

# Shipyard of the Future

SSI Shipbuilding Conference Keynote



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Senior Director, Construction Industry Strategy

# What We Will Cover Today

1

## State Of The Industry

- Shipbuilding Industry Trends
  - Technology Trends
  - Customer Dynamics
- 

2

## Autodesk In Shipbuilding

- Autodesk Strategy
  - Product Portfolio Overview
-



We are the  
**AutoCAD**  
company

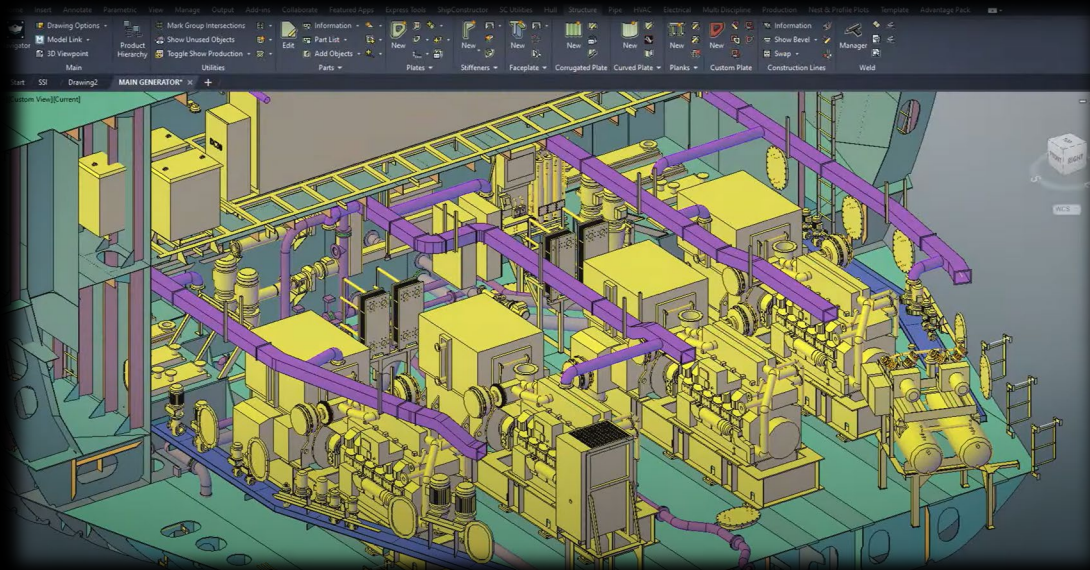


Image courtesy of SSI



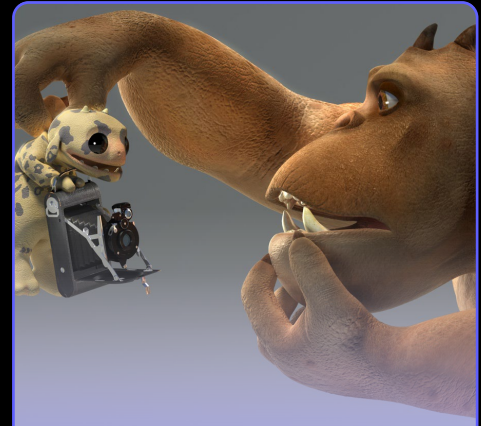
# AEC

Architecture, Engineering &  
Construction



# D&M

Design &  
Manufacturing



# M&E

Media &  
Entertainment



Founded  
1982



Headquarters  
San Francisco, CA



Employees (2024)  
14,000+ worldwide



**\$5B+**  
Total revenue  
(2023)



**\$50B+**  
Market Cap

 **AUTODESK**

**+**

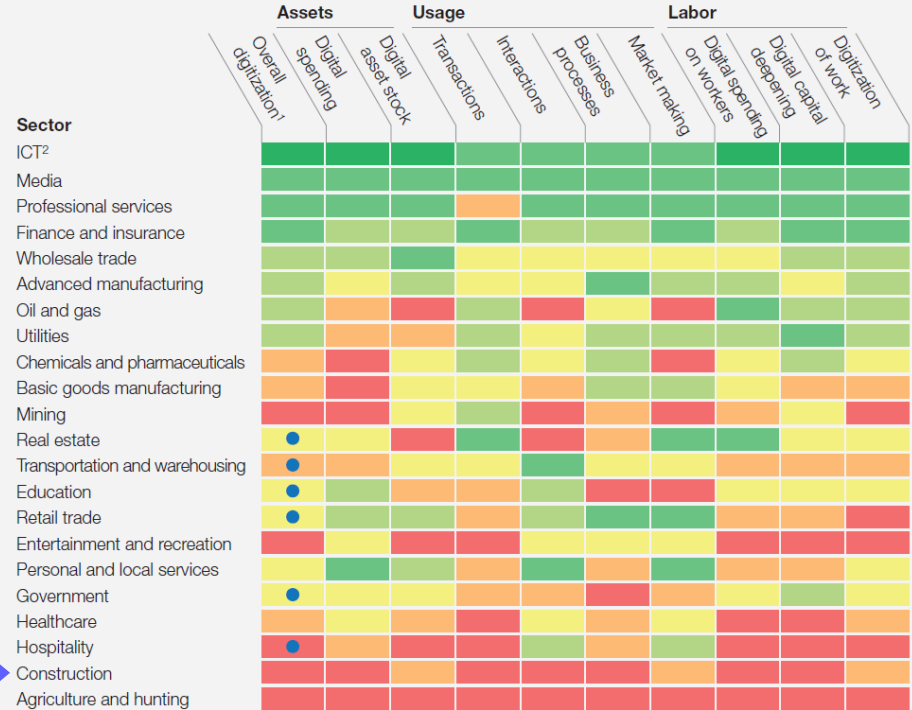


**Partners since the beginning**

This shouldn't be!

