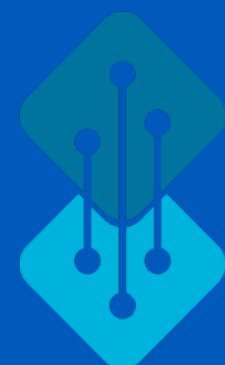


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DIGITAL TWIN
T E C H N O L O G Y

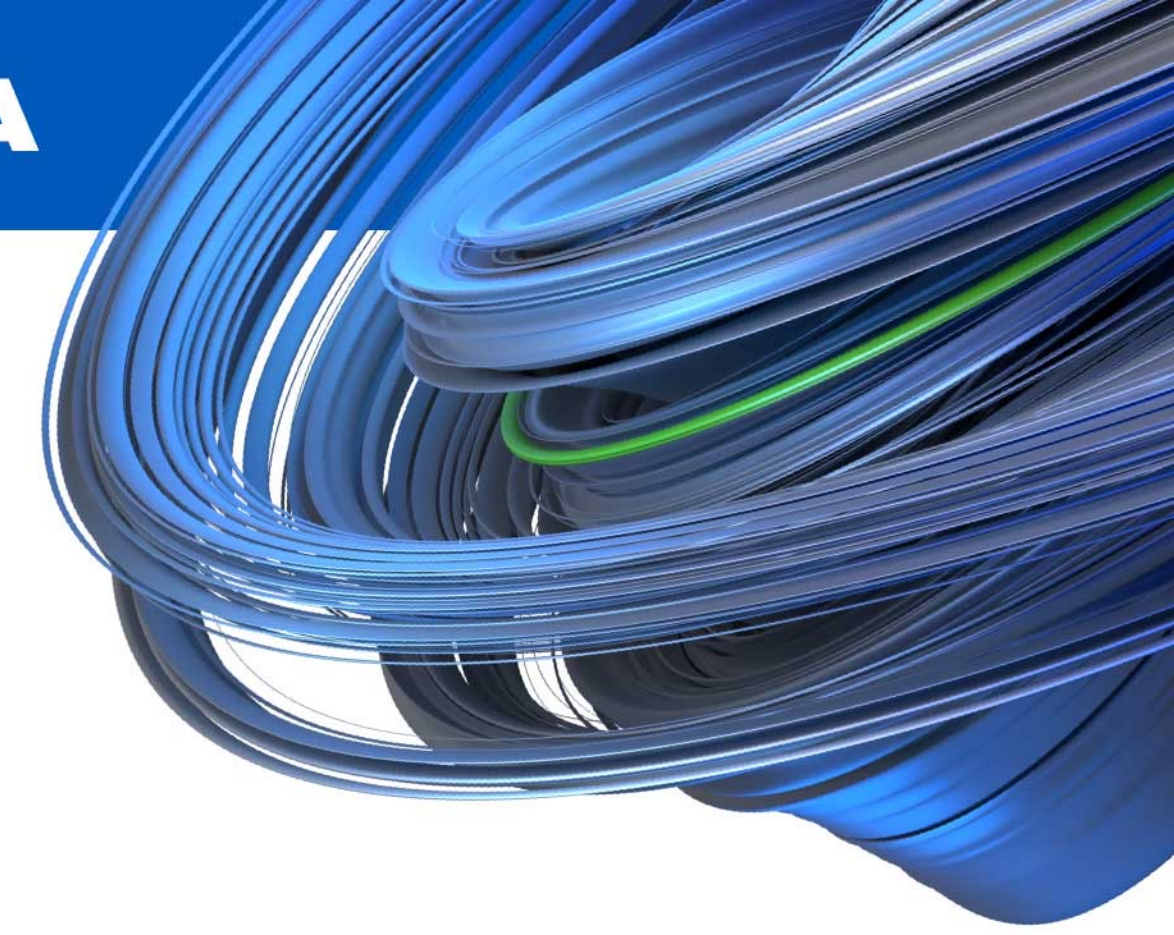
Digital Twin Technology Bridging the Chip Manufacturing Gap

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November 16, 2022



- SME based in Cologne, Germany.
- Provide digital twin software solution for Industry4.0, Construction, ICT and Automotive sector.
- Team of Mechanical, Electronics, Civil and Software Engineers.



