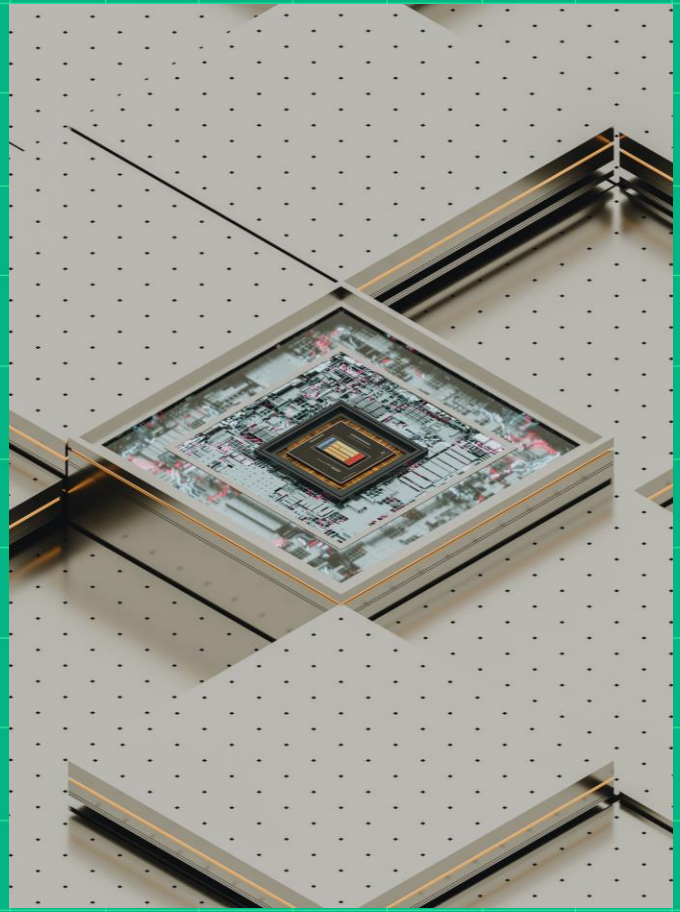
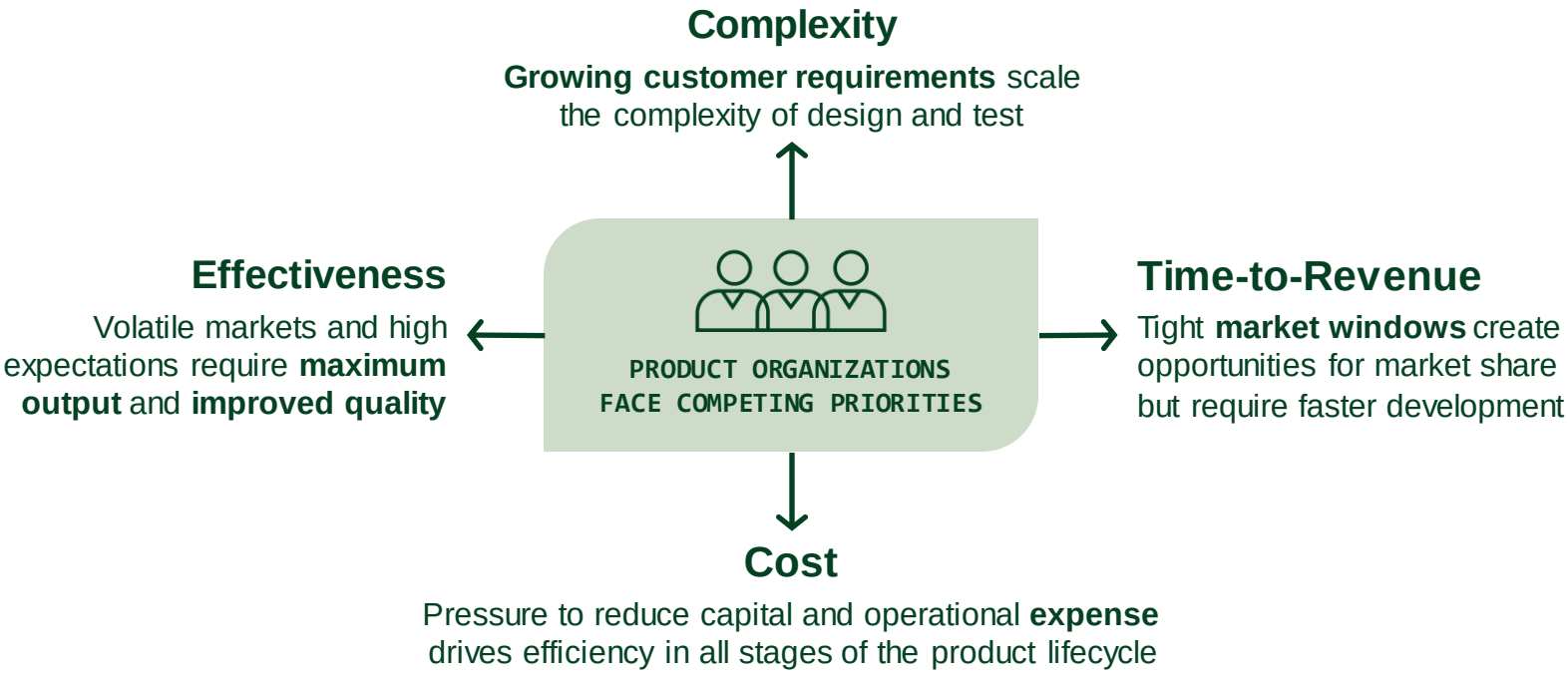
NI Lifecycle Solutions