McKinsey Global Institute industry digitization index;  
2015 or latest available data

Relatively low digitization Relatively high digitization  
● Digital leaders within relatively undigitized sectors

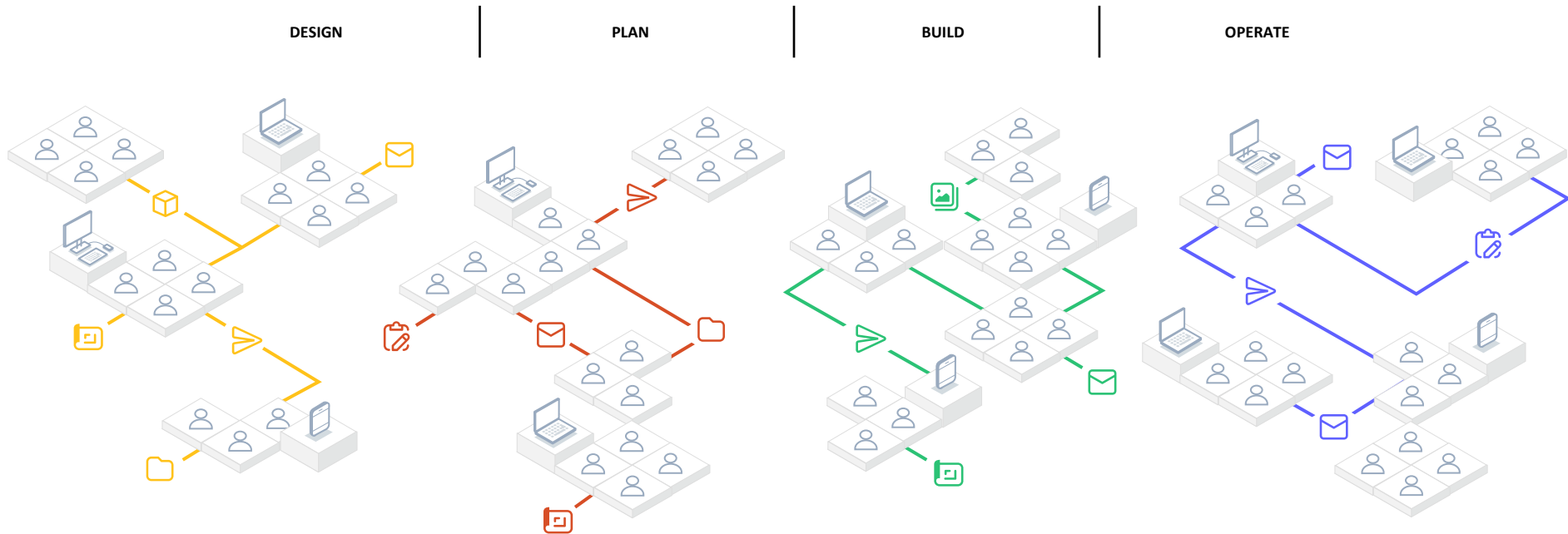


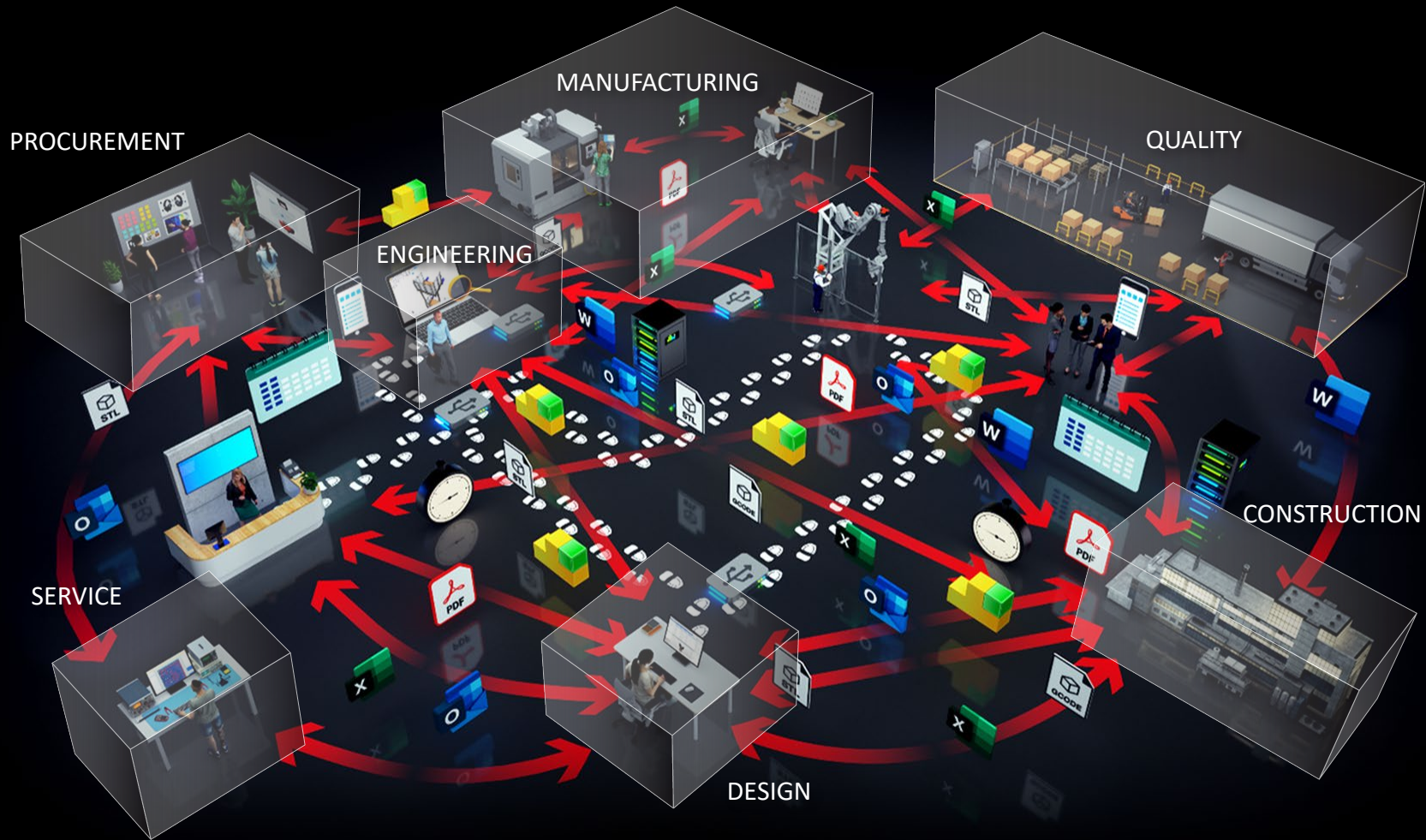
<sup>1</sup>Based on a set of metrics to assess digitization of assets (8 metrics), usage (11 metrics), and labor (8 metrics).

<sup>2</sup>Information and communications technology.

Source: AppBrain; Bluewolf; Computer Economics; eMarketer; Gartner; IDC Research; LiveChat; US Bureau of Economic Analysis; US Bureau of Labor Statistics; US Census Bureau; McKinsey Global Institute analysis

# Shipbuilding is Collaborative, Yet Fragmented








Supply Chain  
Disruption



Talent Shortages



Macroeconomic  
& Geopolitical  
Challenges

# Trends Impacting Shipyards



Advanced  
Manufacturing



Environmental  
Regulations



Modernization of  
Digital Systems

# The Importance Of Risk Management

**80%**

of projects are  
delivered over budget

*Source: McKinsey*

**20%**

longer than scheduled  
to complete projects

*Source: McKinsey*

## TYPES OF RISK



**PLANNING**



**FINANCIALS**



**LABOR**



**SAFETY**



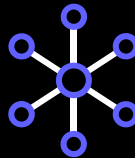
**LEGAL COMPLIANCE**



**SCHEDULE**



**Digitize**



**Integrate**



**Optimize**

# Shipyards Solutions



# Five Focused Interventions For Increasing Output



Rebuild the workforce from the frontline through middle management to the next generation of leaders



Reenergize the existing shipyard footprint to bolster near-term capacity



Modernize digital systems and tools, focusing first on low-hanging, high-ROI opportunities



Align the organization and culture around performance to create transparency and promote accountability



Engage in strategic economic development to support long-term sustainability of the industry, the workforce, and the business

