

# Surviving the Electronics Revolution

Marcelo Ferreira – EDA Sales Manager

# The revolution of electronic product development

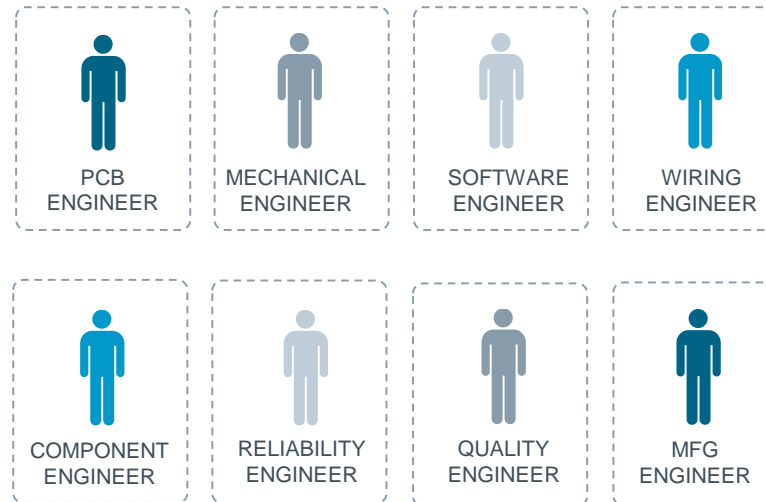
Survival requires digital transformation of your design processes



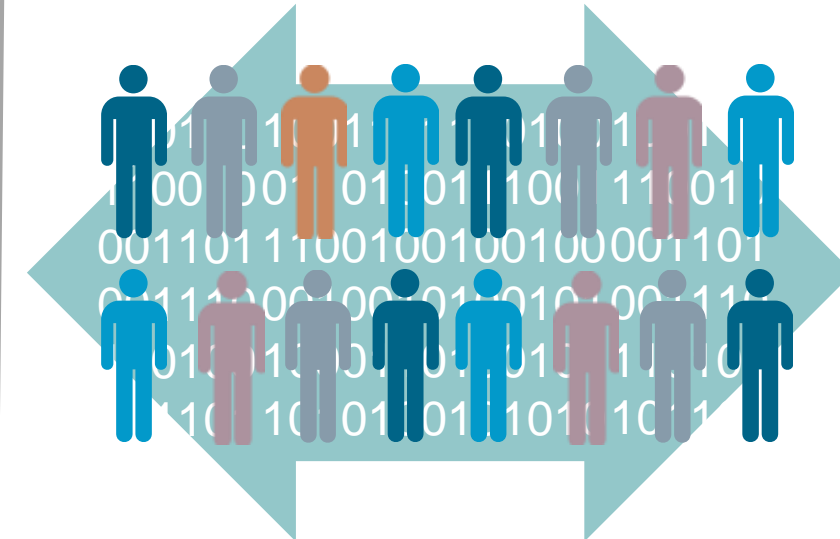
Products are getting smarter, connected, and developing intelligence



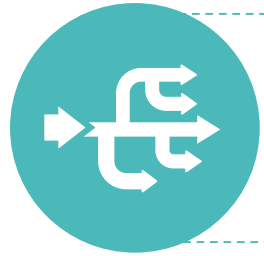
Product complexity is outpacing legacy development where silos and manual processes dominate



Digitalization breaks down these barriers so you start integrated and stay integrated



## Those companies who were not prepared



**53%** Require additional resources to compensate



**32%** Need better collaboration across disciplines



**21%** Experience manufacturing delays



**35%** Require numerous engineering change orders

# Implications of being unprepared

*Those unprepared share common characteristics:*

Poor integration of electronics with mechanical across product development and manufacturing

Inefficient design processes, data incompatibilities, data mismanagement leads to extensive error-prone manual intervention

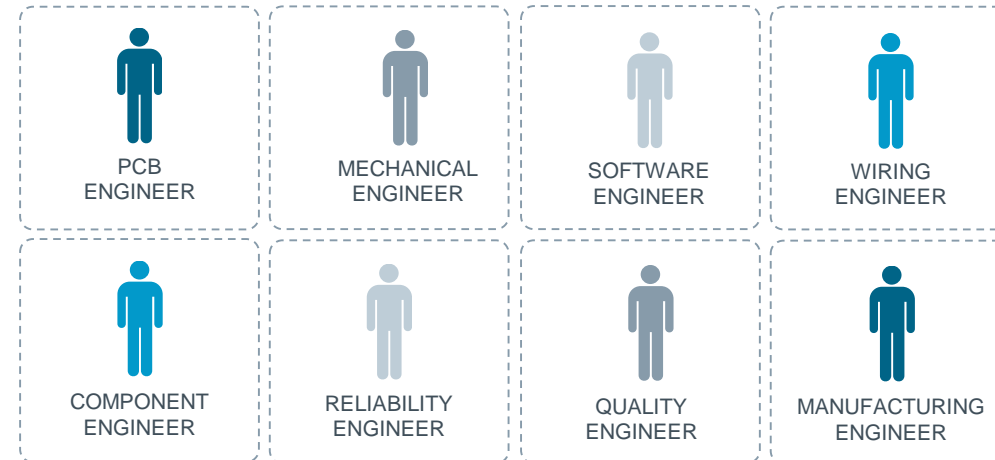
Heavy dependence on backend verification and physical prototyping that compromises product reliability and increases cost

