



Industry 4.0

Round Table Discussion

Moderated by

Gerrit Zaayman

VP of Scheduling and Digital Transformation @ Simio LLC

Agenda

- ▶ Introduction
- ▶ Panel Discussion
- ▶ Closing Remarks

Introductions

1. Jeff Smith – Professor at Auburn University

2. Sebastian Urbina – Director of Supply Chain Innovation at Barkawi (a Genpact company)

3. Manuel Remerie – Principal Expert Process Simulation at Bayer AG

4. Dennis Pedden – Founder & CEO of Simio, LLC

Jeff has taught simulation at the graduate and undergraduate levels and consulted on simulation-related project for 30 years. In addition to his academic positions, he is also a founding partner at Conflexion LLC and serves on the Board of Directors of the Winter Simulation Conference. Jeff is co-author of the textbooks *Simio* and *Simulation: Modeling, Analysis, Applications*, a variety of industries, CPG, automotive, retail, high-tech, pharmaceutical, rental, life sciences, semiconductor, industrial goods) focusing on solving real-world supply chain problems with a strong background in enterprise-aided expertise in designing and implementing state-of-the-art technology to facilitate supply chain and a senior member of the Institute for Operations Research and Management. Dennis Pedden was the founder and CEO of Systems Modeling Corporation, a provider of optimization services for aligning strategy and operations in the area of modeling and simulation covering chemical process development, product life cycle management, the optimization of manufacturing processes and facilities, as well as production scheduling. He is also the coordinator of an ELI-funded research project (3 years, 15 partners) on integrated process control and sensing for flexible modular plants and now also responsible for shaping the modeling and simulation strategy at Bayer AG. Manuel also serves on the Simio Industry 4.0 Customer Advisory Board.

Typical Customer Needs

- ▶ What do our Customers and Prospects say:
 - Process/Supply Chain Design and Analysis
 - Industry 4.0 Initiatives
 - Digital Transformation Projects
 - The “Smart Factory” Vision
 - Process Digital Twin
 - Supply Chain Digital Twin
 - Integrated Scheduling
 - Automated Scheduling

Simio's vision is to become the leading process **Digital Twin** solution for improving the **design** and **operation** of complex systems

Industry 4.0 – Forbes Definition

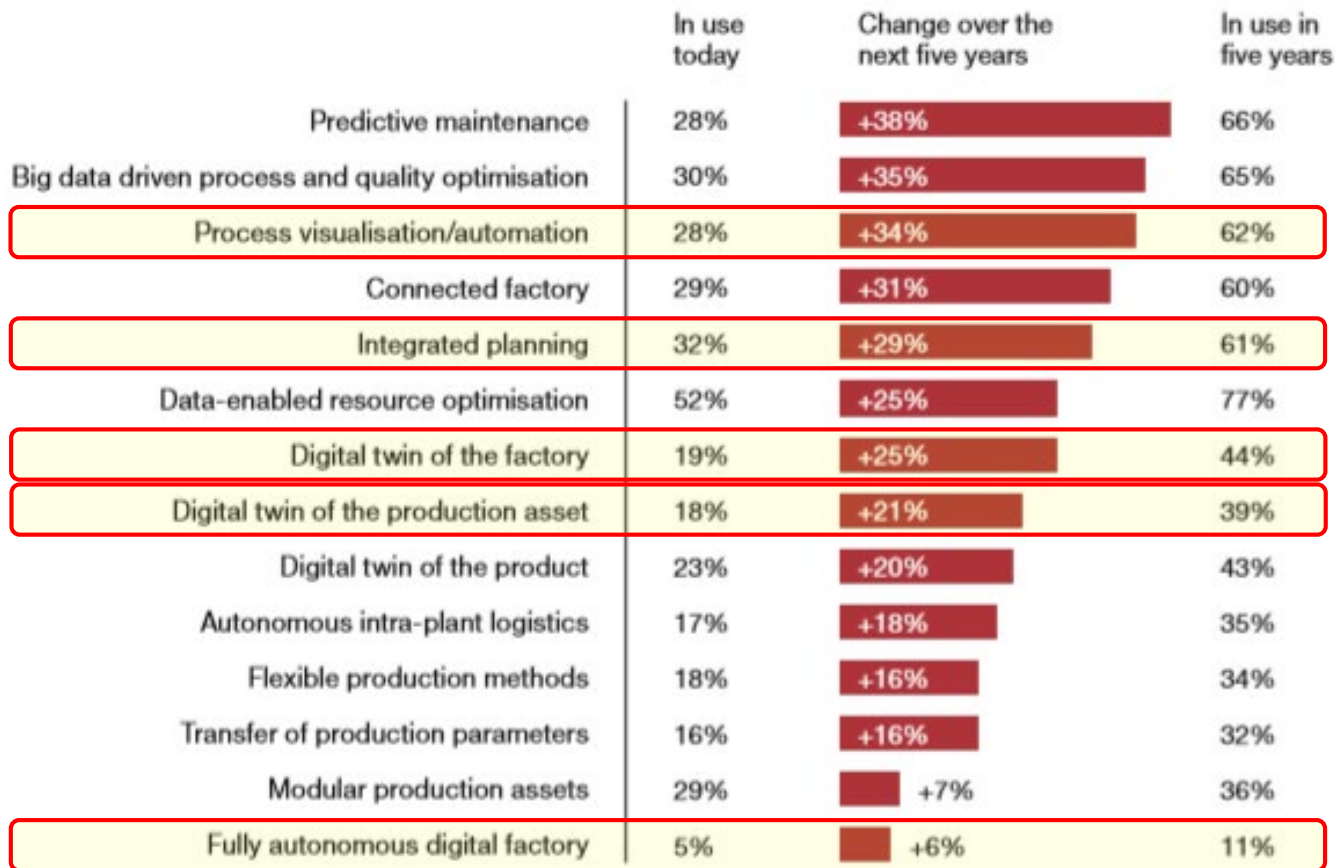
Industry 4.0 optimizes the computerization of Industry 3.0