Mike Neal

A Data-centric Approach to Product Lifecycle Performance



Companies Face Pressure to Optimize Performance



The Impact on Test

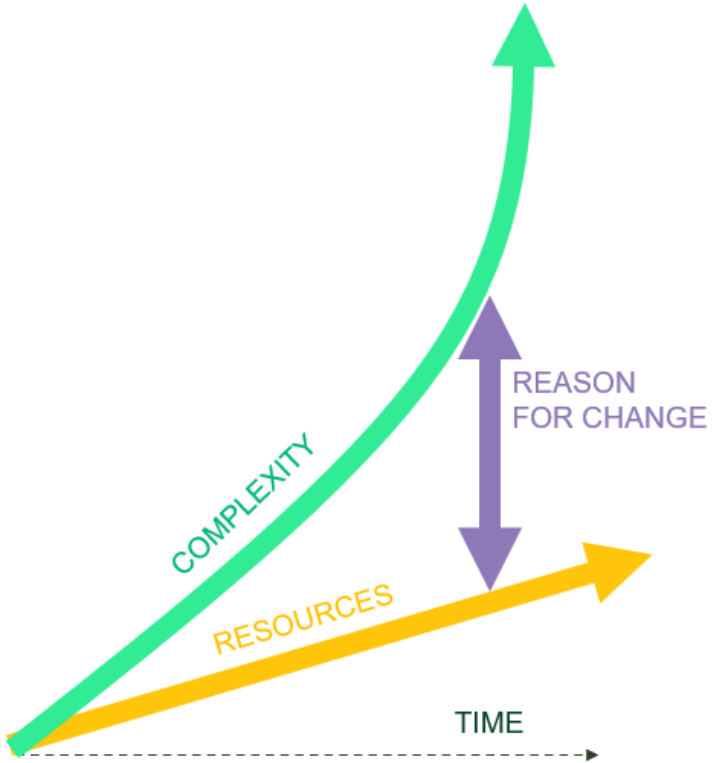
Time is a precious resource

- Less time to do more test activities

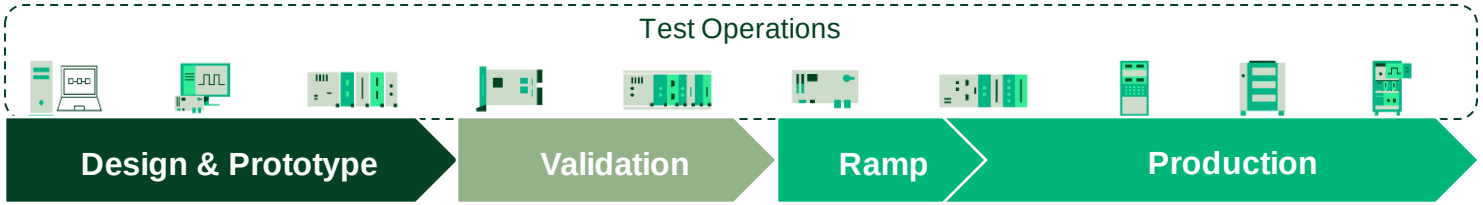
Lack of efficiency / resources

- Lack of reuse within / across teams
- Limited time to improve processes

The gap between complexity and resource availability keeps growing



The Need for Digital Transformation in Test