Inefficient cross-domain collaboration

Data incompatibilities

Manual manufacturing handoff

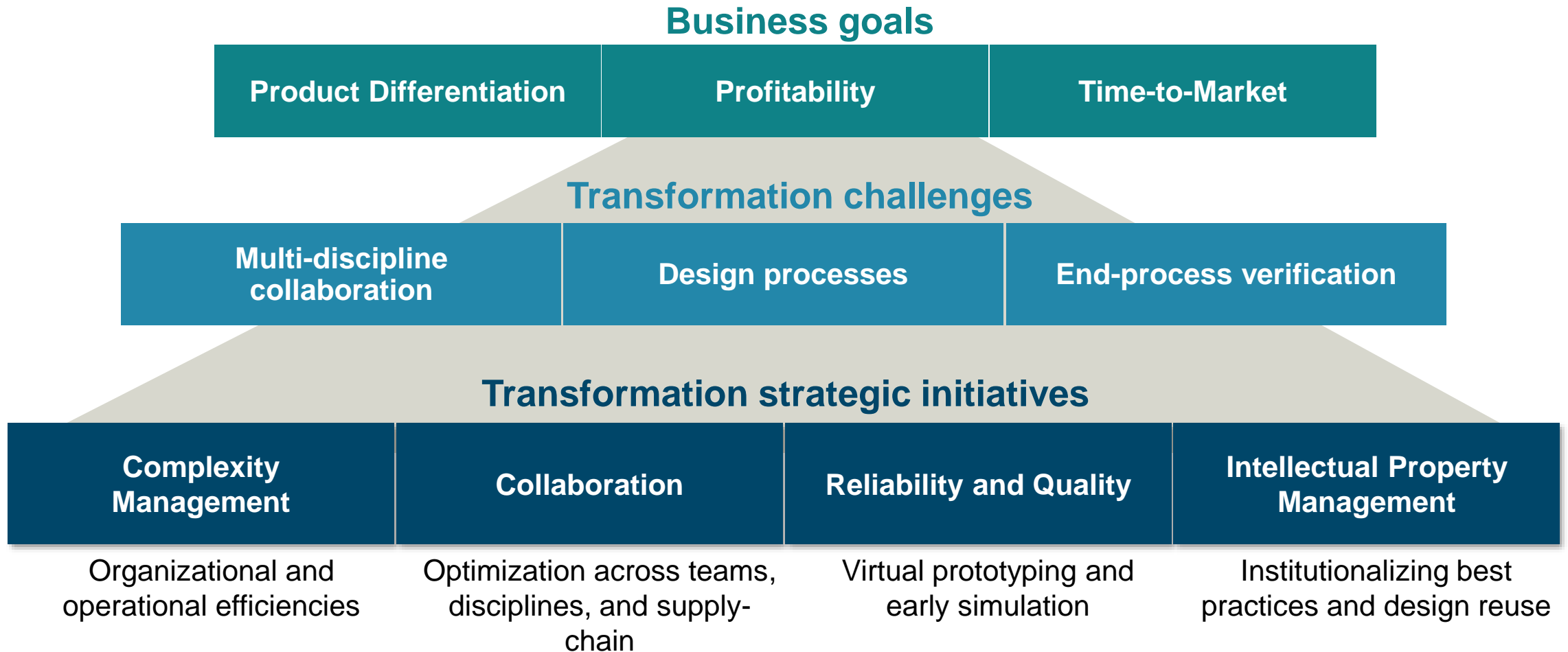
Reliance on physical prototyping



**BRINGING MORE CAPABLE PRODUCTS TO MARKET  
FASTER REQUIRES MULTI-DISCIPLINE STRATEGIC INITIATIVES**

# Survival through strategic initiatives

*Target business goals and transformation challenges...*



# Characteristics of best-in-class electronics systems companies



## Top Engineering Actions by Best-in-Class Organizations

- Productivity through tool and process efficiency
- Unified design data management
- Multi-team collaboration
- Simulation and analysis