When computers were introduced in Industry 3.0, it was disruptive thanks to the addition of an entirely new technology. Now, and into the future as Industry 4.0 unfolds, computers are connected and communicate with one another to ultimately make decisions ***without human involvement.***

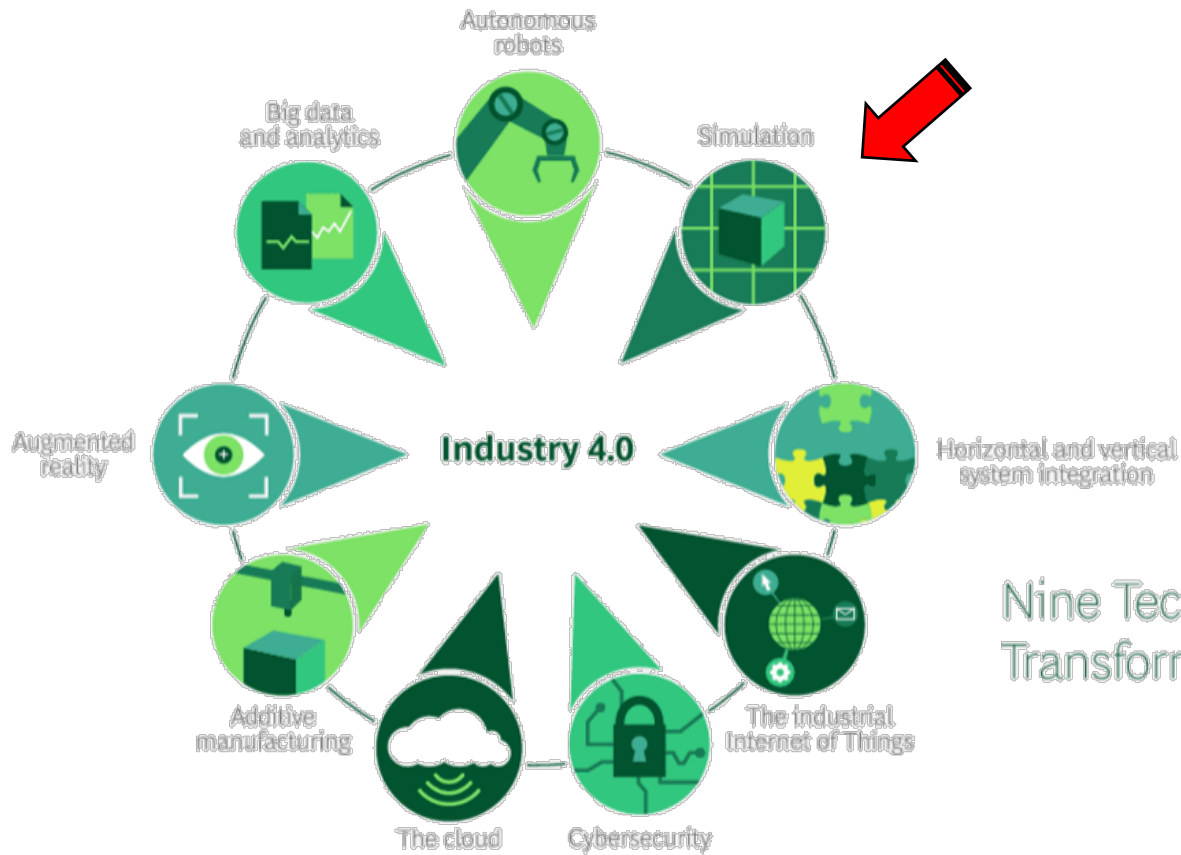
A combination of cyber-physical systems, the Internet of Things and the Internet of Systems make Industry 4.0 possible and the smart factory a reality. As a result of the support of smart machines that keep getting smarter as they get access to more data, our factories will become more efficient and productive and less wasteful. Ultimately, it's the network of these machines that are digitally connected with one another and create and share information that results in the true power of Industry 4.0.