Our Solutions





Our Research Projects



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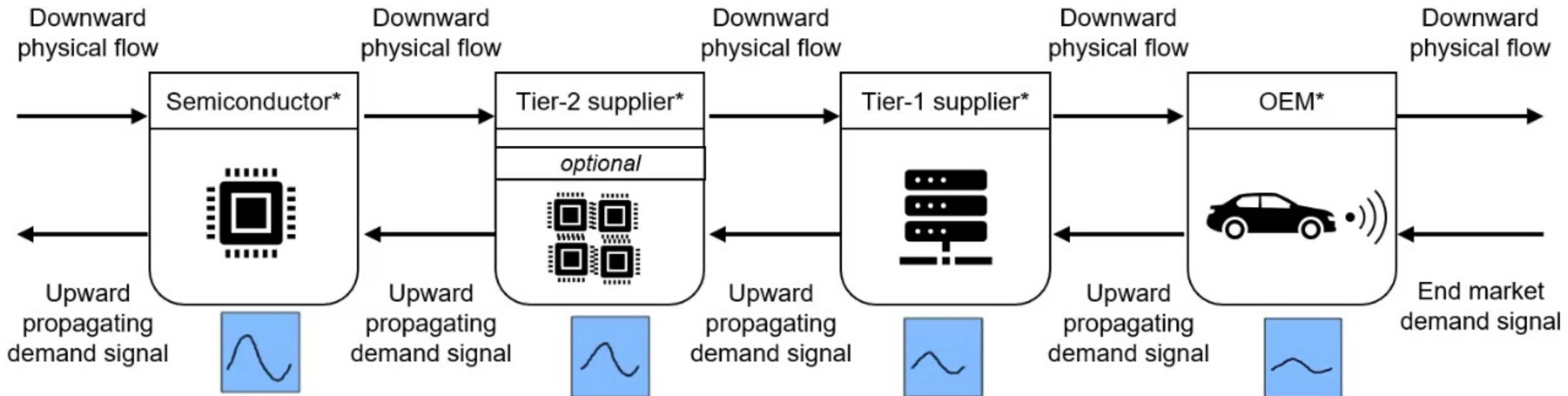
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Let's talk about
the topic.

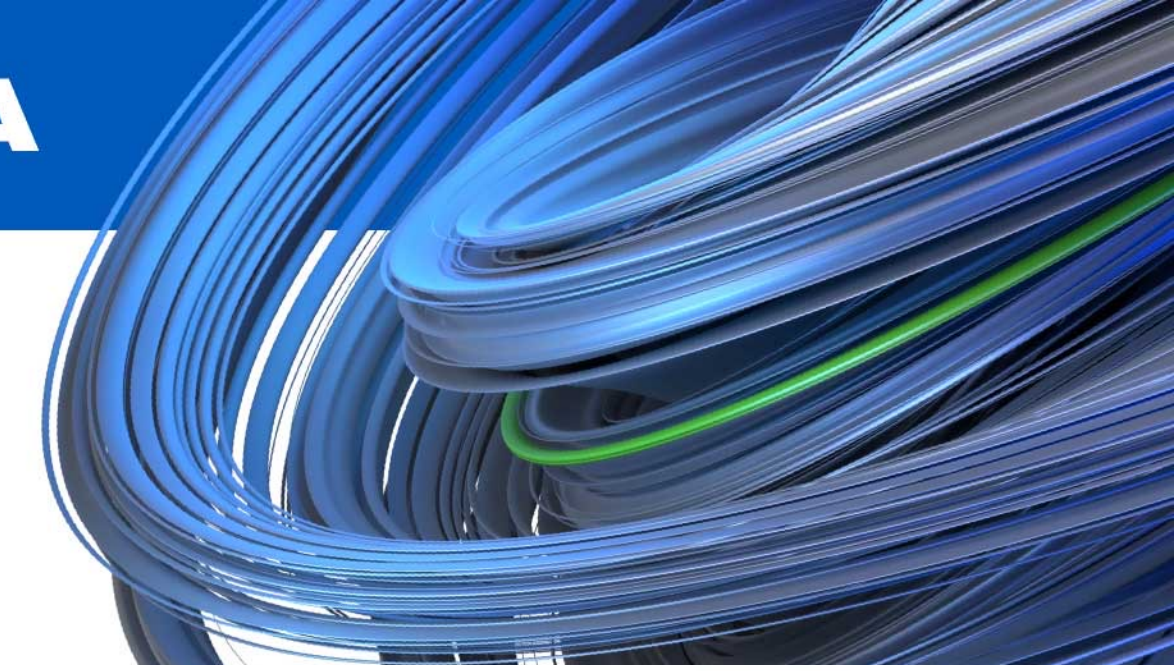
End-to-end supply chain setup considers OEMs, Tier-1 suppliers, and semiconductor manufacturers – on a globally aggregated level