Aberdeen Group, November 2015

## What Defines “Best-in-Class”

92% meet target product costs

89% meet launch dates

94% meet quality targets

90% meet revenue targets

Industry average performance is 75% or lower in each category

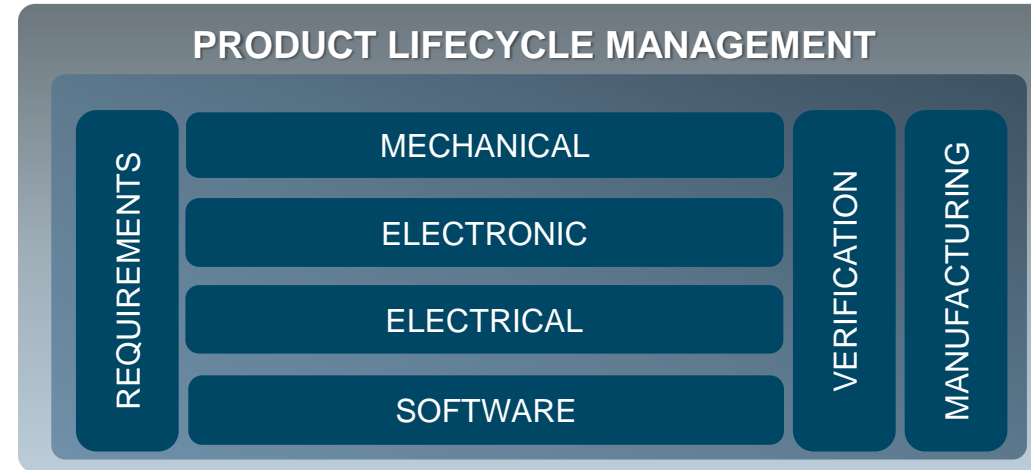


# Transformation through digital thread continuity

*Surviving the electronics revolution*



**DIGITALLY INTEGRATED &  
OPTIMIZED MULTI-DOMAIN  
SOLUTION FOR ELECTRONICS  
SYSTEMS DESIGN**

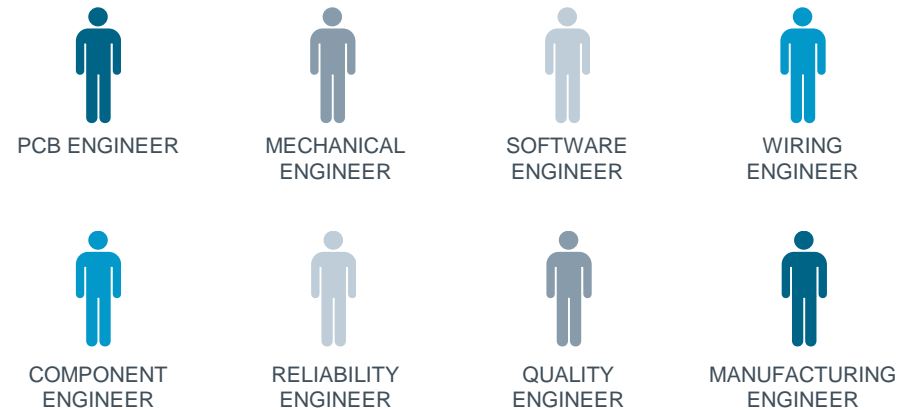