Industry 4.0 – PWC Research



Industry 4.0 – BCG



Nine Technologies Are Transforming Industrial Production

Housekeeping

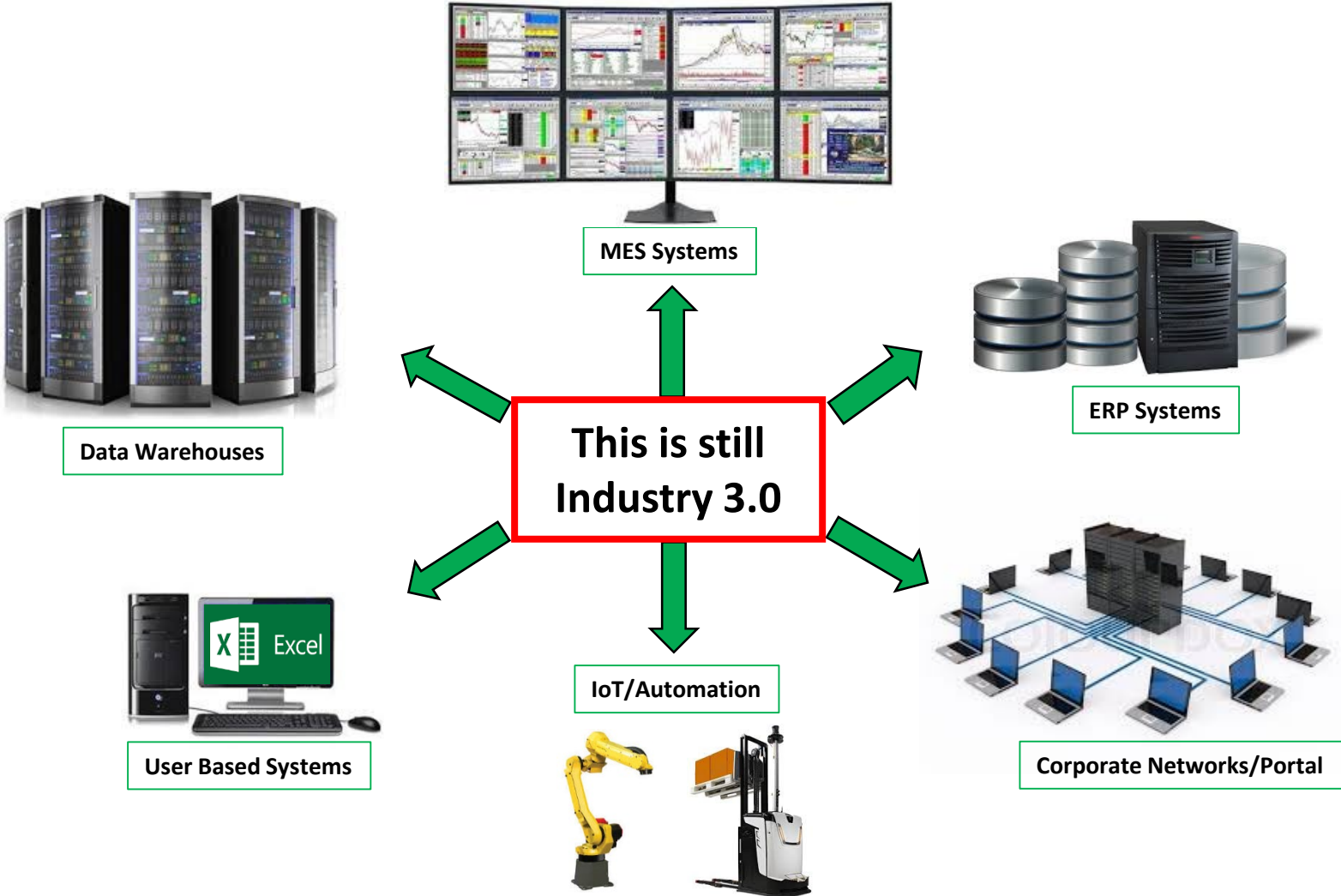
▶ Sequence of Events

- Starter Questions - Moderator
- Audience Questions
- Closing Questions – Moderator
- Closing Remarks