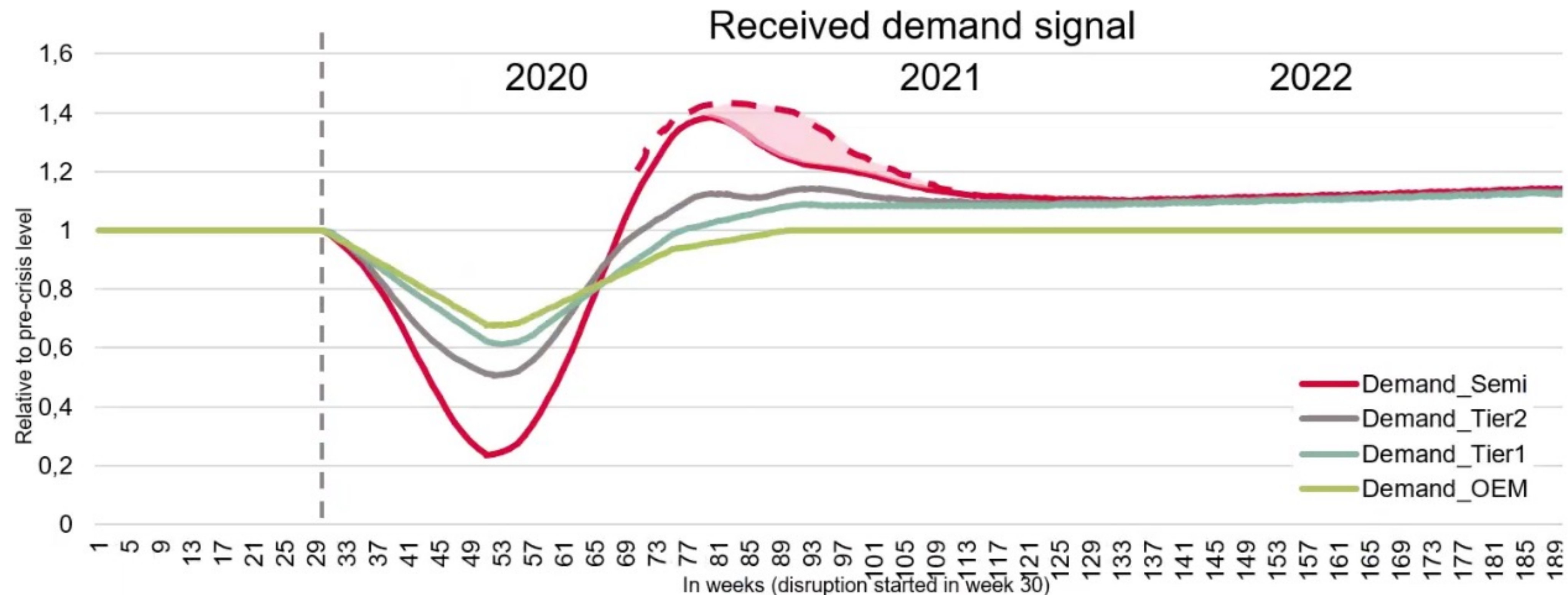
- Classical **Information flow** propagates upstream, while the **physical flow** of products propagates downstream the supply chain. The Bullwhip (amplification of demand signal fluctuations) is human-made
- Four echelons** are specifically modelled in the simulation. Each echelon handles the input with several control loops to forward the output to the next stage. Different echelons have different parameters for the same components**.
- The supply for the semiconductor echelon is guaranteed by the silicon supplier. For the scope of this model, supply to the semiconductor assumed to be infinite.