Efficient cross-domain collaboration

Common view into design data

Digital manufacturing handoff

Digital prototyping



# Siemens can deliver the transformation you need to win

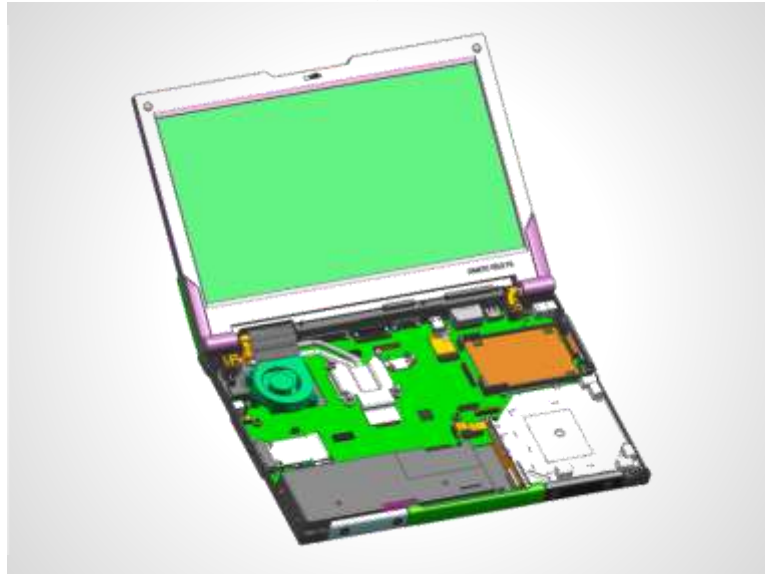
*Realizing the digital enterprise*

**SIEMENS**  
*Ingenuity for life*

## IDEATION



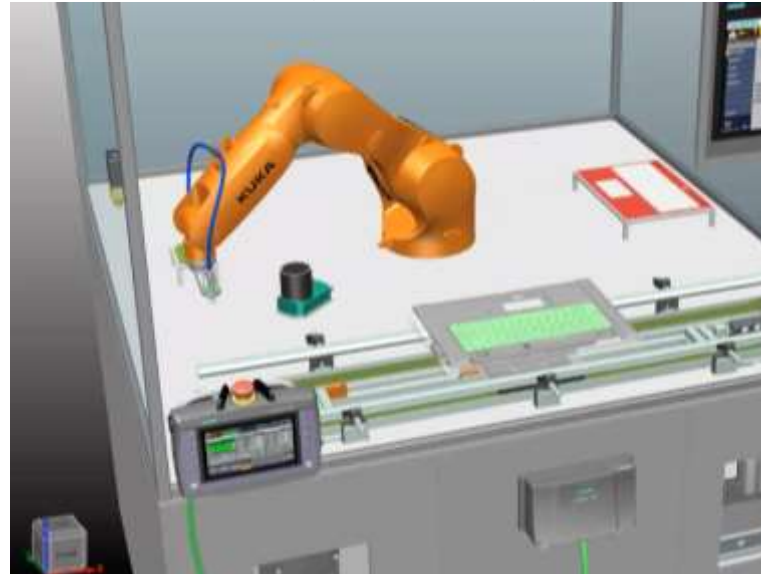
Requirements, design, manufacturability



## REALIZATION



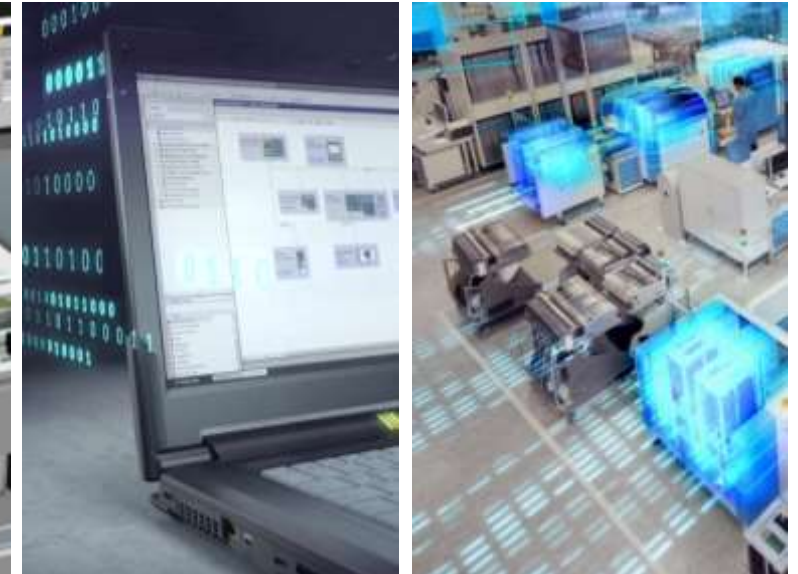
Process planning, manufacturing execution