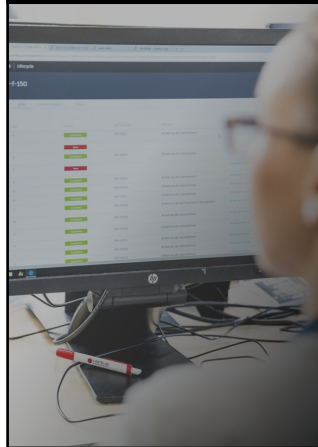
# Modern Shipbuilding Technology Tools

## The Four Key Pillars – The Four D's

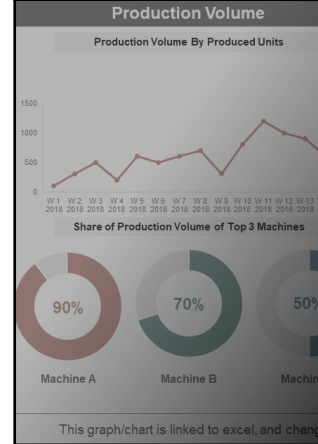
### Digital Engineering



### Digital Supplier Management



### Digital Performance Management



### Digital Value Stream Management



# Digitized Shipyard | Stages

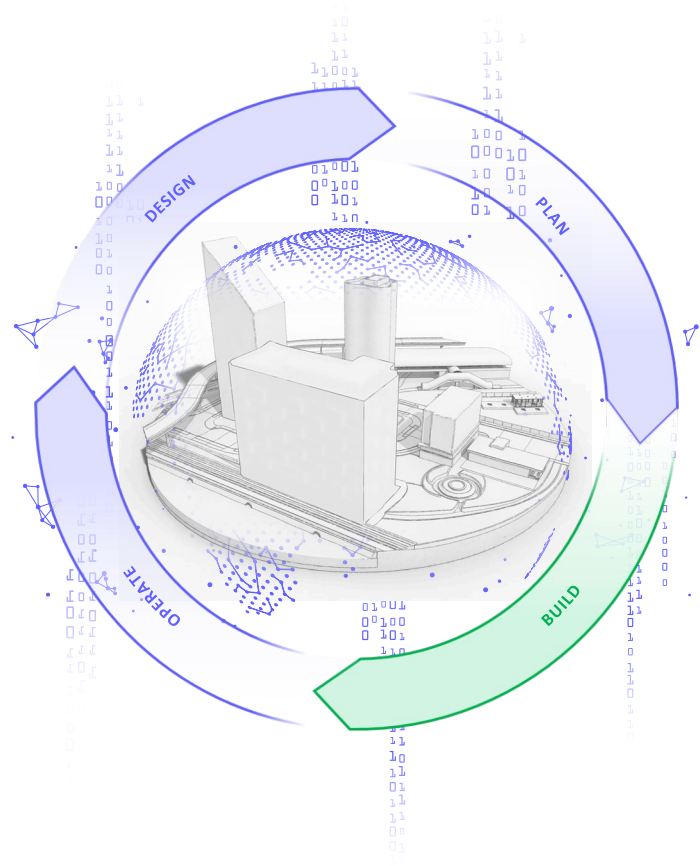


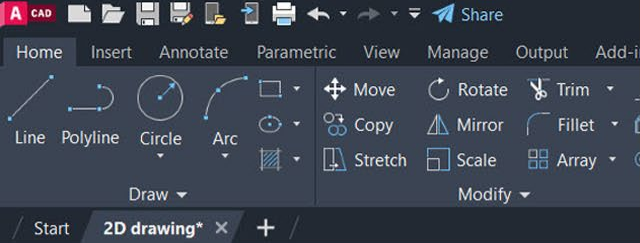
DESIGN

BUILD

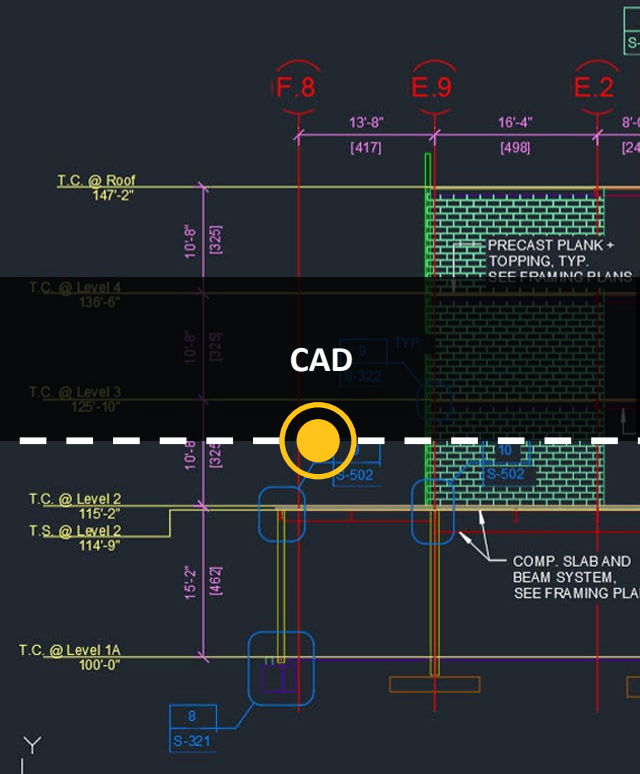
OPERATE

**Autodesk's vision has  
always been and  
still is to support  
a full asset lifecycle  
management process....**

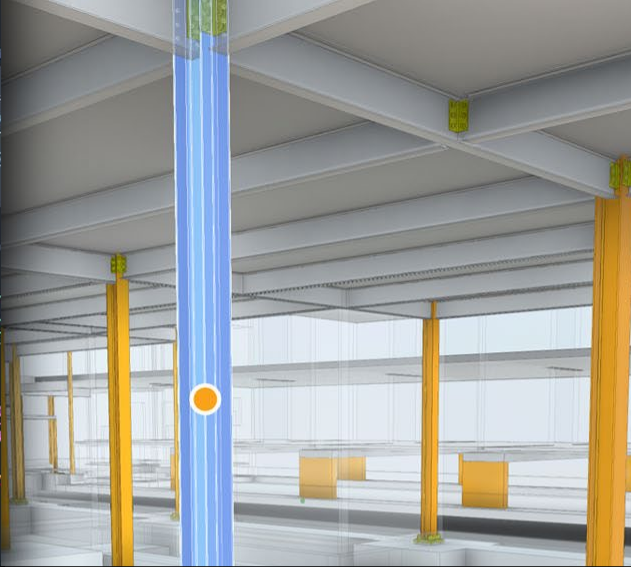




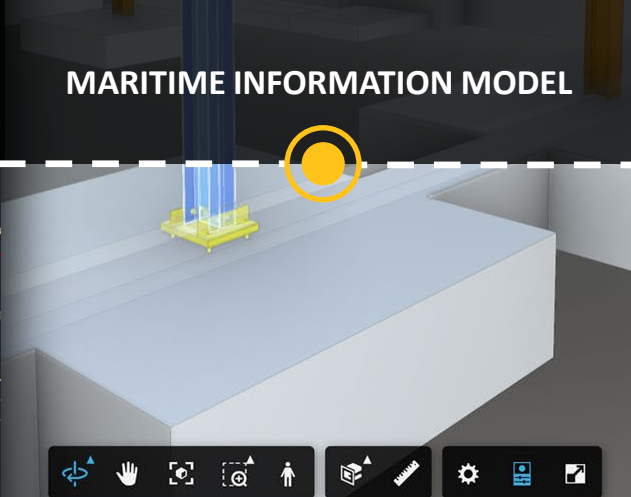
[ - ] [Top] [2D Wireframe]