More Products. **More Requirements.** **Less Time.** **Less Money.**

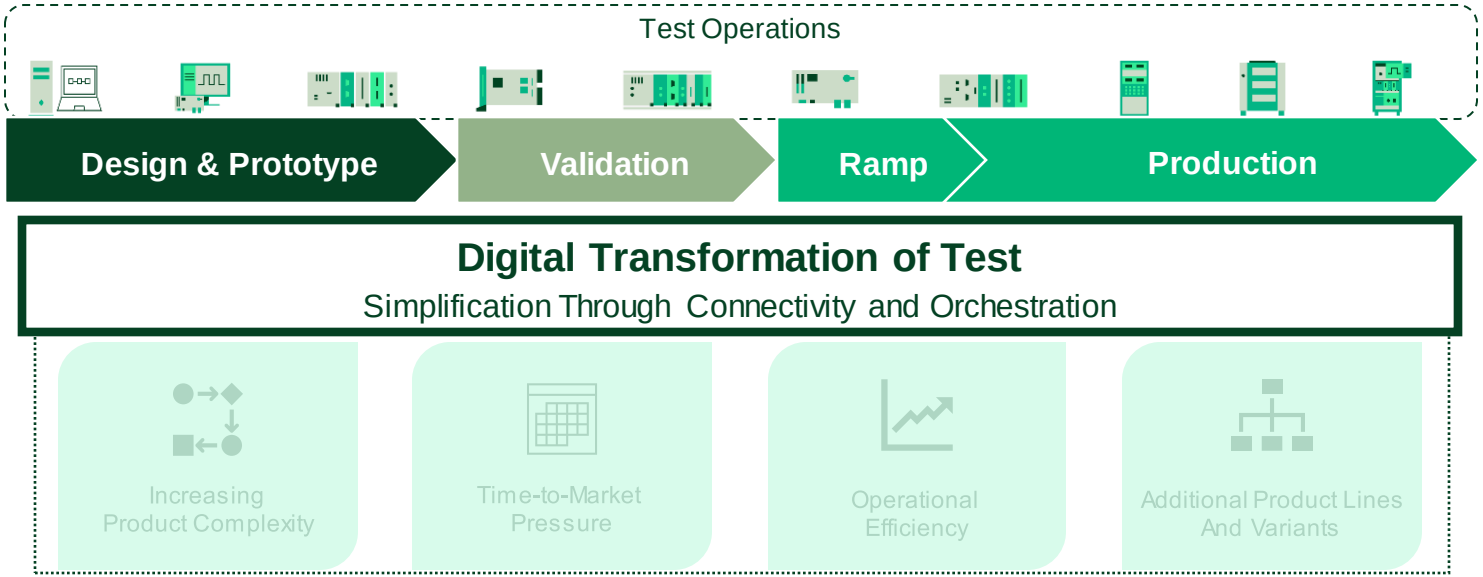
Increasing Product Complexity

Time-to-Market Pressure

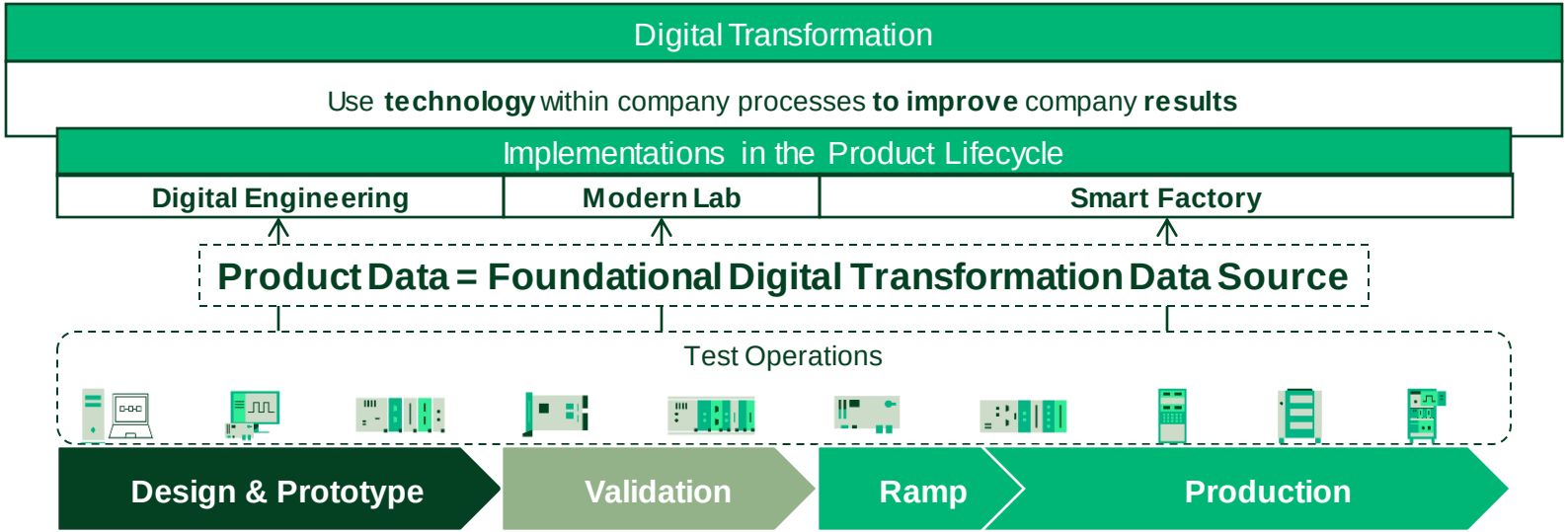
Operational Efficiency

Additional Product Lines And Variants

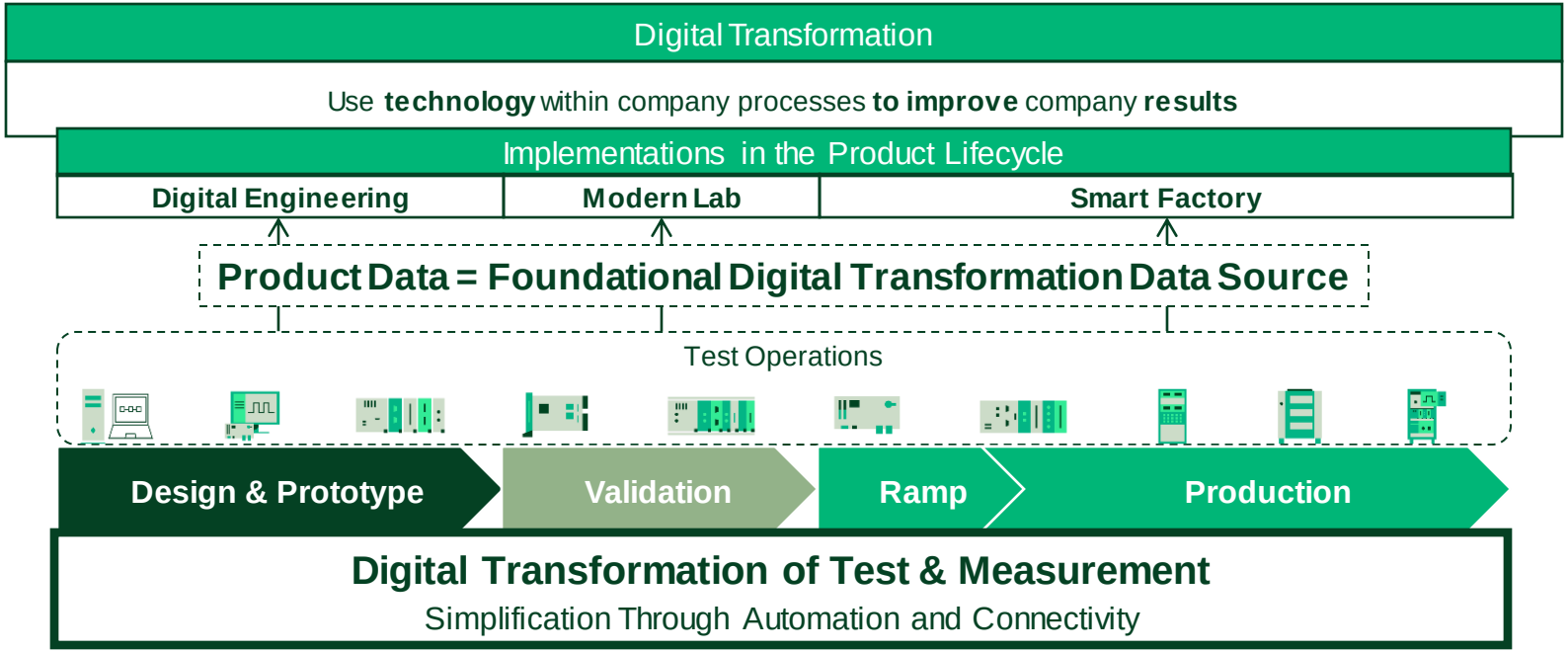
The Digital Transformation of Test



The Role of Test in Digital Transformation

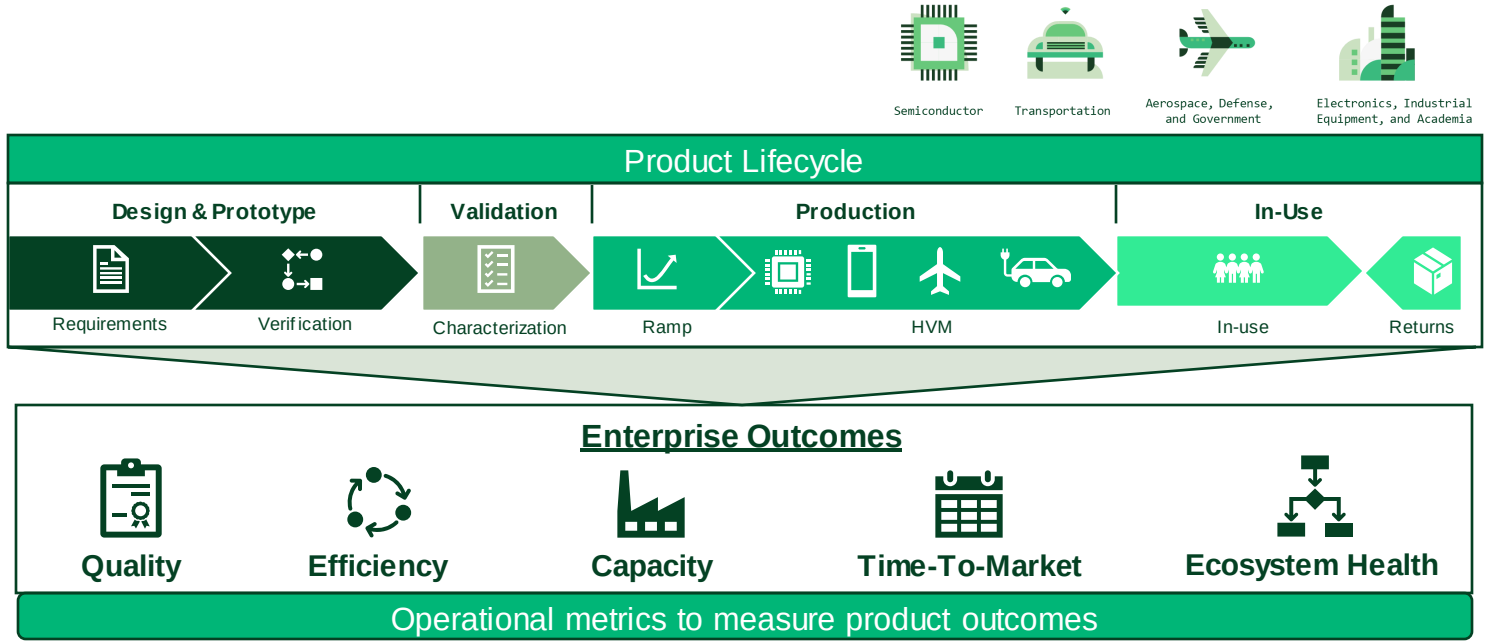


Test and Transformation

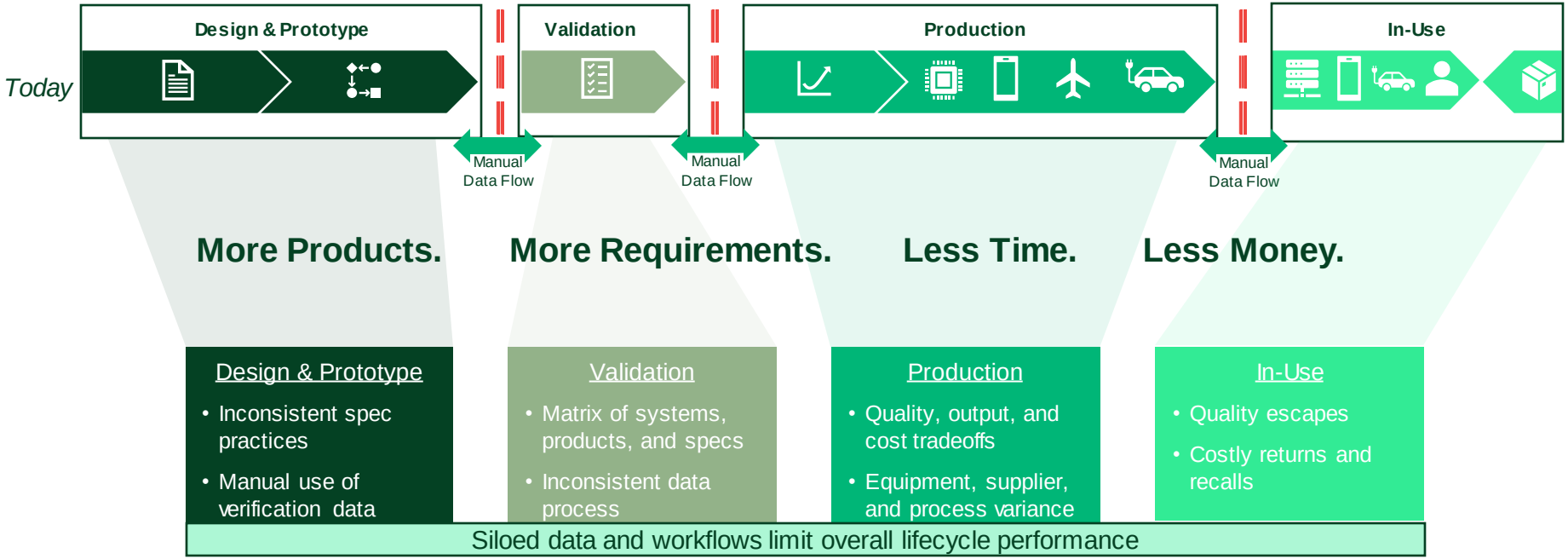


NI Lifecycle Solutions