## UTILIZATION



Factory automation, data analytics

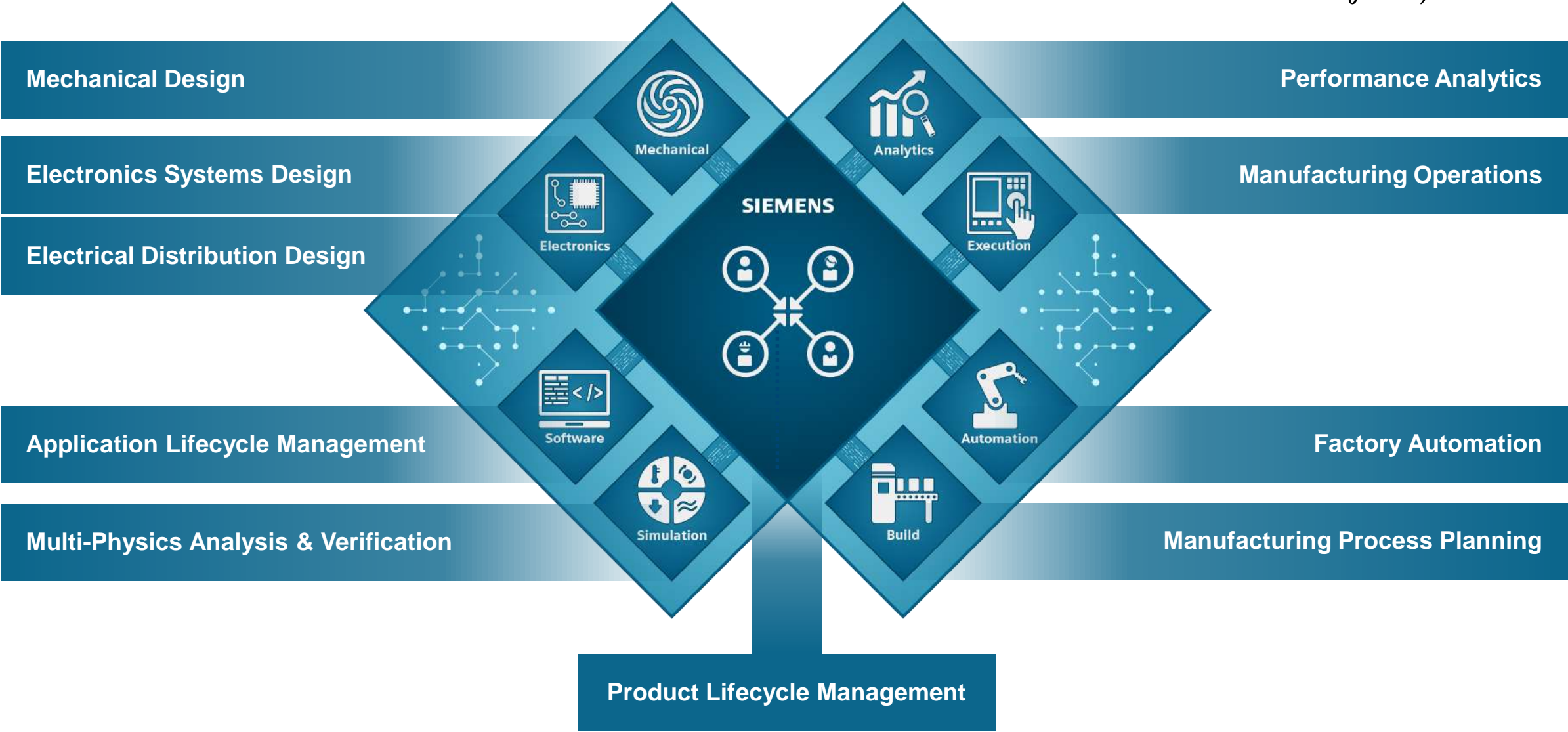


Leverage the digital thread to  
*start integrated and stay integrated*



# Siemens electronic systems design portfolio overview

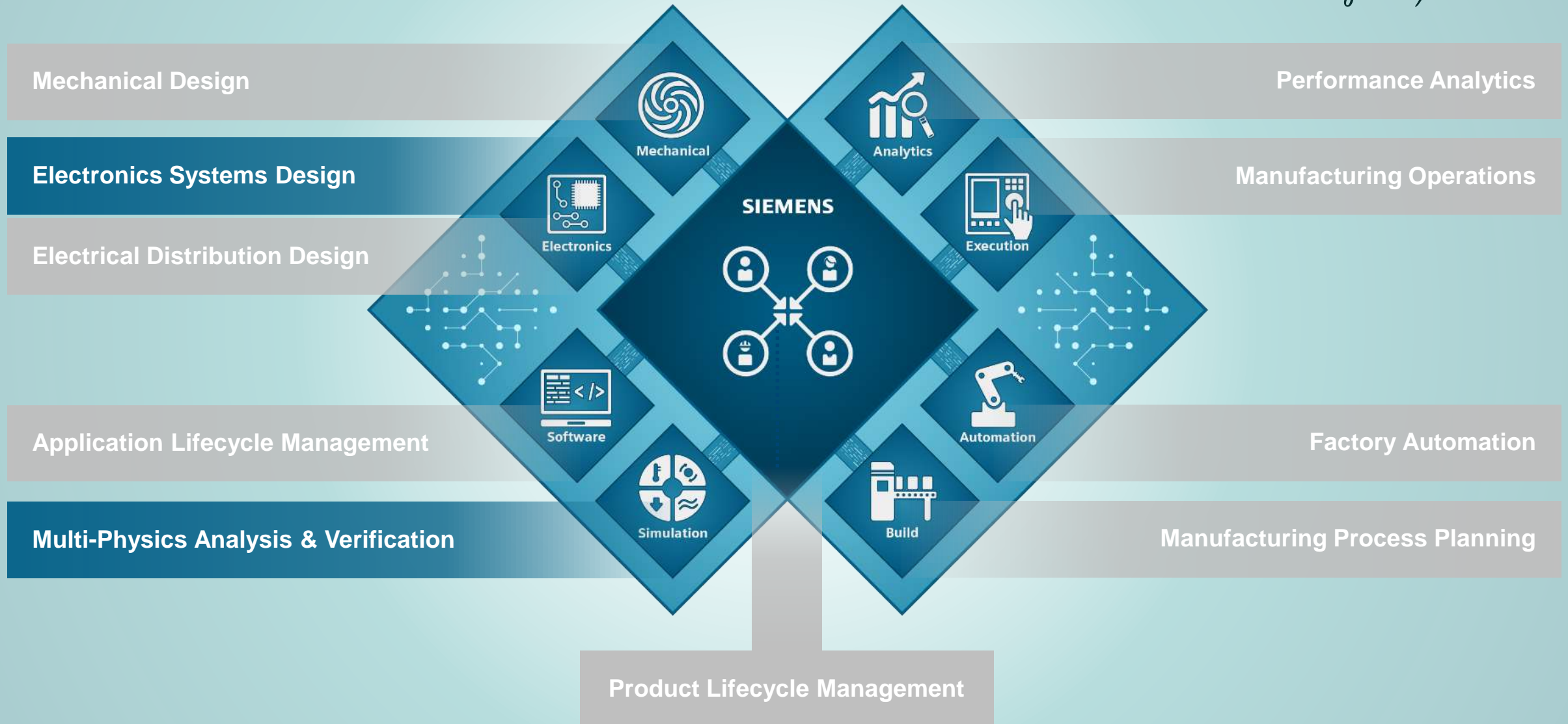
# Enabled by the Siemens electronics system design portfolio



