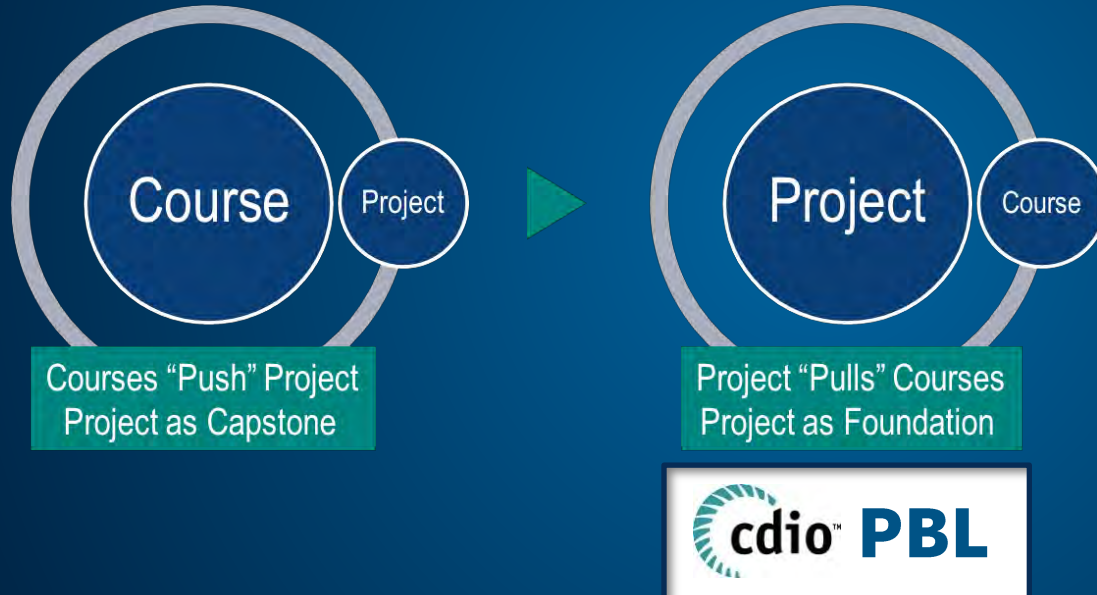
- The skill of solving problems
- The skill of Learning

- Project Centric Learning

How ?

Project-Centric Learning

Students learn better in Authentic context



- ▶ Soft Skill & disciplinary knowledge overlaid
- ▶ Start with ideation
- ▶ Finishes with making
- ▶ Contextual: Relevant to Industry, Society, Environment
- ▶ Social

Transposing the context of practice

From Projects in Industry to PBL in Education

INSPIRATION

INNOVATION

CREATION

Industry
Academia

LEARNING

EVALUATION

I L I C E

ILICE in the Eyes of Educational Experts

Science starts to be available....



Facilitating process competencies with digital workspace

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Abstract

Nowadays, industries demand more process competencies to work online in virtual teams. The study focus on 3DEXPERIENCE™ platform and digital workspace to support project work in a PBL course of Automation of Manufacture Process. As long as online collaboration and projects management are facilitated, the students acquire process competencies. In the platform, students perform all the project group activities, including communication, ideation, scheduling and documentation, while using real engineering tools to finish the project. The course of the undergraduate curriculum of Mechatronic Engineering has six teachers and 22 students from the last semesters. The curriculum is blended in lectures and projects. Each group of five or six students has to develop a project taken from an industry real manufacturing process. This study shows the first implementation experience and lessons learned. The data were collected from open-ended questions and by tracking the group process into the online platform. The effectiveness of this strategy was assessed by using text analyses and achievements were compared with previous courses.



Development of innovative suspensions for a radio-controlled light racing car Collaborative project into 3DEXperience platform

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Students' experience with Dassault Systemes' ILICE platform for PBL

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Abstract

Students increasingly bring informal digital tools and practices into formal educational arenas. For collaboration and organisation of the problem-based project work at Aalborg University (AAU), students equivalently use tools that they know from everyday life and previous education, e.g. Facebook and Google Docs. These might be easy to use, but not necessarily the best tools to support the learning process and experience. The university currently does not provide a feasible alternative solution for digital support for project work. The primary virtual learning environment of the university is a learning management system mainly used for delivering course descriptions and resources, leaving the students on their own with respect to collaboration tools. This gap is remarkable, especially given the fact that AAU considers the Problem Based Learning (PBL) as the core of the learning process.



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