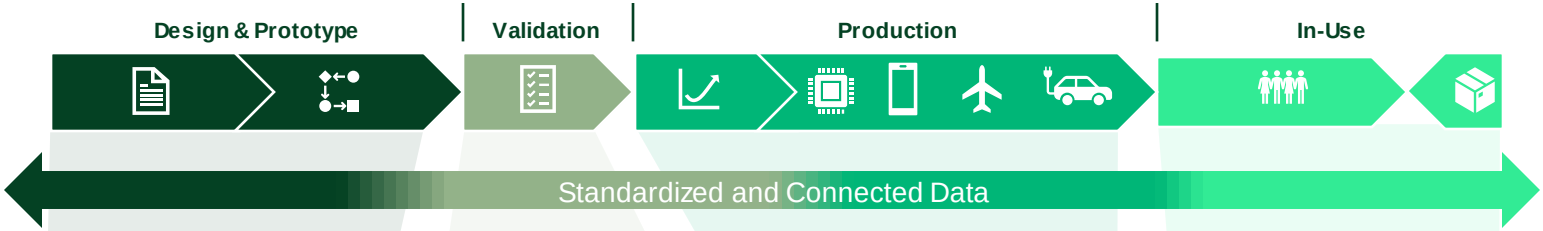
Scoping the Product Lifecycle



Product Lifecycle Challenges



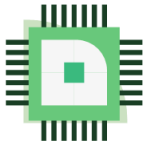
NI Lifecycle Solutions



Orchestrating, connecting, and analyzing data to solve problems within and across product lifecycle stages

Design & Prototype	Validation	Production	In-Use
Spec management and test-data alignment	Test system orchestration and data reporting	Product-centric analytics to drive improvement	Train analytics models with in-field data to improve design & mfg.

