

# **Evolving Legacy Architectures for Agile/DevOps (ELAAD)**

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# Learning Outcomes

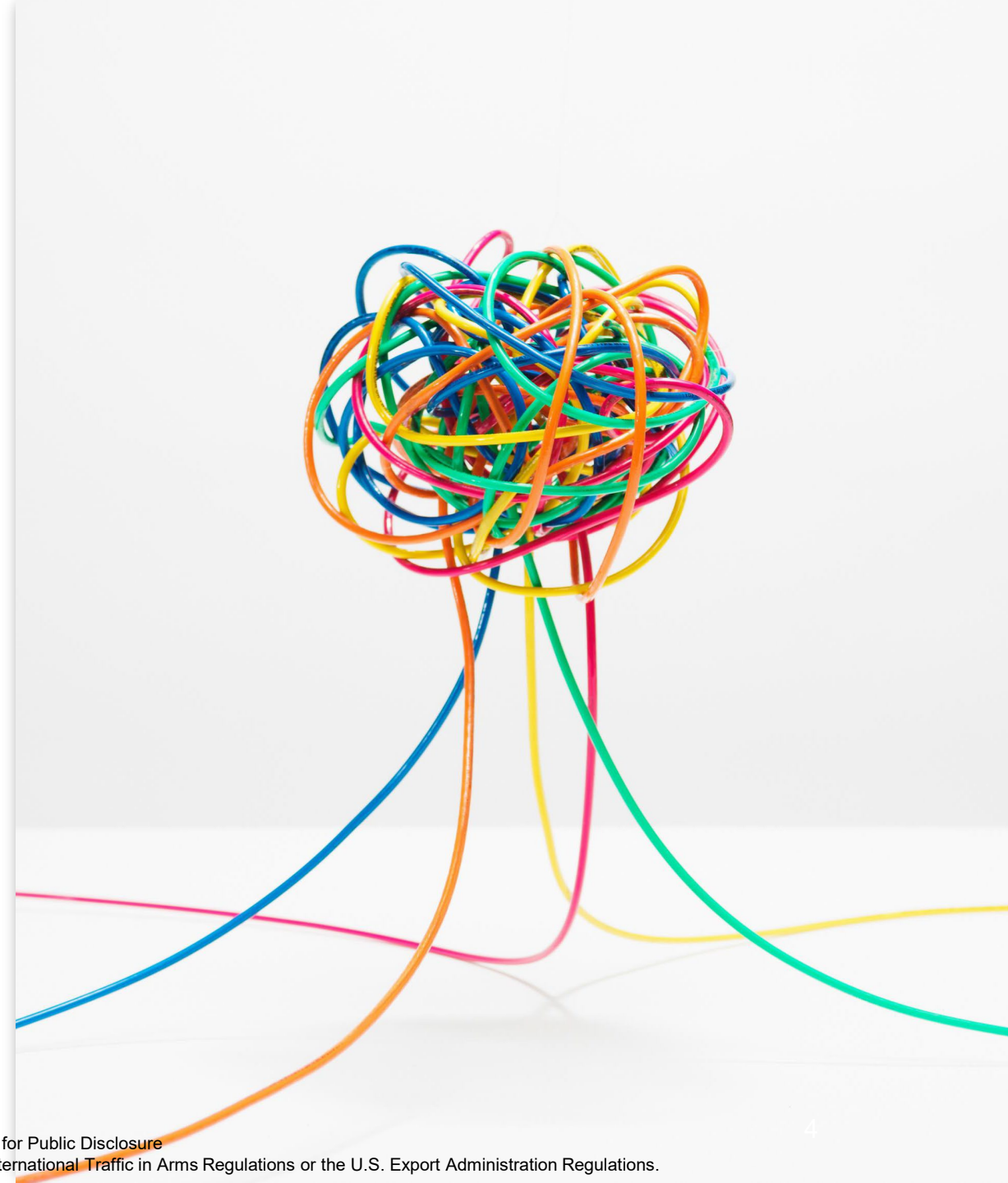
- Clarify the evaluation of legacy systems
- Selection of modernization approach
- Understand the role of Agile and DevOps in legacy system modernization
- Provide an approach to cultural changes



# **LEGACY ARCHITECTURE**

# Legacy Architecture Patterns

- **Monolithic and tightly coupled**
- **Custom applications and services in a layered context**
- **Patterns include**
  - Interface Bloat
  - Hardware Coupling
  - Dead Code
  - Undocumented architectures
- **Does not meet attributes to support DevOps**