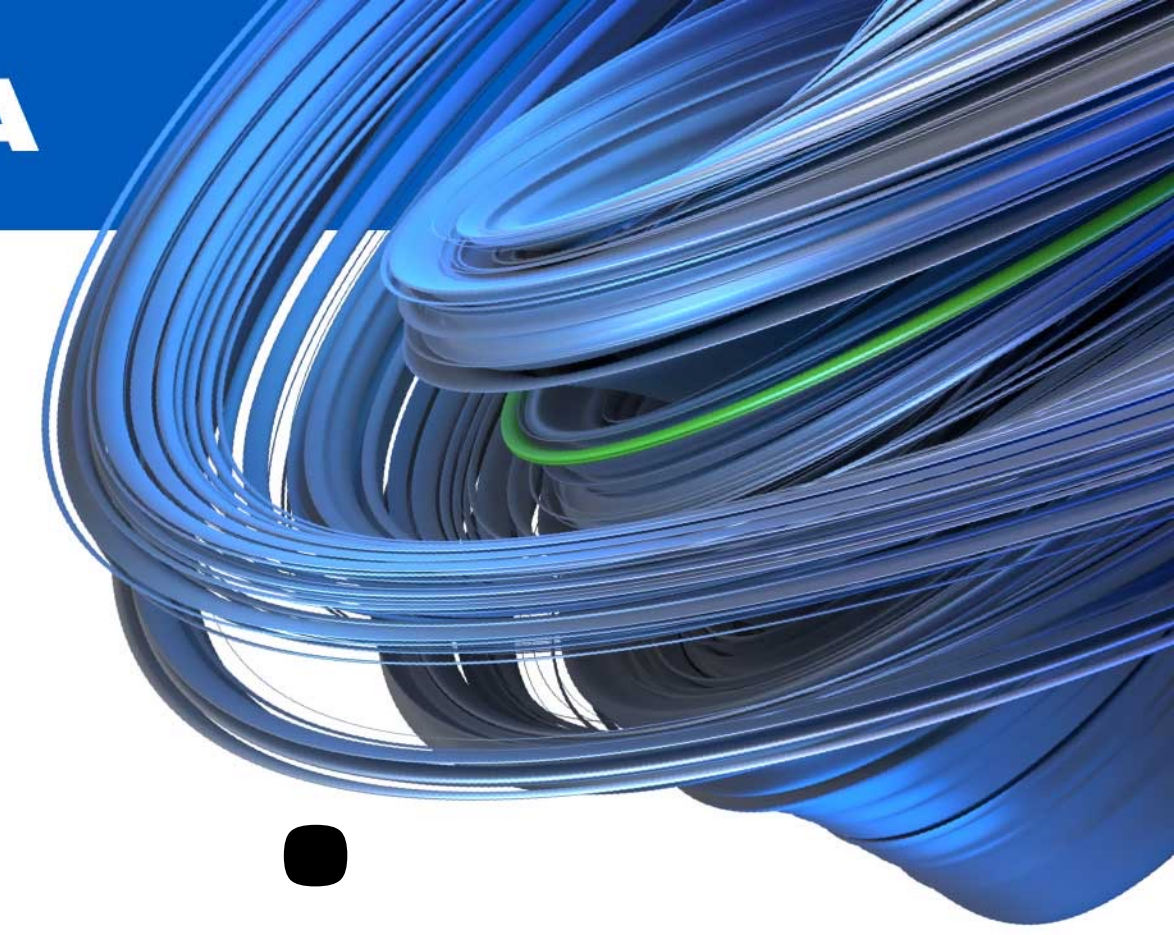
*behavior of each echelon is driven by system dynamics approach (s. next slide)