CAD



MARITIME INFORMATION MODEL



CONNECTED CONSTRUCTION



# Autodesk Platform Delivers Better Outcomes



**Connected  
Data**



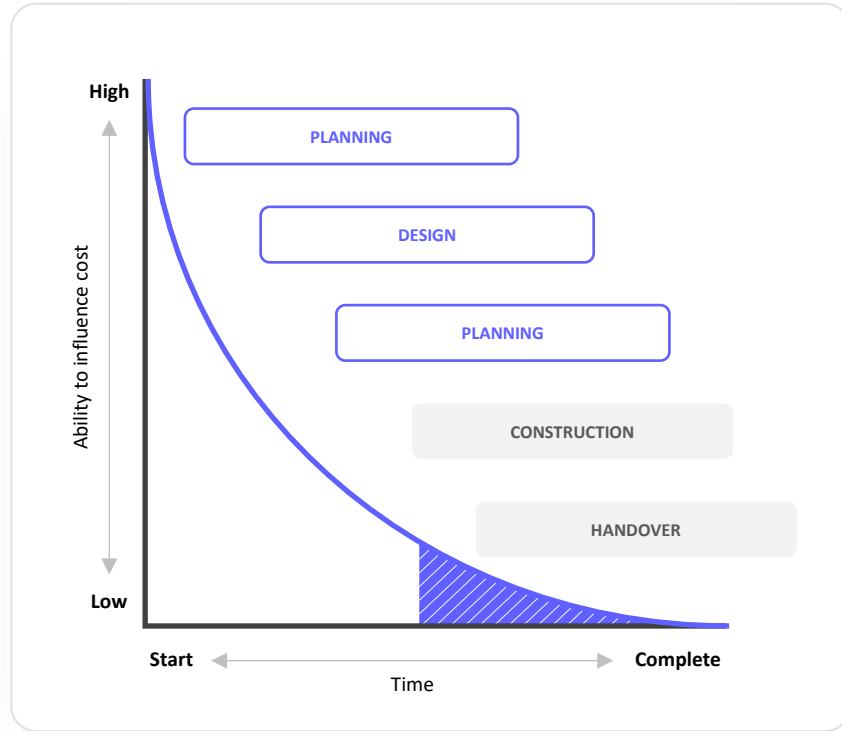
**Connected  
Teams**



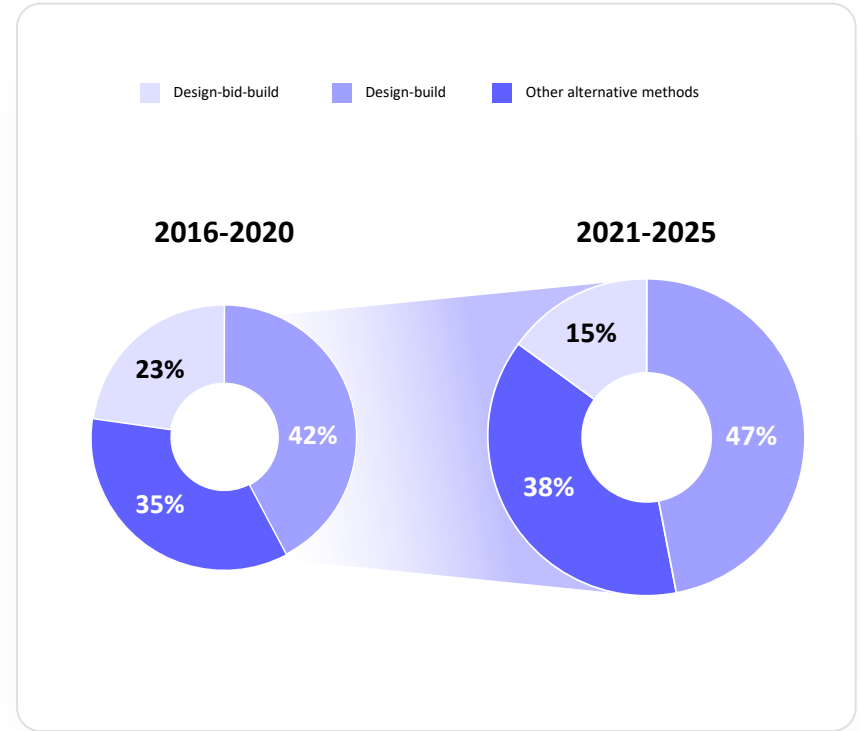
**Connected  
Workflows**

**TRUSTED PLATFORM**

# Greatest Project Impact Is In Planning



Source: FMI Design-Build Utilization Update, September 2021



\*Other alternative methods include CMAR, EPC, IPD and CM/GC

# Autodesk Strategy

Empowering our customers through use of technology across each phase of their business activity