# Enabled by the Siemens electronics system design portfolio

*Electronics systems design & verification – Xpediton*

**SIEMENS**  
*Ingenuity for life*





# Enabled by the Siemens electronics system design portfolio

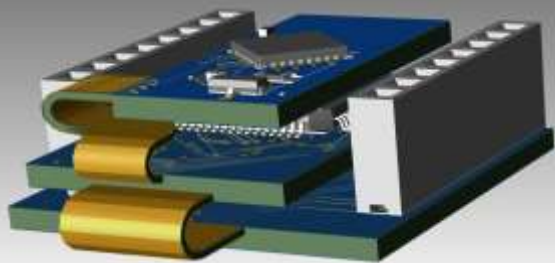
*Electronics systems design & verification – Xpedition*

## SIEMENS

*Ingenuity for life*

### Complexity Management

- Constraint-driven design
- Multi-board systems
- 3D rigid/flex design
- Design capacity for large & complex designs



“We can identify issues early and are able to improve our overall design productivity.”

**FUJITSU**

### Collaboration

- Simultaneous multi-user schematic entry & layout
- ECAD/MCAD co-design
- IC/package/PCB co-design
- PCB/harness co-design

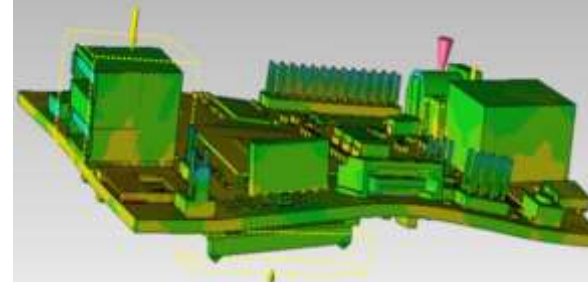


“We are achieving significantly reduced design cycle time thanks to concurrent design.”



### Reliability & Quality

- Schematic integrity
- SI/PI analysis & verification
- Electrical-rule-checking
- Vibration and acceleration
- Manufacturability analysis

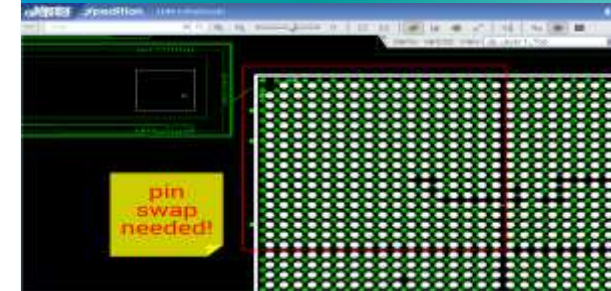


“PCB Designers and DFM Engineers are now communicating and getting boards right faster.”



