



Industrial Metaverse ,Hype or Hope ?

Theo Papadopoulos
Siemens AG




Climate
Change



Glocalization



Digitalization



Demographic
Change



Urbanization



Industrial Metaverse

Industrial Metaverse to accelerate

Innovation

Sustainability

Access to new tech

Different Metaverse areas are emerging

Consumer



Enterprise



Industrial



Consumer Metaverse future already in threat?

Disney Eliminates Its Metaverse Division as Part of Company's Layoffs Plan
THE WALL STREET JOURNAL.



Meta has reportedly stopped pitching advertisers on the metaverse
INSIDER

Microsoft is sunsetting social VR pioneer
AltspaceVR
TE



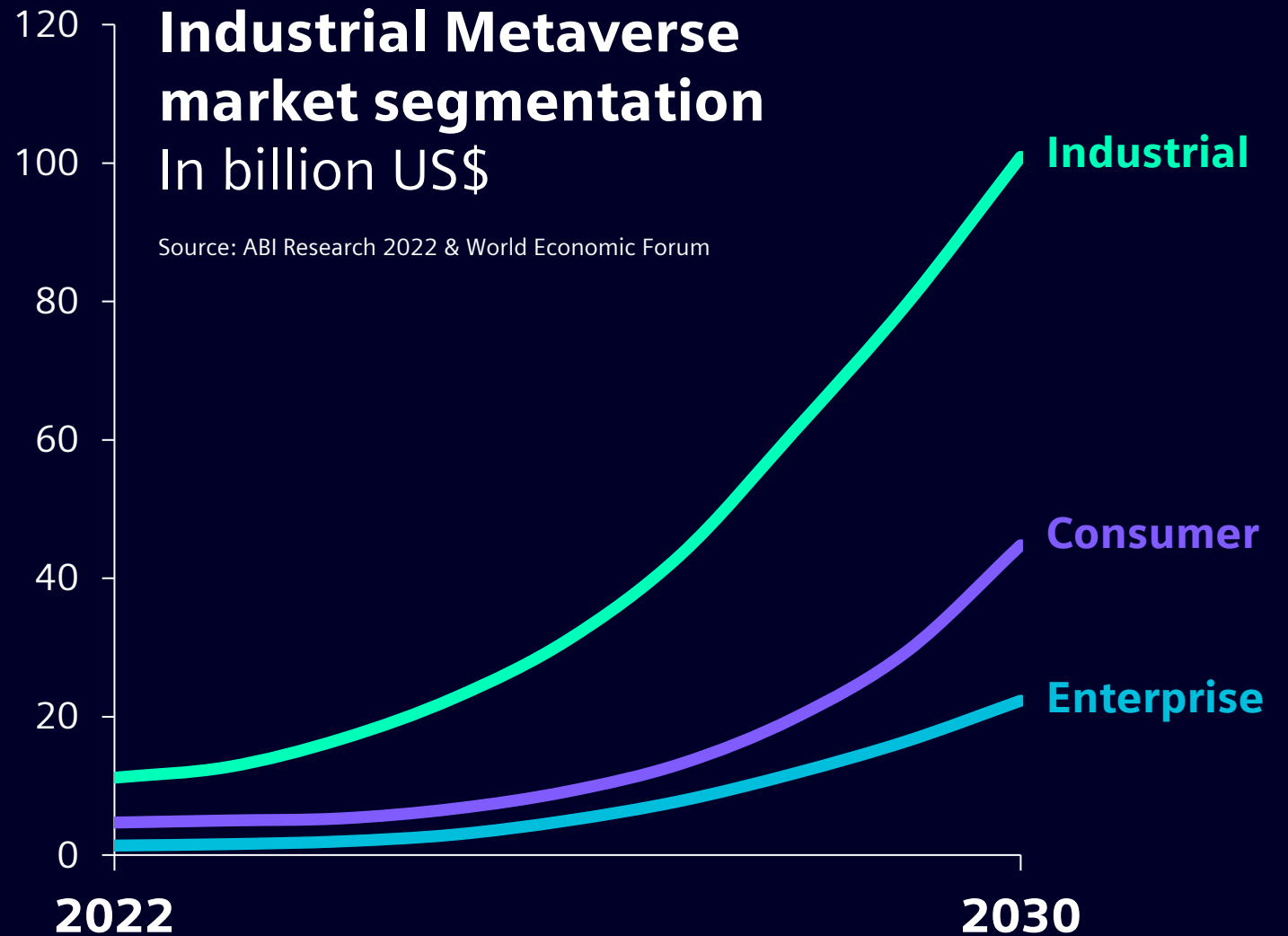
The Metaverse is dead.