## CONNECTED CONSTRUCTION



**Design**

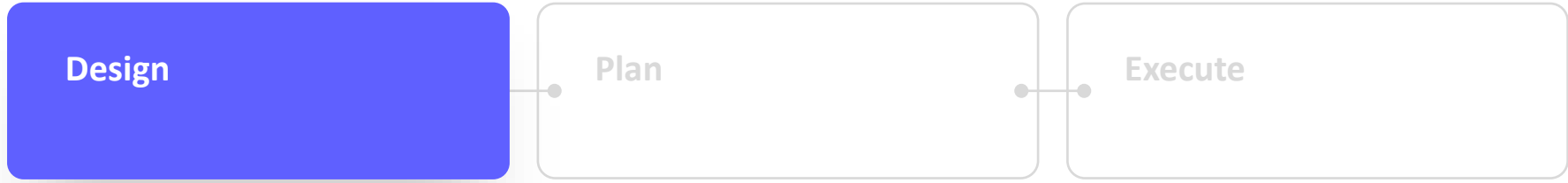


**Plan**



**Execute**

Supported by a growing ecosystem of third-party technology partners



### Pursuit

- Generative Design
- Conceptual Estimating
- Bid Schedule
- Value Engineering



### Bidding/Estimating

- Bid Solicitation
- Scope Comparison
- Quantity Takeoff
- Contractual Estimating



### Subcontractor Prequalification

- Financial / Insurance
- Capacity Checks
- Past Performance
- Relevant Project Experience



### Design Coordination

- Design Collaboration
- Constructability Review
- Spatial Coordination
- Sustainability Review
- Value Engineering



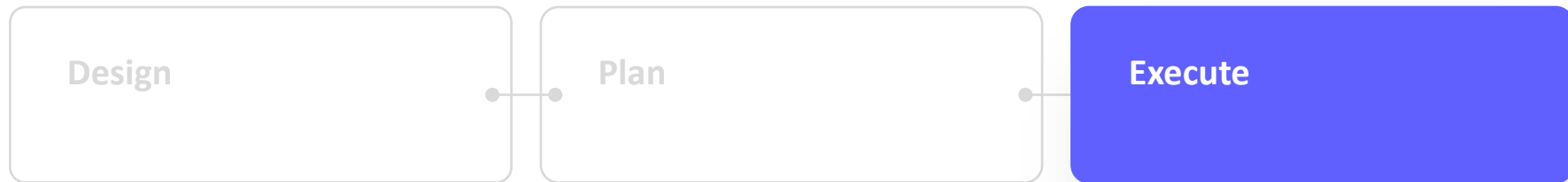
### Trade Coordination

- Clash Detection
- Constructability Review
- O&M Review
- Scope Review



### Visual Planning

- Site Logistics
- Sequencing
- Production Planning



### Contract Administration

- Model Management
- Document Control (Drawings & Specs)
- Plans and Specifications
- RFI's/Submittals
- QA/QC Checklists
- Commissioning
- Subcontract Contract Management
- Safety Management



### Cost Control

- Tracking Budgets & Costs
- Change Management
- Forecasting
- Production Tracking
- Pay Applications