The Product Journey with NI Lifecycle Solutions



Semiconductor

Transportation

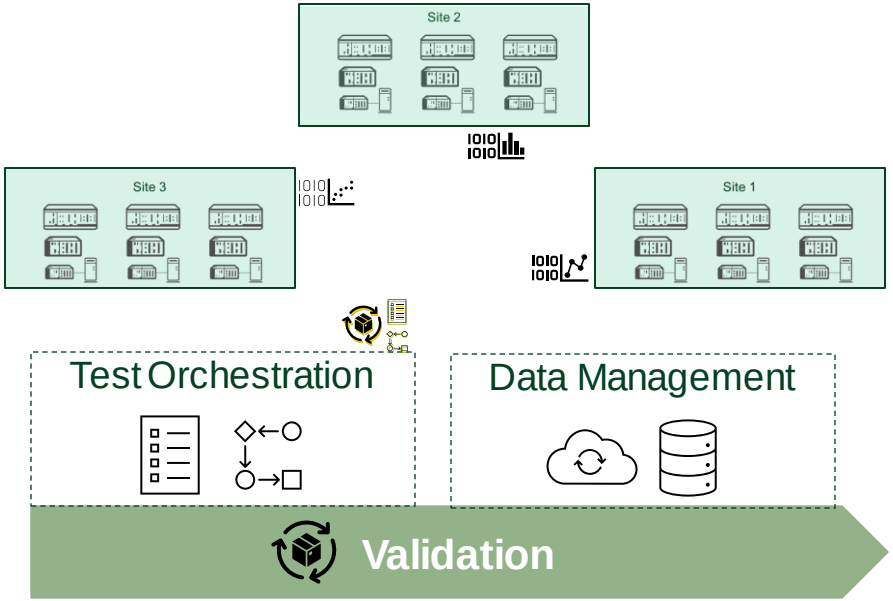
Aerospace, Defense, and Government

Electronics, Industrial Equipment, and Academia

Broad Product Applications

Validation → **Production**

NI Lifecycle Solutions: Streamline Validation



Production

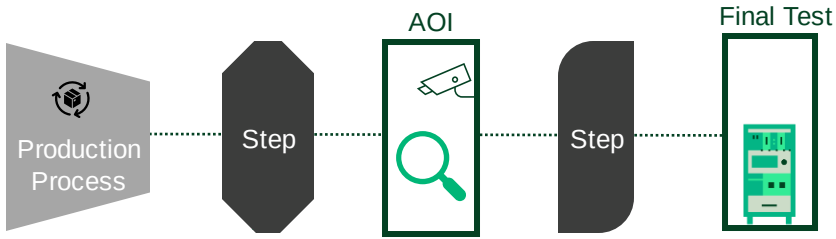
90% Decrease
System Deployment Time
Across 170 systems

20x Faster Analytics
on
500 GB/day

NI Lifecycle Solutions: Optimize Production

90% Decrease
System Deployment Time
Across 170 systems

20x Faster Analytics
on
500 GB/day



Test Orchestration

Data Management

Equipment Efficiency

Adaptive Manufacturing

Validation

Production

~25% Decrease
Cycle Time

>25% Decrease
Scrap

>10% Increase
Process Yield

>30% Decrease
Rework

NI Lifecycle Solutions: Direct Operational Impacts

90% Decrease
System Deployment Time
Across 170 systems

20x Faster Analytics
on
500 GB/day

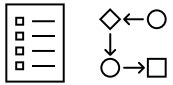
~25% Decrease
Cycle Time

>10% Increase
Process Yield

>25% Decrease
Scrap

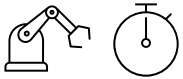
>30% Decrease
Rework

Test Orchestration

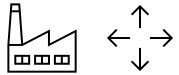


Data Management

Equipment Efficiency



Adaptive Manufacturing



Validation

Production

NI Lifecycle Solutions Framework

Lifecycle Test

Lifecycle Collect

Lifecycle Detect

Lifecycle Act

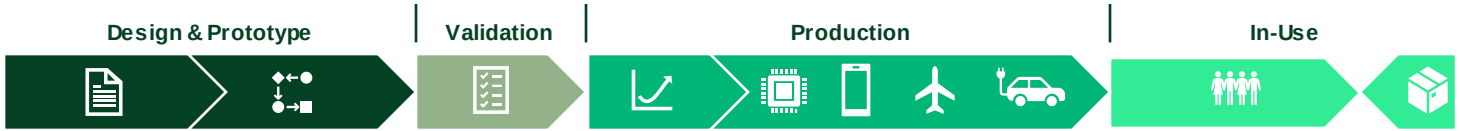
Framework

Orchestrate the efficient generation of product data

Analytics depends on a good data strategy

Convert data into insights

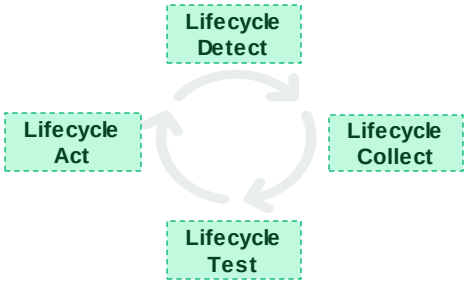
Implement change for continuous improvement



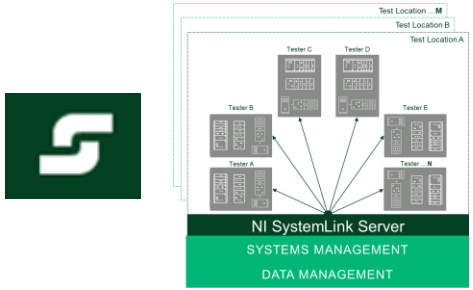
NI Connect: Data & Insights Track

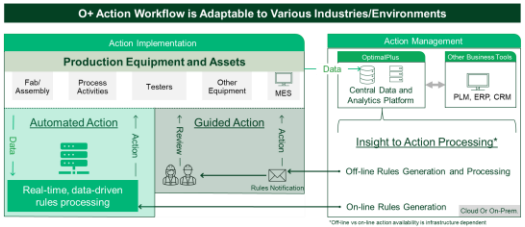
Sessions 2-6: Dive Into the NI Lifecycle Solutions Framework