** including forecasting, capacity, work-in-process, stock, backlog and supply line management

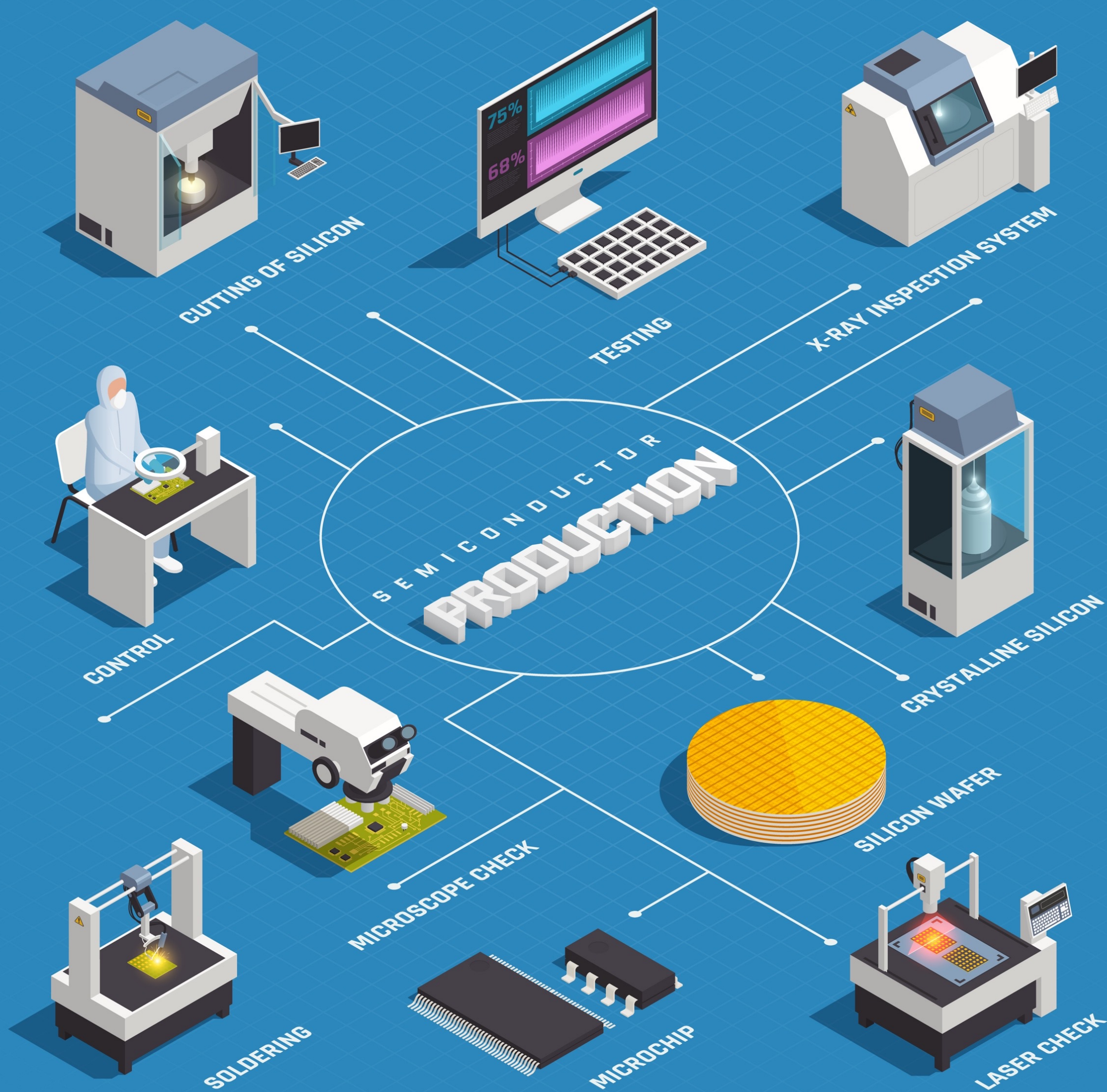


After the demand for semiconductors collapsed during the pandemic orders harshly recovered during end market demand recovery