### Schedule Control

- Progress Tracking
- Pull Planning
- Schedule Updates/Impacts

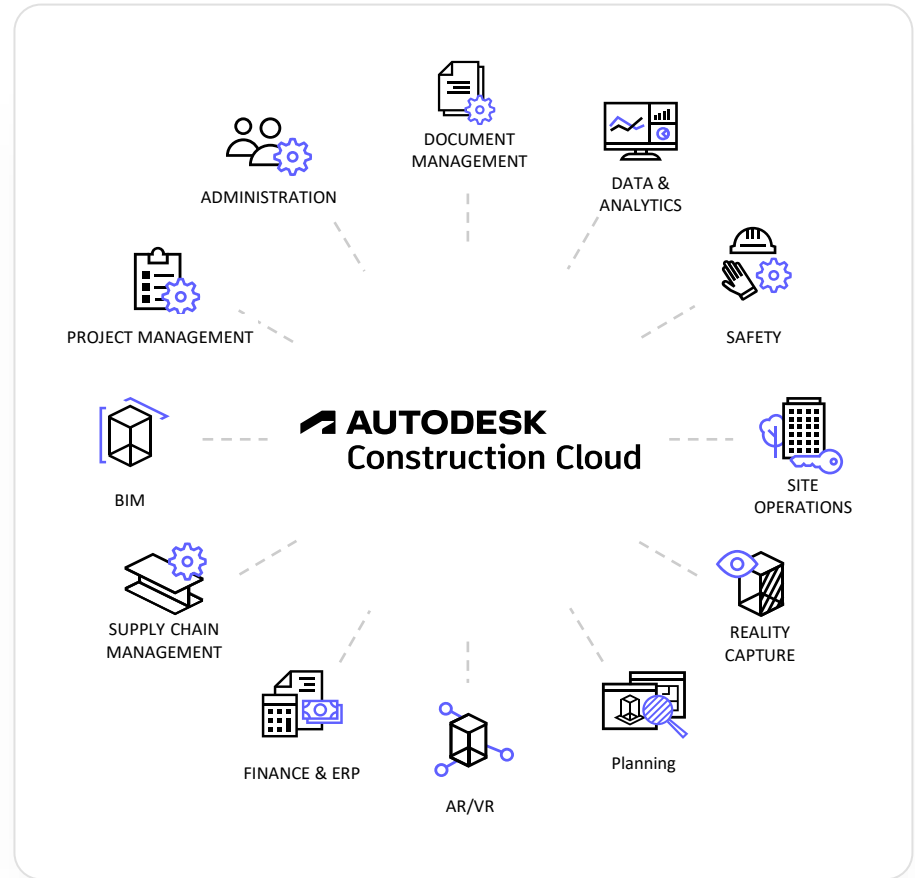


### Handover

- Final Closeout
- Punchlist
- Final Inspections
- Warranty Management

# Augmented by a Growing and Robust Ecosystem

Best of breed tech integrates with Autodesk Construction Cloud



# Manufacturing Simulation

Understand interactions between systems and processes

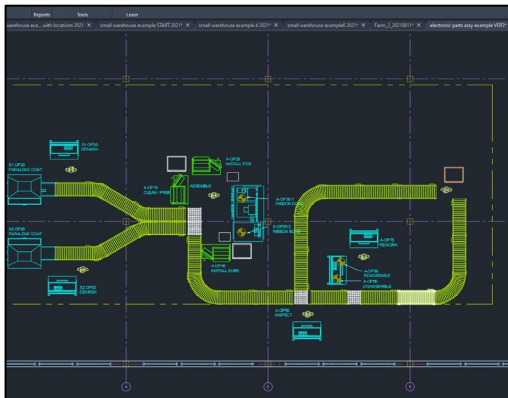
**Plan for variability** in  
processes and  
production

**Mitigate risks** involved  
with trying new things  
without visibility into  
outcome

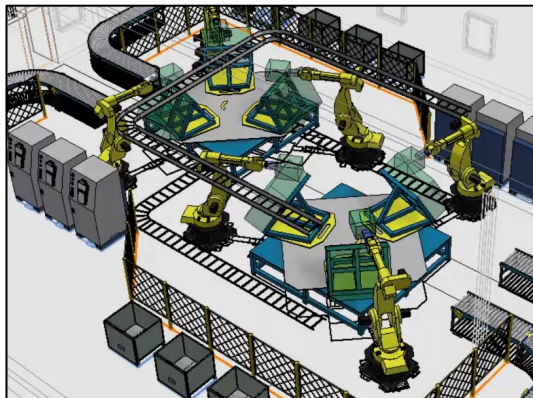
**Decrease costs** due to  
process inefficiency