### IP Management

- ECAD WIP data management
- Centralized library management
- Managed block reuse



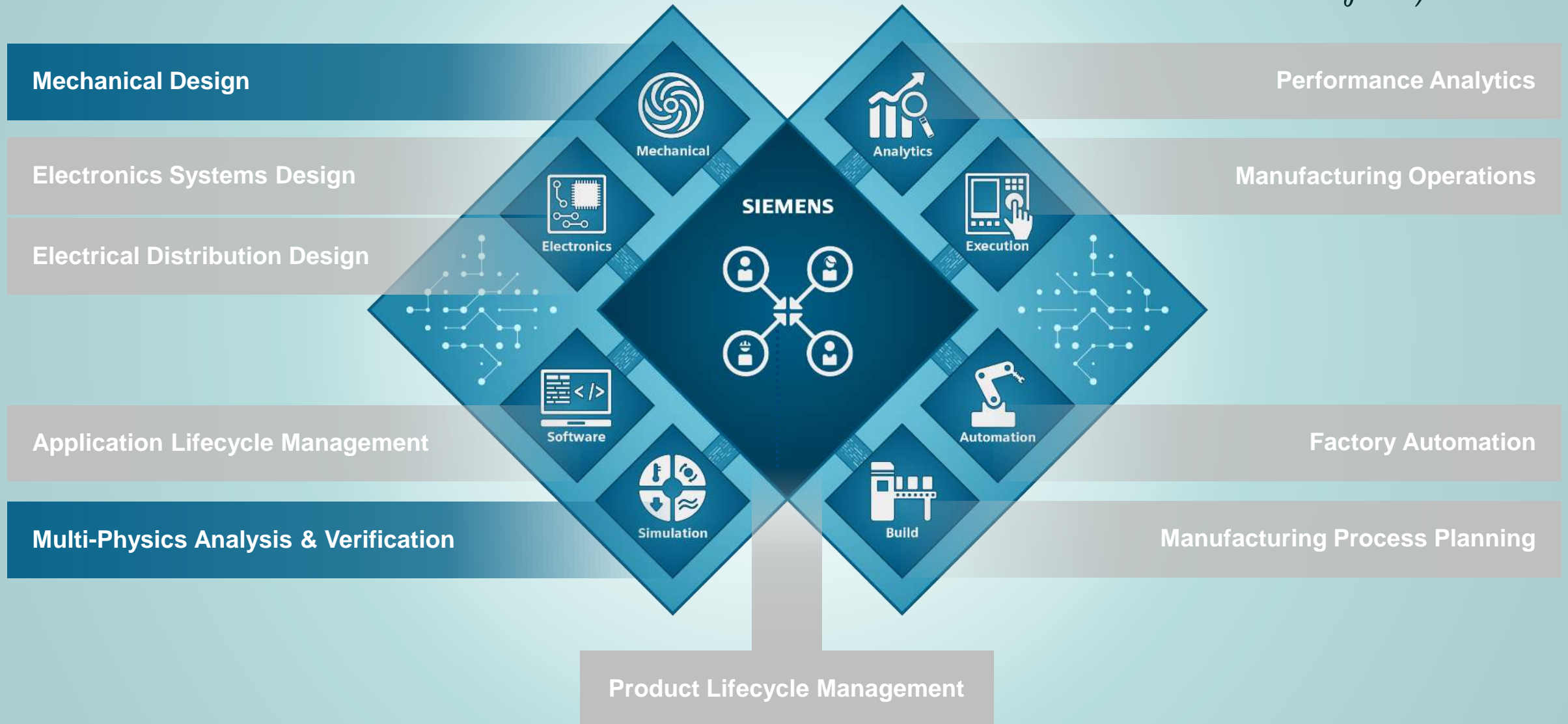
“Standardizing on a data management platform has enhanced our ability to develop libraries and manage design data more efficiently while enabling our PLM integration”

**Waters**

# Enabled by the Siemens electronics system design portfolio

*Mechanical design & verification – NX*

**SIEMENS**  
*Ingenuity for life*



# Enabled by the Siemens electronics system design portfolio

*Mechanical design & verification – NX*

## SIEMENS

*Ingenuity for life*

### Concept Creation

- Integrated styling through to detailed design
- High end visualization
- Fast studies of mechatronic control systems layout

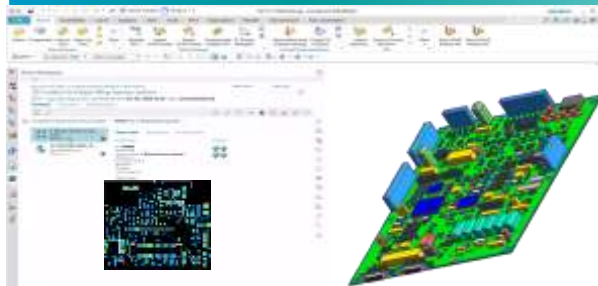


“NX gives the designers wonderful control over what they’re doing from the very, very beginning of the process. We have never ever had a situation where our creative intent has been restricted by the tool.”