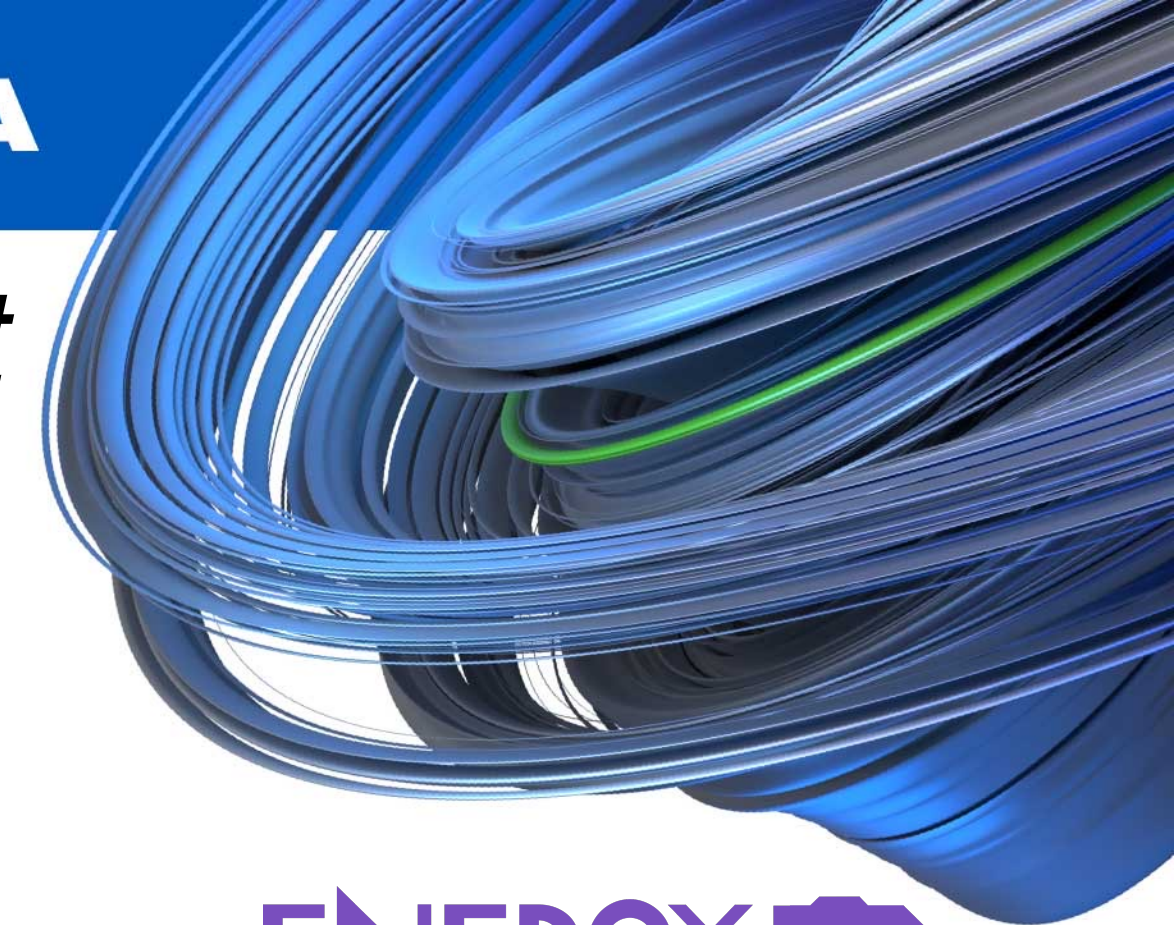




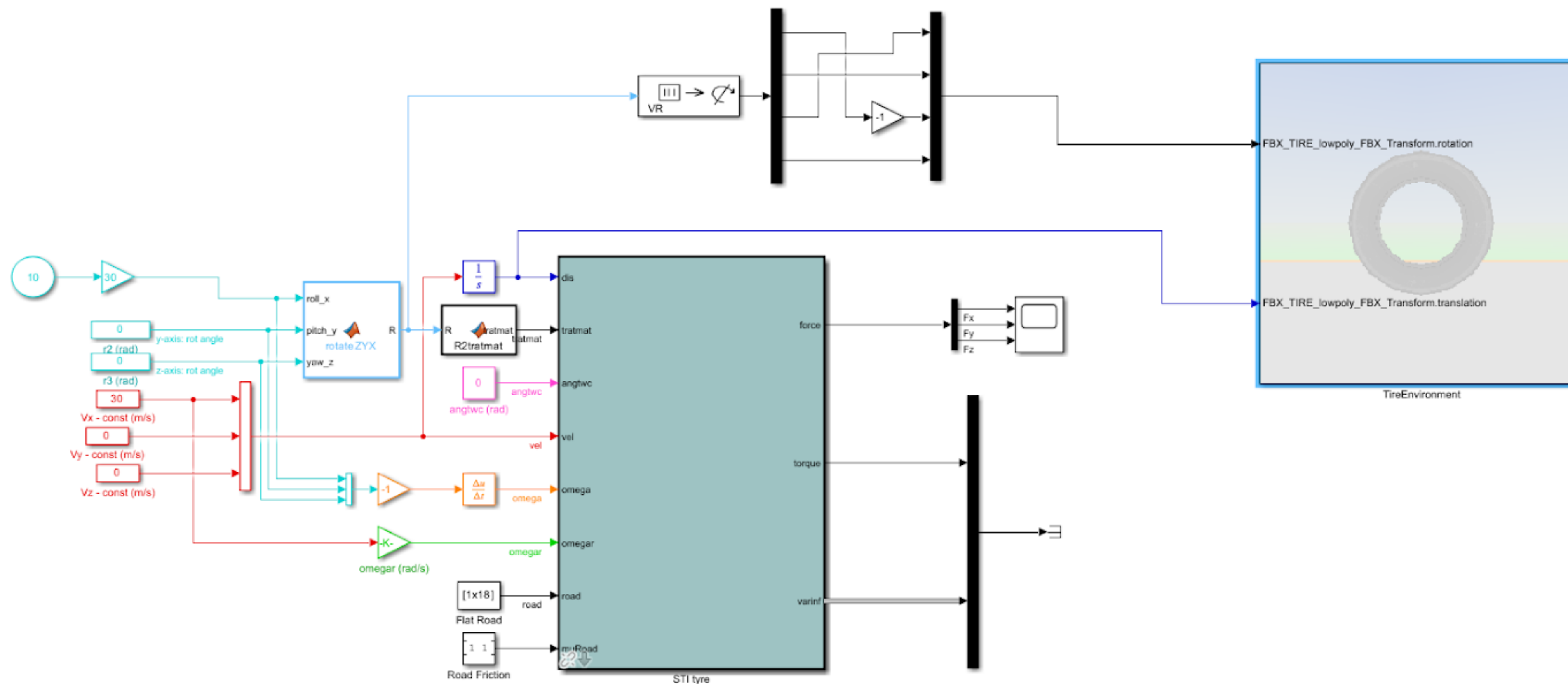
How digital twin
can solve this
issue ?