Framework Explained



Products and Implementation





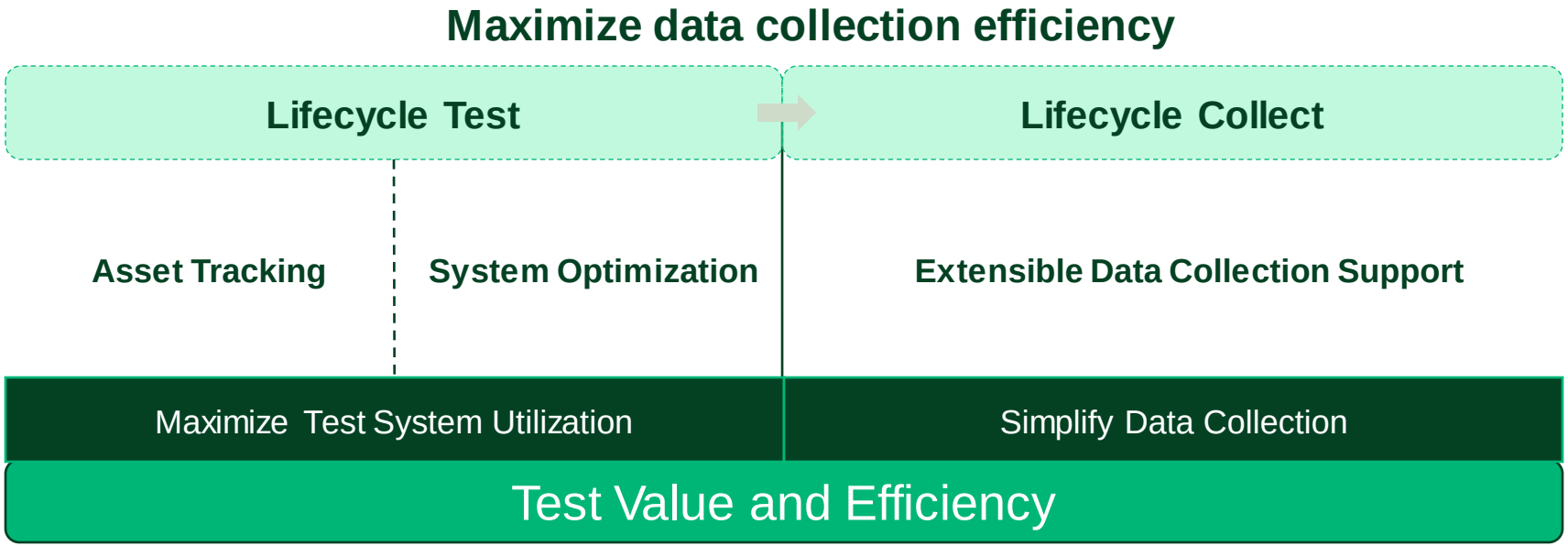
Use-Case Examples:

- Data Harmonization
- Validation System Management
- Adaptive Manufacturing
- CM/Supplier Management
- Overall Equipment Efficiency

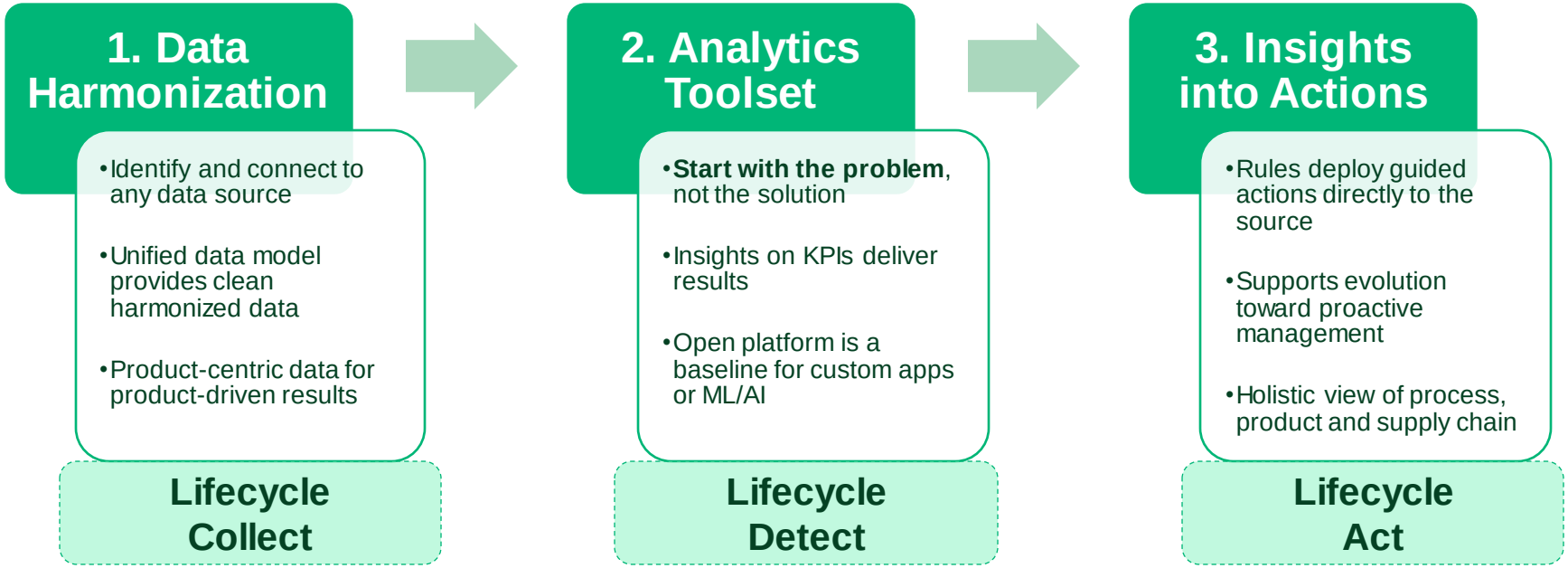
Customer Speaker:

Analog Devices

Session 2: Maximizing Test Value with Centralized Orchestration

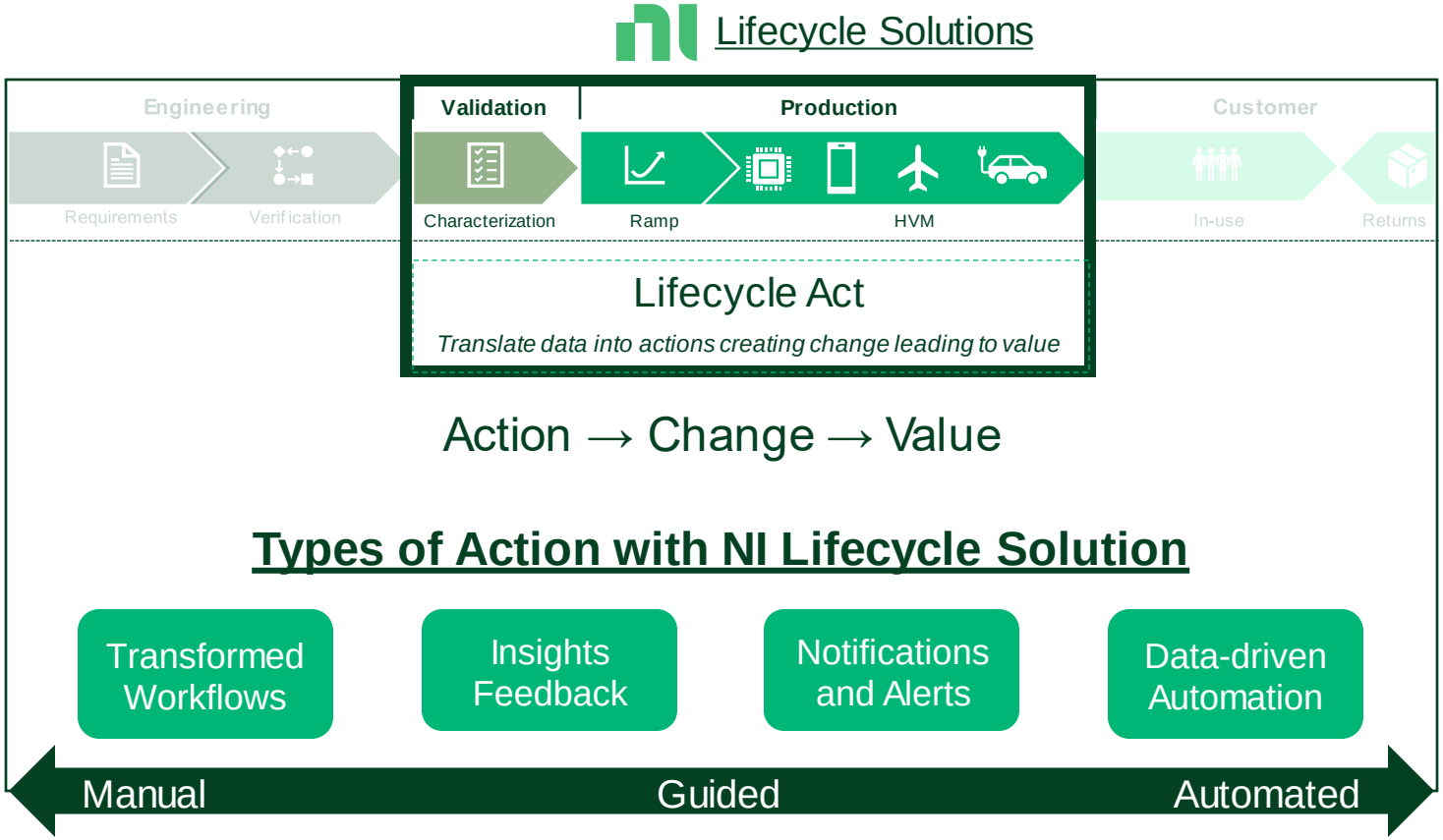


Session 3: Turning Data into Actions

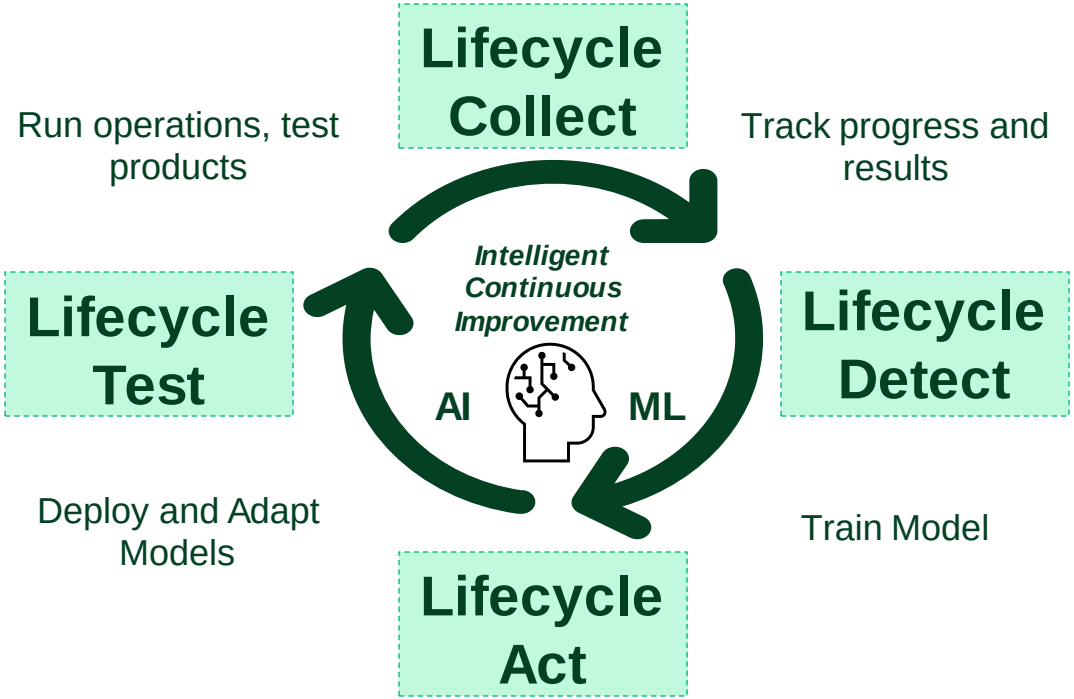


Guest Speaker: Analog Devices

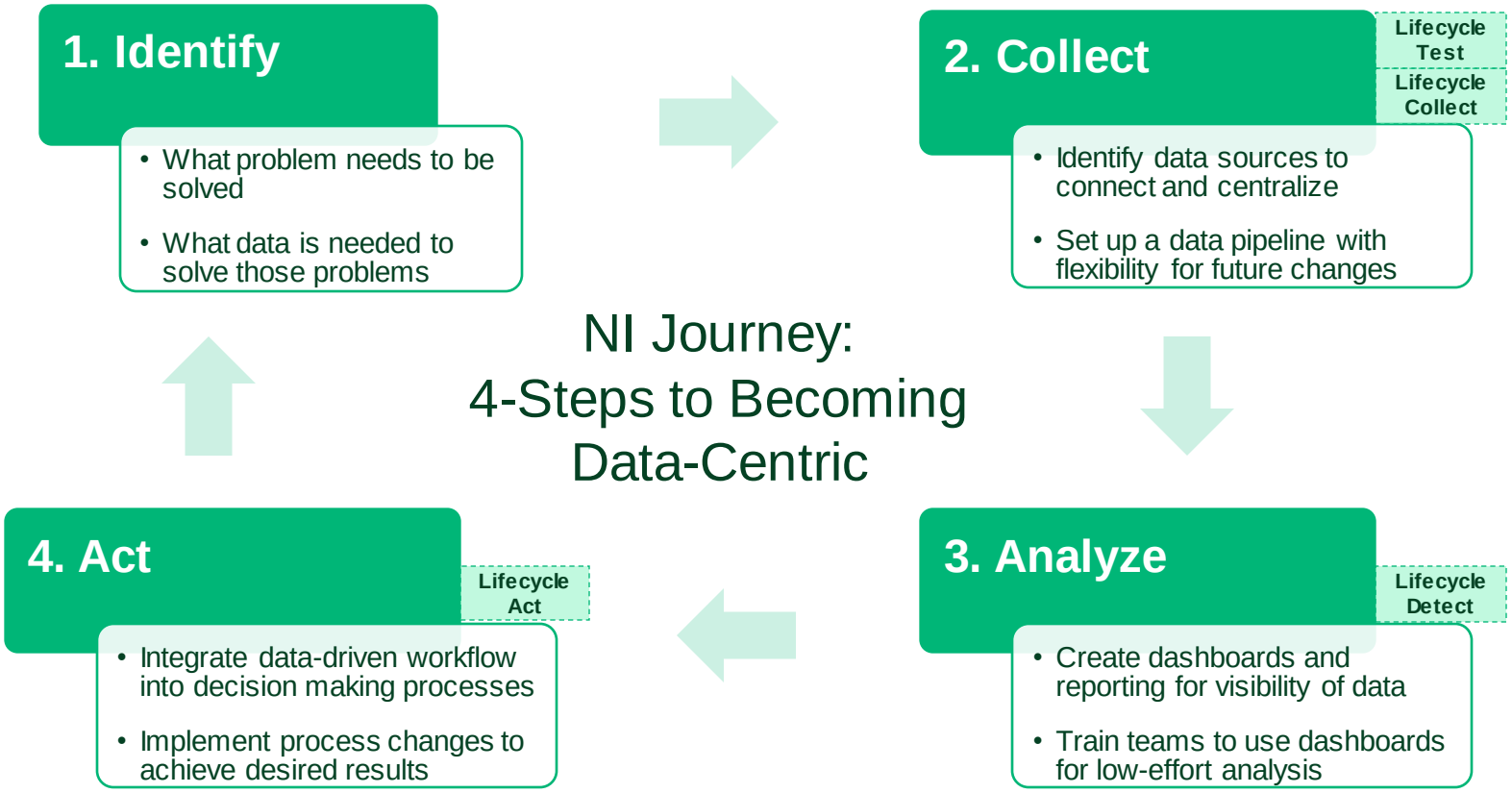
Session 4: NI in Action