# Manufacturing Simulation

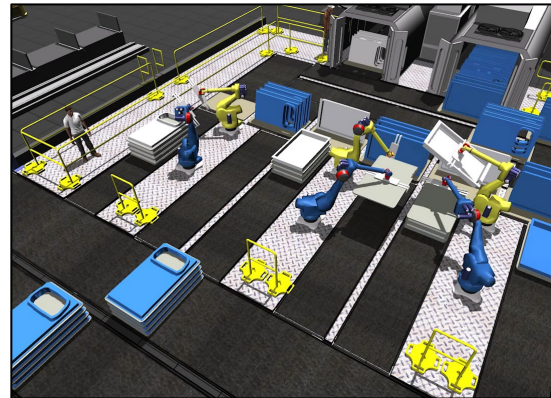
Uses models you already have



**2D Layout**



**3D Layout**



**3D Simulation**

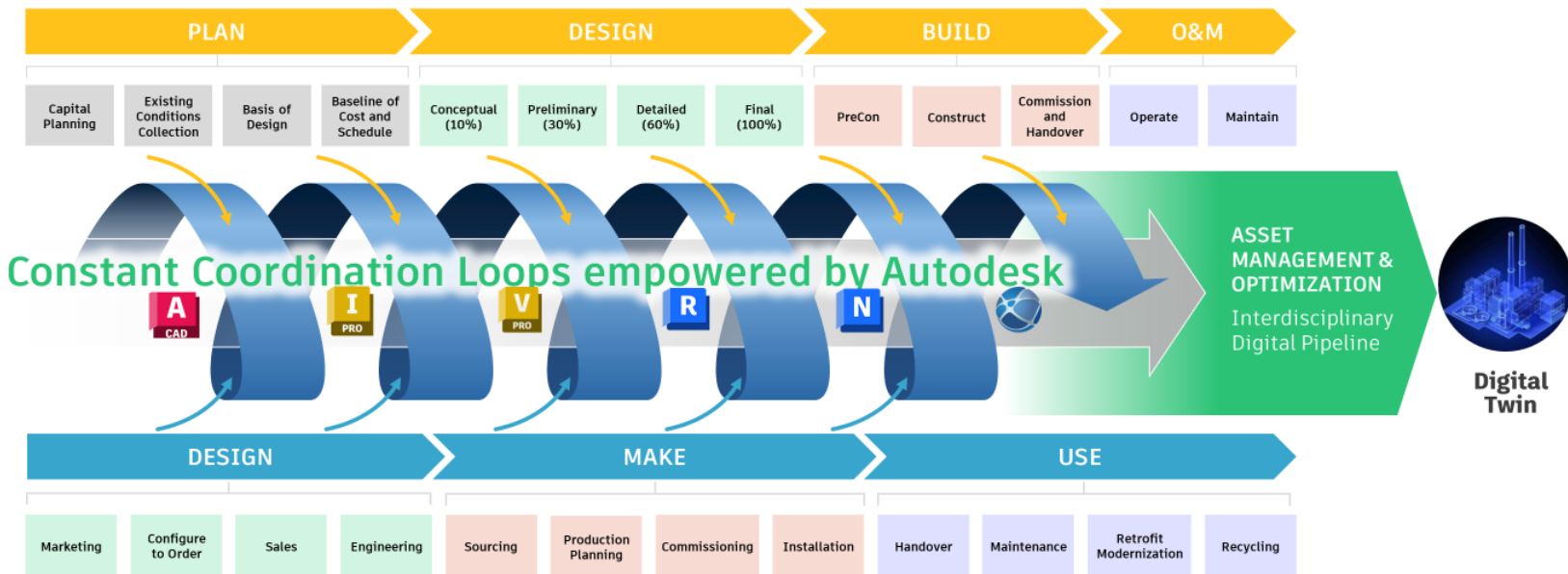
# Autodesk Connected Workflows



AEC

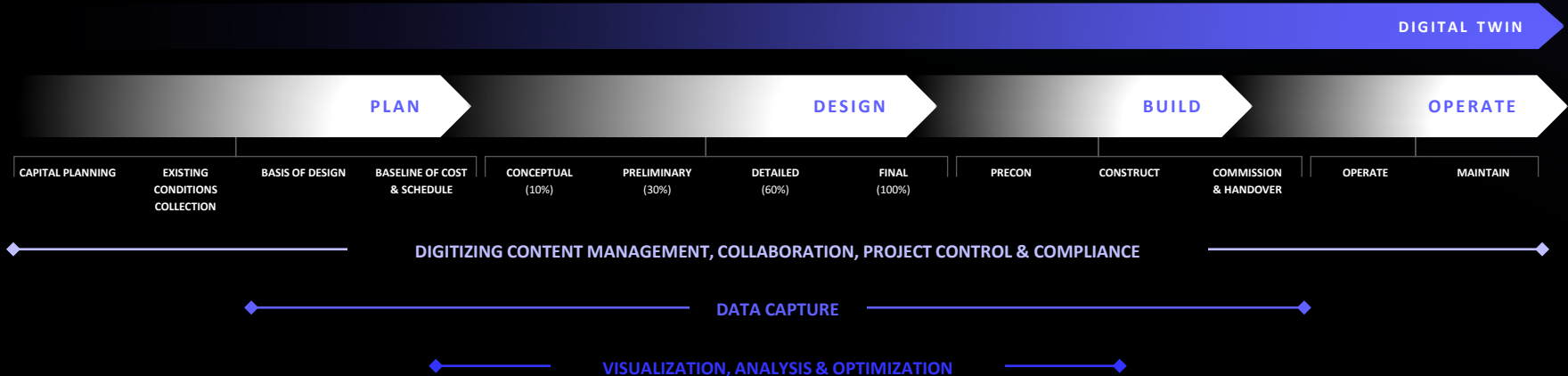
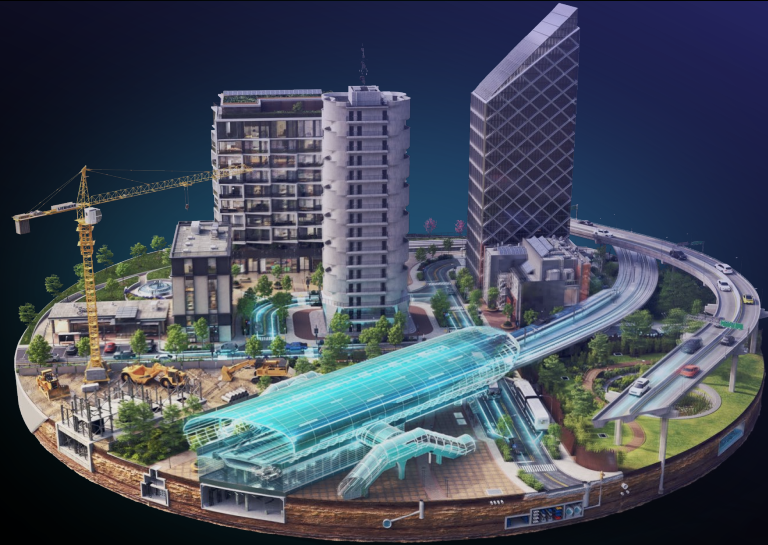


D&M



# Data is the backbone but information and insights are the fuel for change.

Move beyond drowning in data and systems to a platform that helps turn data into information that is more actionable for your business from design to operations.



# Find us this week



Nathan Dunn

- Autodesk Construction Cloud questions follow-up
- General Autodesk Inquiries
- Contact: 469.712.8149 / [Nathan.dunn@Autodesk.com](mailto:Nathan.dunn@Autodesk.com)



Trent Richards

- FlexSim presentation on Thursday morning
- FlexSim Hands-on Test Drive Thursday afternoon
- Contact: 385.287.6789 / [Trent.Richards@Autodesk.com](mailto:Trent.Richards@Autodesk.com)