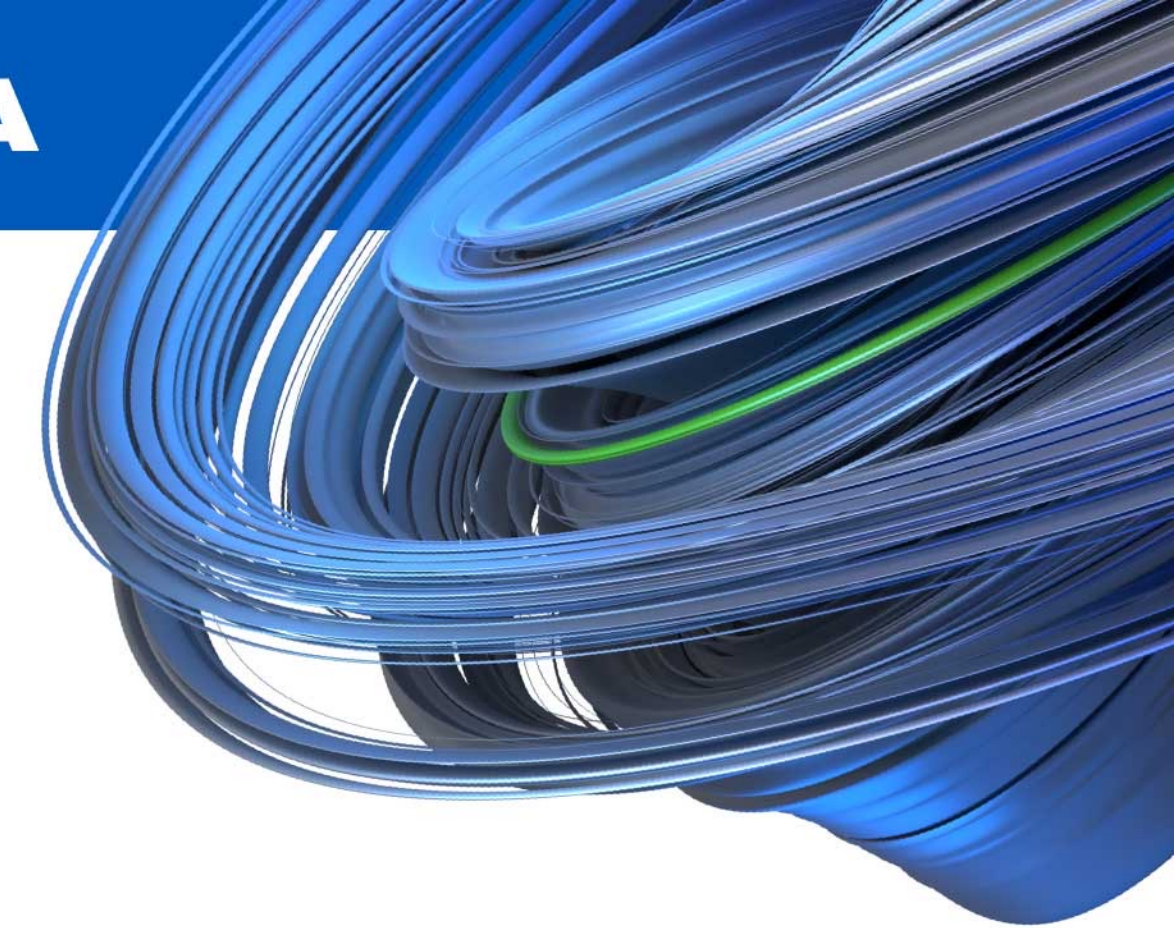
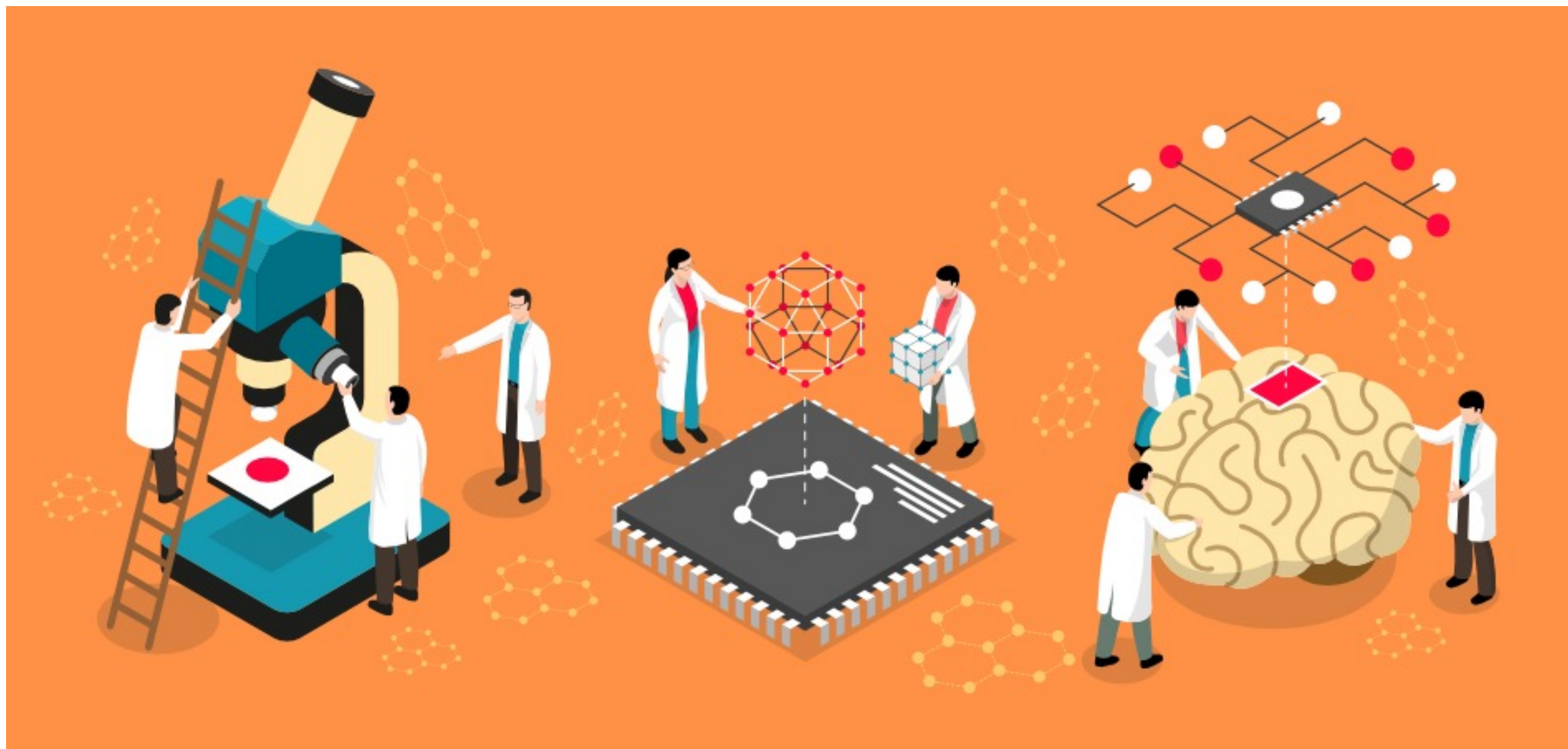