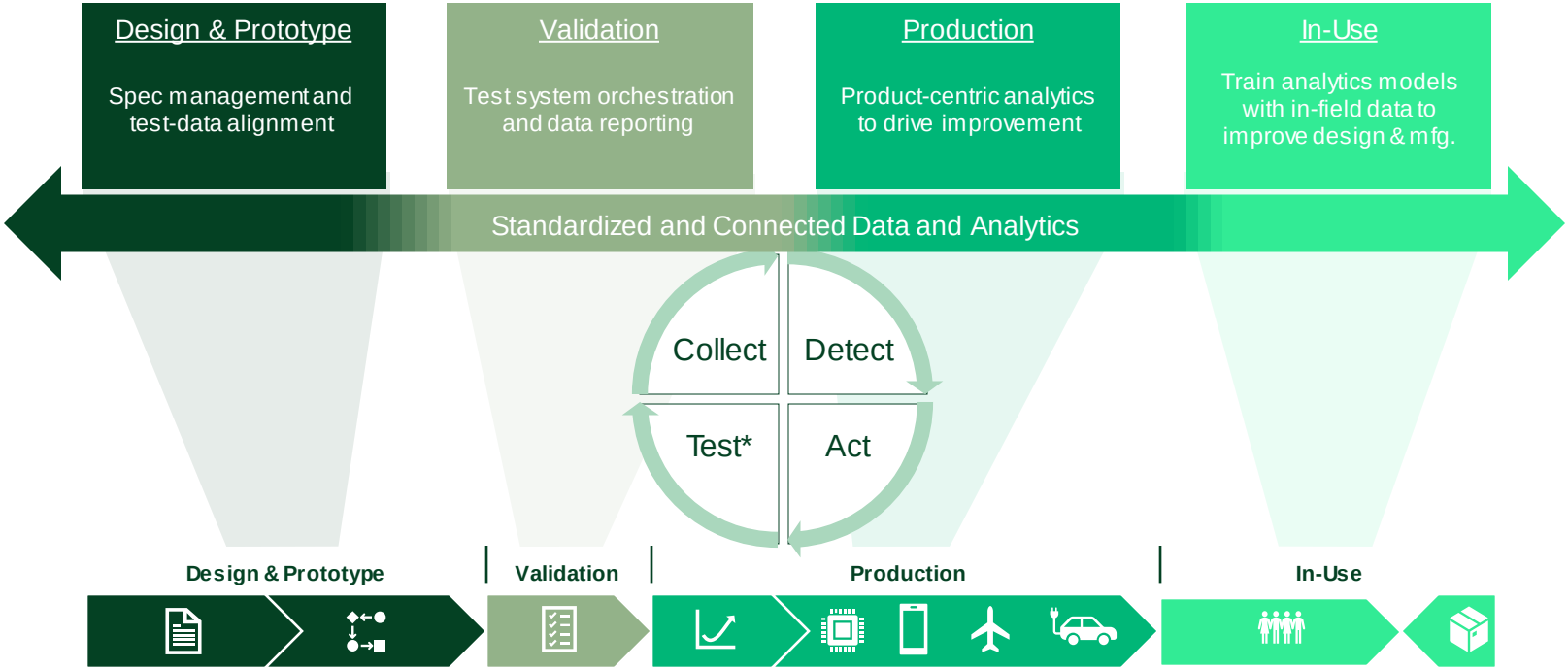
Session 5: Making Actions Smarter with AI/ML



Session 6: Bringing it All Together with NI Manufacturing



NI Lifecycle Solutions



*Compatible with Test HW and Systems from **any Vendor**

National Instruments
is now NI.

NI CUSTOMER CONFIDENTIAL