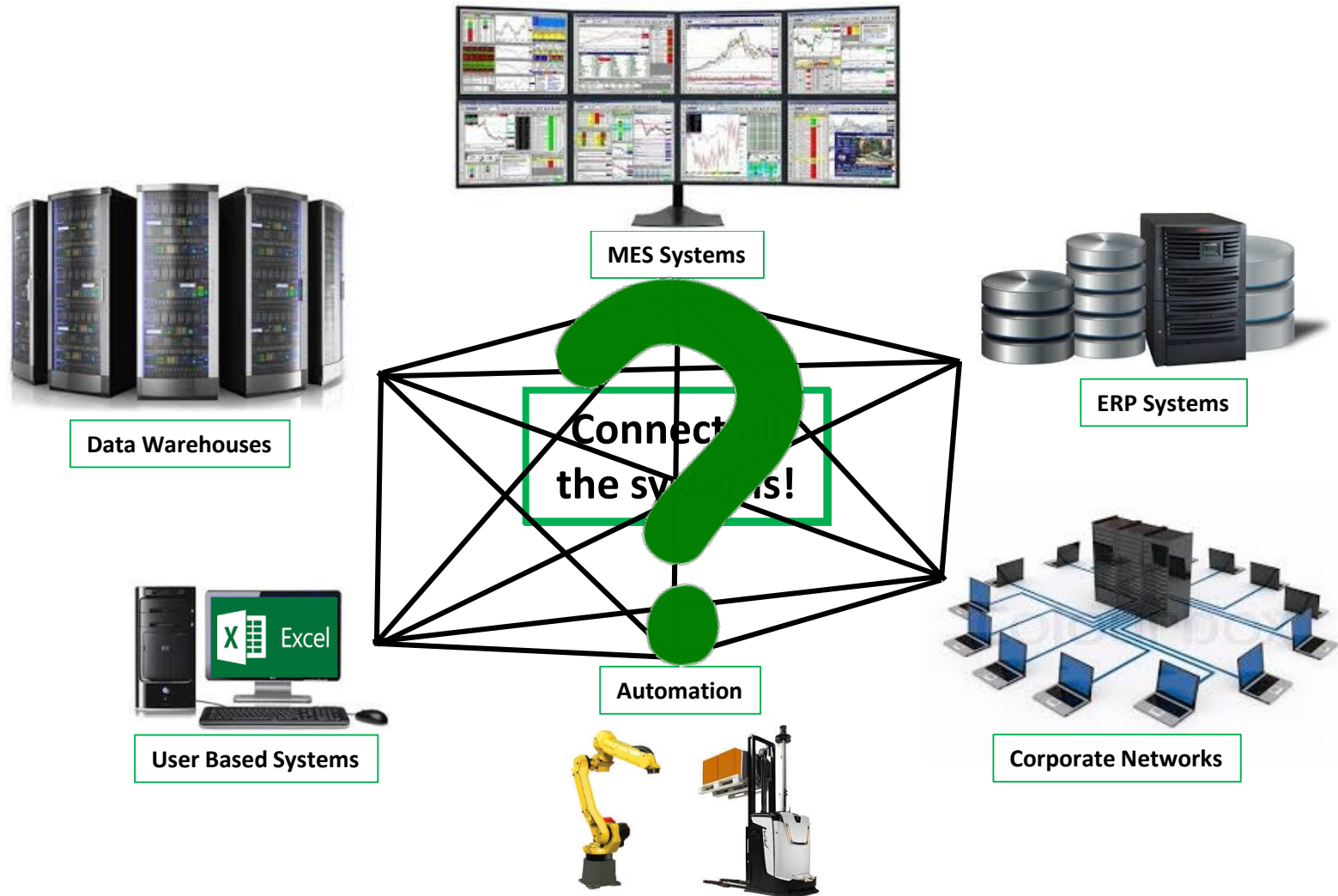
▶ Question guidelines

- Please keep questions short and to the point
- Moderator questions will be to specific panel member
- Audience questions can be taken by any panel member
- Please use the microphone when asking a question

Reality Today



How Do We Enable Industry 4.0? (The Smart Factory)