### Collaboration

- Tight MCAD/ECAD integration
- Rigid and flexible PCB design
- Cross-probing ensures product validity vs. schematic design



### Detail Design

- Fully integrated 2D & 3D design supports art to part process
- Synchronous technology speeds design change



“The introduction of electronics required a different approach from two-dimensional drawing, designing machines entirely in 3D.”

*Fiorenzato*

### Driving Downstream Processes

- Integrated analysis & manufacturing removes redundant processes, improves quality & reduces time and cost



“3D models are used for various purposes: extraction of 2D drawings for mold and tool makers; design of sheet metal parts, integrating materials and fabrication; assembly instructions for operators;”

**3 GROUPE BRANDT**  
THE BEST EVERYDAY



# Enabled by the Siemens electronics system design portfolio

*Product lifecycle management – Teamcenter*

**SIEMENS**  
*Ingenuity for life*



# Enabled by the Siemens electronics system design portfolio

*Product lifecycle management – Teamcenter*

# SIEMENS

*Ingenuity for life*

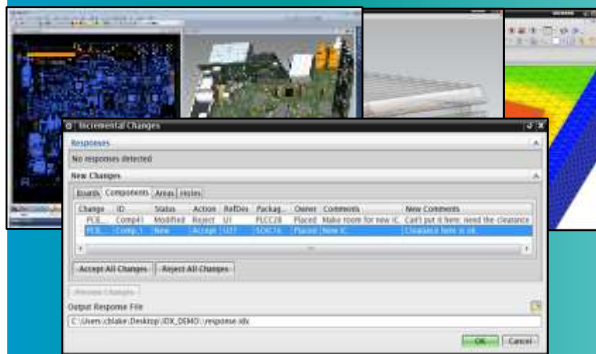
## Complexity Management

- Link requirements to implementation
- Define a system-level model



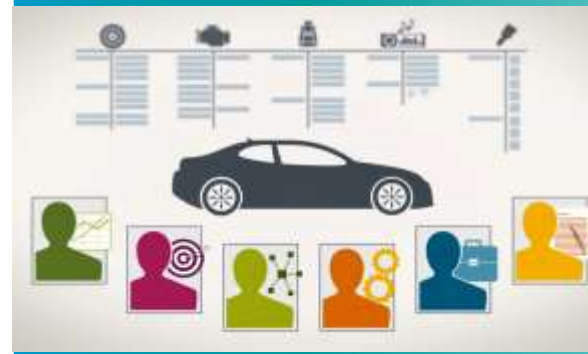
## Collaboration

- Integrate tools, data & processes
- Collaborate & share data across domains and processes
- Optimize collaboration with global suppliers



## Reliability & Quality

- Configure product variants
- Support environmental compliance initiatives
- Embrace digital prototyping



## IP Management

- Manage released design package
- Enterprise-wide parts library
- Manage projects, resources and capabilities on a global scale



# Delivering a multi-domain solution

## PRODUCT LIFECYCLE MANAGEMENT

REQUIREMENTS

MECHANICAL

ELECTRONIC

ELECTRICAL

SOFTWARE

VERIFICATION

MANUFACTURING

## Focus areas

1

### INTEGRATION

Across design processes and resources

2

### SHARED DATA

Intelligent design data that is context specific

3

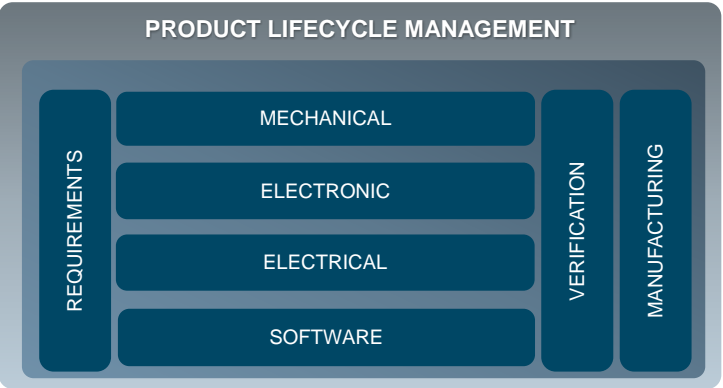
### IMPROVED INTELLIGENCE

Actionable information and feedback loops

# Siemens is the right partner



Digitally integrated  
multi-domain solution for  
electronic systems



We can bring transformation  
to your business



Leverage the digital thread to  
*start integrated and stay integrated*

Siemens is much more  
than a tool vendor





**Thank You!**