



Podcast: Siemens Industrial Metaverse Case Study by Barton Goldenberg & Tim Bajarin

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In 2022, the high-tech and venture capital industries' focus on the Metaverse reached a feverish pitch, with VC funding for the Metaverse surpassing \$120 billion. While the new focus in 2023 is on generative AI (think ChatGPT), make no mistake about it; the VC community and individual companies continue in 2023 to make huge investments in the Metaverse (often referred to as the Virtual World).

Earlier this year, Tim Bajarin and I created a new podcast titled “Business Success in a Virtual World.” In our last podcast, I presented the Proctor & Gamble’s Life Lab Metaverse case study, a wonderful example of how a US global consumer products company is leveraging Metaverse/Virtual World tools to create consumer applications for well know products like Gillette razors, Oral-B & Crest toothbrush systems, and many other well-known brands. Life Lab is fun to visit, and Life Lab’s impact at P&G is significant: At CES, thousands of people visited Life Lab over the 3-day conference. P&G confirms that each visitor spent on average 20 minutes inside the Life Lab. That compares to the average consumer spending about 7 seconds reading or 30 seconds watching a P&G ad. Think about that for a moment; that’s significant.

During this podcast, I purposely want to switch gears and focus on a B2B Metaverse case study. More specifically, I want to talk about how Siemens, an innovative, global German company is

pioneering industrial Metaverse usage.

For those unfamiliar with Siemens, they are a German multinational conglomerate with annual revenues in 2022 of \$78 billion. They are headquartered in Munich and have foreign branch offices globally. Siemens was founded in 1847 – more than 175 years ago! Today Siemens is the largest industrial manufacturing company in Europe. They position themselves as a technology company focused on industry, infrastructure, transport, and healthcare. They focus on resource-efficient factories, resilient supply chains, smarter buildings and grids, sustainable transportation, and advanced healthcare. Siemens takes pride in creating and implementing technology that adds real value to their industrial customers' operations.

Before I share with you details of Siemens' Metaverse case study, I want you to know that Siemens has taken a pioneering and strategic approach to doing business successfully in the Metaverse, something Tim and I have been promoting for the last couple of years. For example, Peter Korte, who is Siemens' chief technology and strategy officer recently said: "We don't claim that we know what the Metaverse is, but we have an idea of what it could be, and we want to shape it." What Korte and other Siemens executives know is if Siemens can put their stakes down in the industrial Metaverse space early on, it will propel Siemens' own transformation plan to become a more digital, software platform-driven, engineering firm.

Let's now dig into some details about how Siemens is delivering on their B2B industrial Metaverse vision. Implementation of this vision falls under the responsibility of Siemens' Digital Industries division, whose CEO – and this is quite important -- is also a member of the Siemens management board. For context, Siemens Digital Industries division focuses on creating tools for designing, testing, and manufacturing physical products like cars, airplanes, computer chips and consumer goods.

Siemens' implementation strategy is built around the use of digital twins – which Tim has briefly spoken about. **In fact, Siemens believes digital twins are the building blocks for the Metaverse.** What has impressed me is the extensive portfolios of simulation, optimization, testing and design tools Siemens has created to link factories to digital twins in the Metaverse.

Here are two short examples of how Siemens is actively taking its own medicine.

- **Example 1:** Siemens has designed, modelled, tested, and built a new Siemens factory in Beijing using a digital twin that simulates factory machines, people, robots, and materials to find an optimal blend of equipment and processes. This new factory is said to be 20% more productive than current factories. Perhaps more importantly, through these sorts of simulations, Siemens and their industrial customers can not only find efficiencies, but they can lay the foundation for data-driven insights that impact factory design, maintenance, product design and people management including training and automation.

- **Example 2:** To illustrate the industrial Metaverse, Siemens currently is developing between now and 2035 its own smart city, called Siemensstadt Square, which is a digital twin of an existing city called... Siemensstadt ... that dates to the 1890s. As a part of optimizing this digital twin city, Siemens will be determining what kind of buildings are needed, simulating personnel requirements, optimizing traffic flows and much more.

Let's look deeper at four key accomplishments Siemens is seeing as pioneers in the industrial Metaverse:

Accomplishment #1: Siemens has installed its factory automation technology in 30% of all manufacturing equipment, where their design and product lifecycle management tools are a staple in most industrial companies. These tools generate terabytes of factory machine data that can calibrate a production digital twin in the Metaverse with live data coming directly from the factory floor. This live data feed can in turn be used to design better factories where Siemens is able to identify bottlenecks and quality defects early on in the design process.

Accomplishment #2: Siemens' goal is to transform the way industries build factories for new products. For example, when Siemens faced a semiconductor shortage during the Covid pandemic, Siemens assembled a digital twin to redesign a Siemens circuit board to take advantage of new parts. Siemens was able to optimize the design and push the new board into production within days versus the more six months using more traditional approaches.

Accomplishment #3: Siemens Digital Industries has grown revenues an impressive 25% (from \$15 billion to \$20 billion) in the past 2 years by transitioning its digital twin portfolio to an industrial Metaverse cloud.

Accomplishment #4: To support their industrial Metaverse cloud, Siemens has launched two important initiatives:

- Siemens created their Xcelerator digital business platform and partner ecosystem to help both Siemens and external companies accelerate their digital transformation efforts.
- In June 2022, Siemens struck a deal with the American high-tech company Nvidia to combine Siemens' Xcelerator digital business platform with Nvidia's Omniverse platform both to enable the industrial Metaverse and to help companies design and operate Metaverse applications.

Tim and I feel strongly that now is the time for all companies to create and implement their Metaverse strategy. For the German engineering firm Siemens, being a pioneer in the Metaverse has gone well beyond a strategy; it has become more of a crusade whereby they see themselves as 'the Petri dish for the industrial Metaverse'. No surprise that German chancellor Olaf Scholz, who spoke at Siemens' 175th birthday party, said Siemens had "electrified, moved, united and

constantly reinvented the world.” And today, in the industrial Metaverse, Siemens continues this impressive journey.