Industry 3.0

Time Now

Industry 4.0

What is our current OEE?

What is the current WIP?

What is our resource availability?

MES

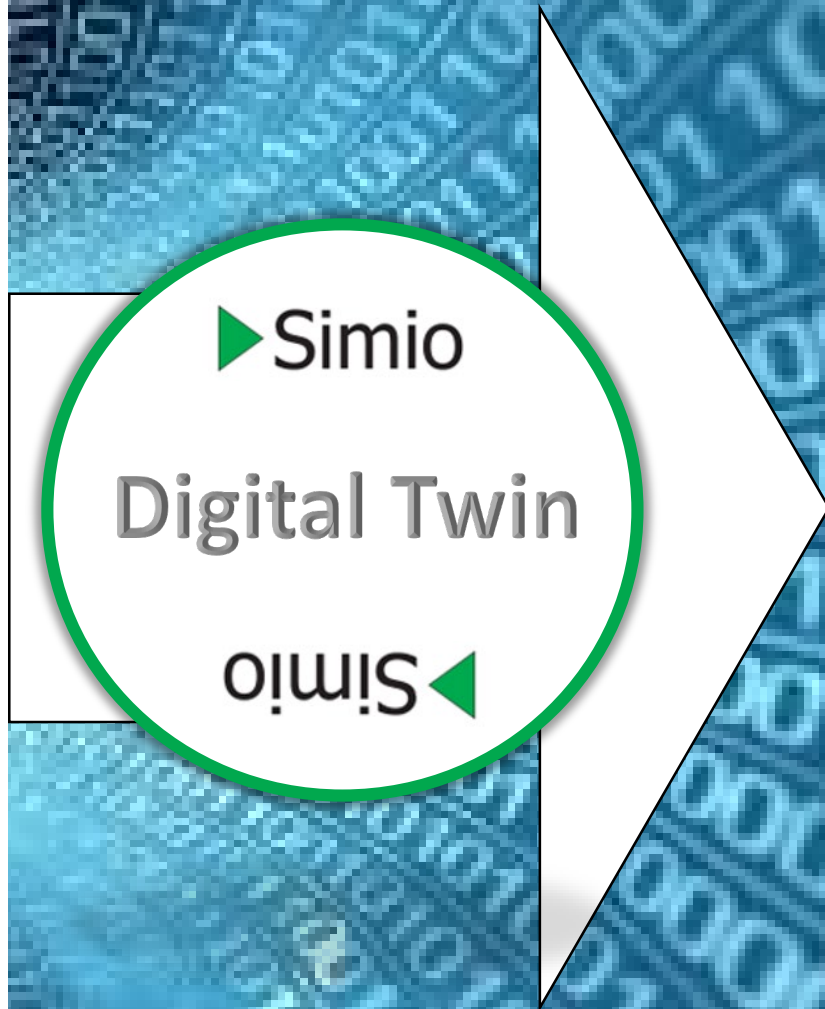
Current & Historical Data

ERP

Did we make our targets?

What is our current demand?

What is our current service level?



▶ Simio

Digital Twin

Simio ◀

Thank you!