Business Insider



But what about the Industrial Metaverse?

The Industrial
Metaverse market
is growing the
fastest

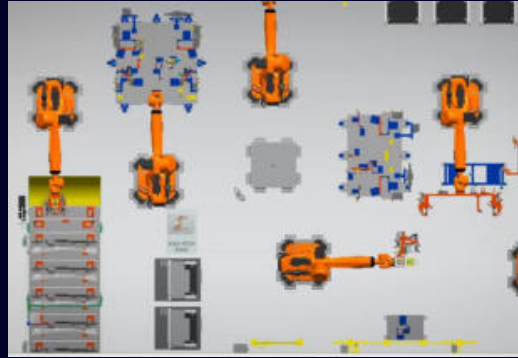


The Industrial Metaverse

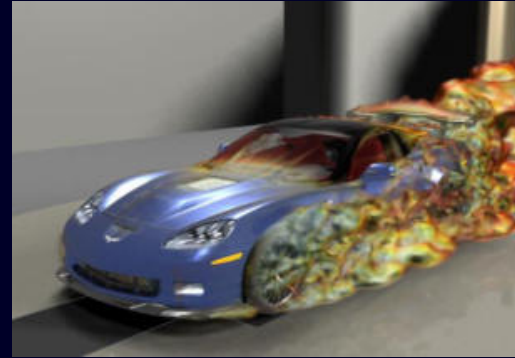
A user-centric virtual place to **collaborate, experience & interact** with the comprehensive Digital Twin where engineering decisions are made leveraging precise robust data – **Real & Digital!**



Visualizing the Digital Twin in its context, gaining insights in a **realistic** environment



Meeting in **real-time**, to **collaboratively review** the Digital Twin and make changes immediately



Continuously and **interactively** evaluating, **simulating and predicting** the Digital Twin behavior



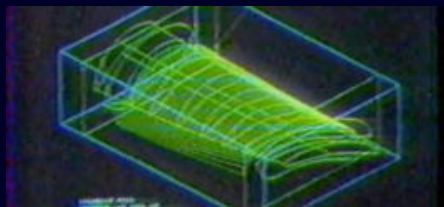
Monitor, analyze and manage real assets **interactively in closed loop with Digital Twin**

The evolution of the Industrial Metaverse

Model
pioneers



CAX
sunrise



PLM
pervasion



Digital
Twin era



Industrial
Metaverse











~1985

~2000

~2015

~2022

Industrial Metaverse a convergence of key technologies

-  Digital Twin
-  Artificial Intelligence and Machine Learning
-  Software Defined Automation
-  Internet of Things
-  Edge and Cloud Computing
-  User Experience
-  Networks (5G/6G)
-  Blockchain