By adding digital twin technology along side with automation and AI we can speed up the chip design and manufacturing process which eventually help us much faster in bridging the gap between demand and supply.



Digital twin did help designers to develop a semiconductor without running into too many time-consuming roadblocks that disrupt production schedules. Streamlining the design process in this manner led to be very productive for an organisation especially when the items in question are in demand and in short supply.

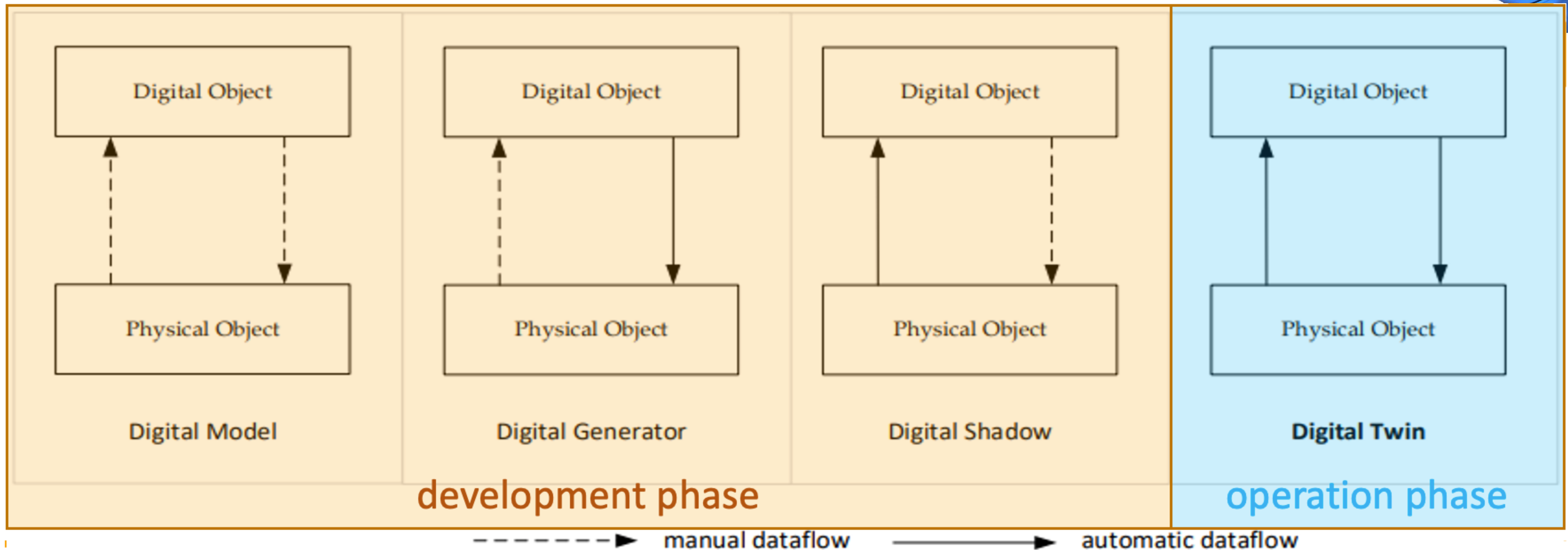




The lower reliance on physical prototyping cuts costs and accelerate decision-making. Within the online collaborative environment of digital twin software led designers to get feedback quickly to act on it. Digital twins can show a chip's estimated power and performance metrics, helping designers understand what's working well and where improvements should occur.

Digital Twin ?

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