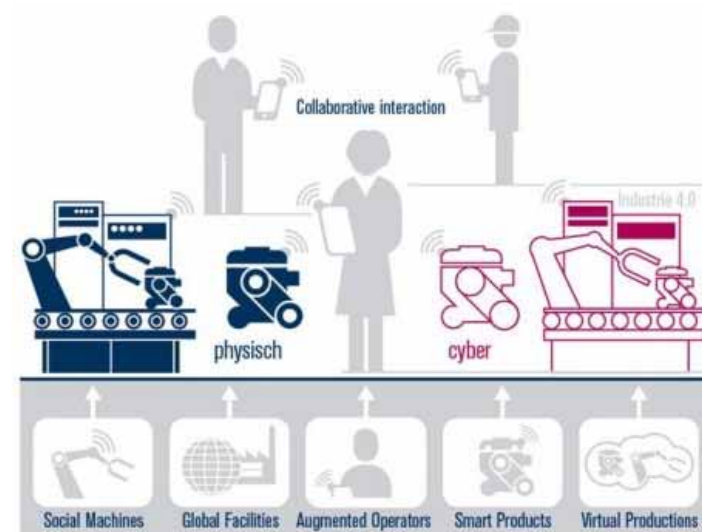


# Global Industrial Revolutions

- The first Industrial Revolution was characterized by steam and water.
- The second Industrial Revolution was the introduction of electricity to mass produce things.
- The third is characterized by the internet, communication technologies, and the digitalization of everything.
- The fourth Industrial Revolution is the concept of blurring the real world with the technological world.

# Industry 4.0: The new industrial revolution

- German initiative
- Identified 9 pillars of technological advancement
  - Additive manufacturing
  - Augmented reality
  - Big data and analytics
  - Autonomous robot
  - Simulation
  - Horizontal and vertical system integration
  - The Industrial Internet of Things
  - Cybersecurity
  - The cloud



Collaborative interactions in a Smart Factory  
Source: Trumpf / Forschungsunion Wirtschaft & Wissenschaft

# Disruptive Technologies in Manufacturing

- The Internet of Things
  - Dr. Roberto Gallardo - Associate Extension Professor in the Extension Center for Technology Outreach, Mississippi State University
- Big Data and Data Science
  - Dr. Roger King - Executive Director Institute for Computational Research in Engineering and Science (ICRES), Mississippi State University
- Laser Based Additive Manufacturing
  - Dr. Scott Thompson – Assistant Professor Department of Mechanical Engineering, Mississippi State University