Industrial Virtual Worlds



Industrial Metaverse as enabler for Sustainability



Design & Engineering



Virtual Testing & Validation



Production



Operations



Training



First Examples – Siemens as Customer Zero

Nanjing



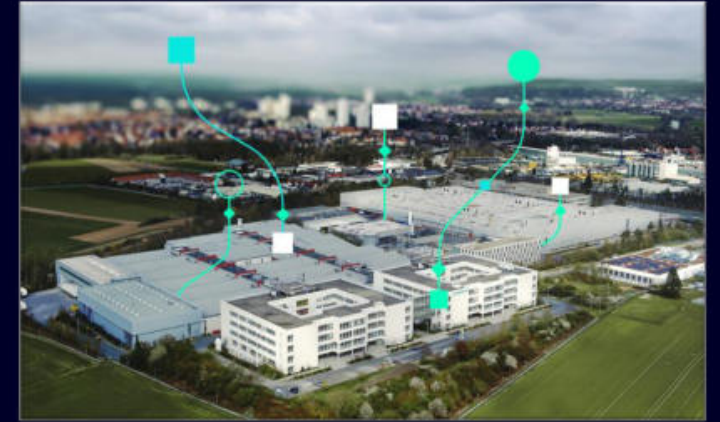
First digital native factory born from own digitalization concept

Siemensstadt²



Digital twin ecosystem along the lifecycle of a sustainable and tech driven future city

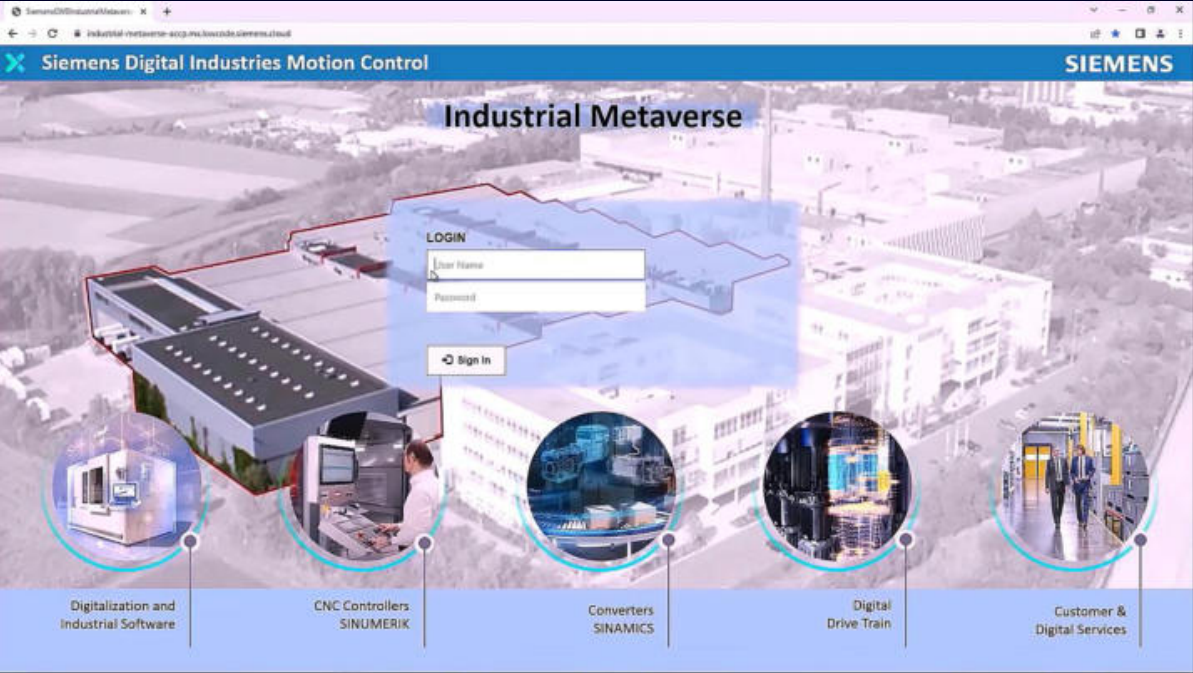
Gerätewerk Erlangen



Blueprint factory for the industrial Metaverse

Siemens First Examples Customer Zero & FREYR

GWE



FREYR



Main challenges slowing developments and adoption

Lack of
connectivity



Lack of
interoperability



Lack of
skills



Standardization & Interoperability



Working Group Industrial Metaverse



OpenUSD for 3D Interoperability

Industrial Metaverse is here to stay

It only takes us to open up for collaboration to realize it

Contact

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