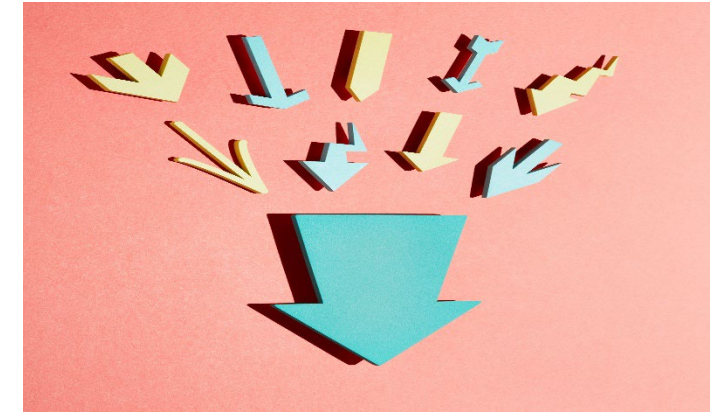
# Limitations Exposed Over Time



**Difficult to Use**



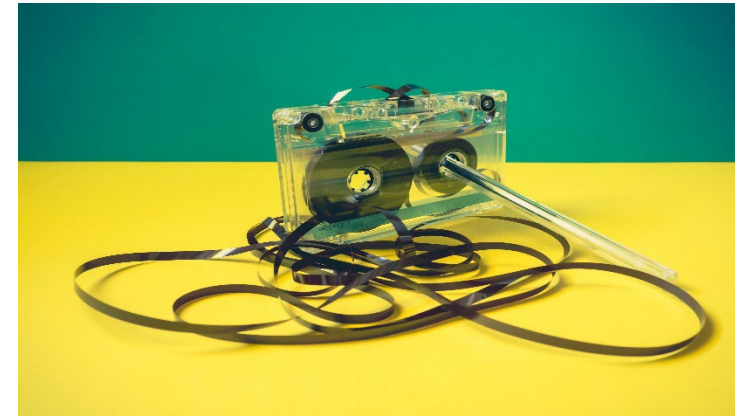
**Higher Maintenance Cost**



**Lower Performance**



**Cybersecurity Issues**

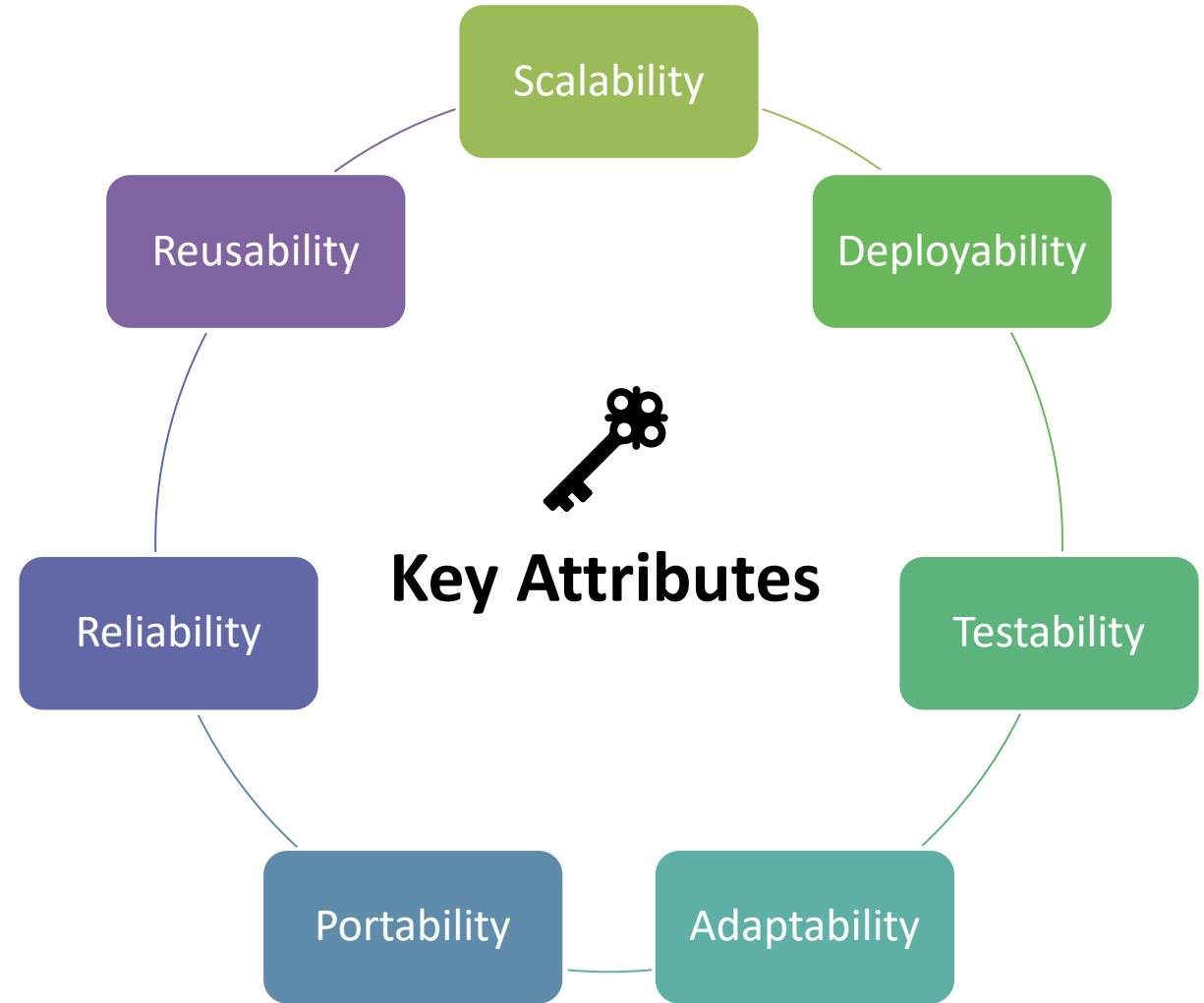


**Technical Limitations**

# **MODERN ARCHITECTURE**

# Modern Architecture Patterns

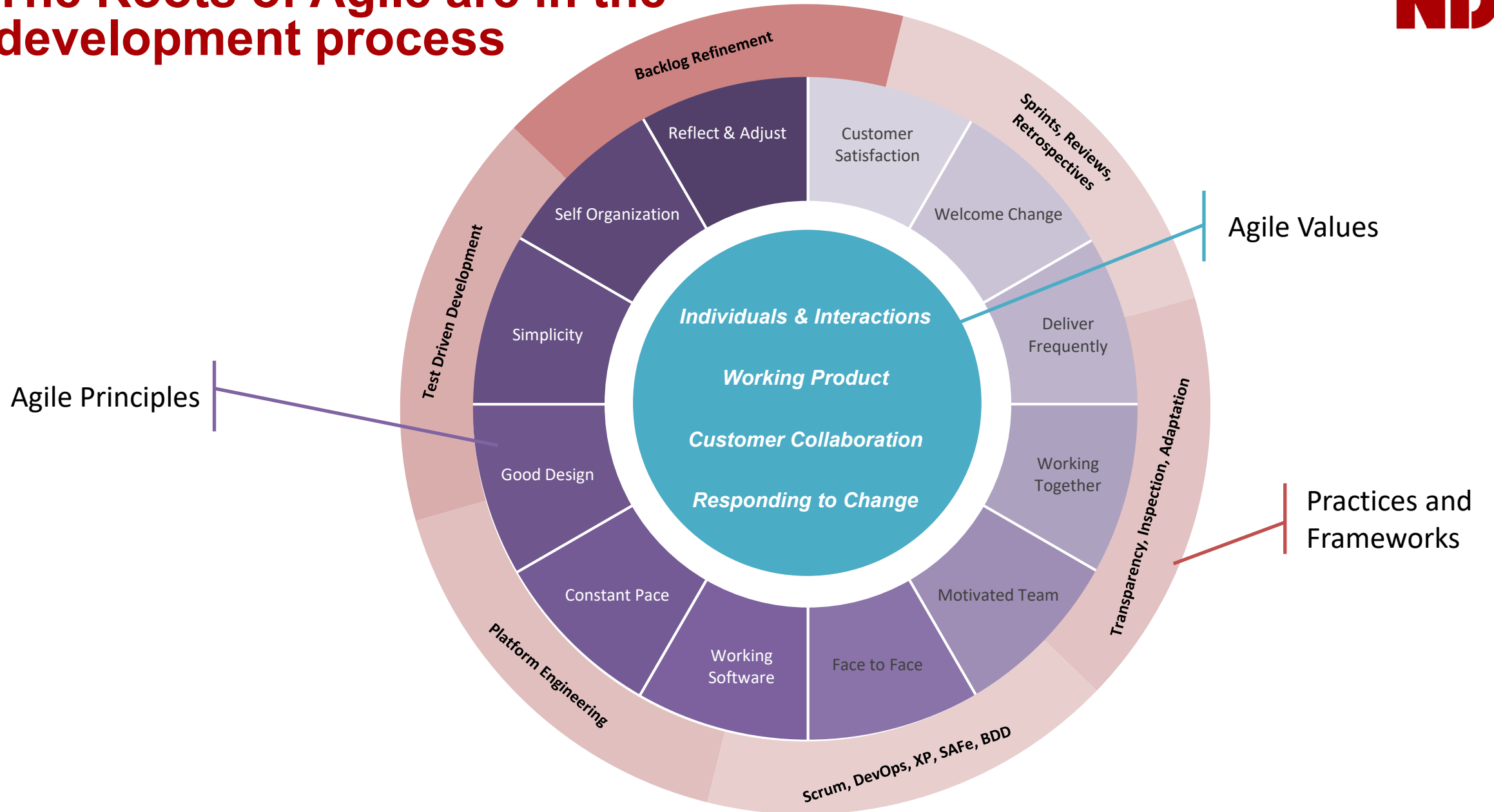
- **Require rapid development**
- **Components can be accessed remotely**
- **Small, modular, decoupled, independent**



# **AGILE IS THE WAY**



# The Roots of Agile are in the development process



# **DEVSECOPS FOR THE WIN**

# Dev(Sec)Ops



**Tight coupling of development, security and operations**

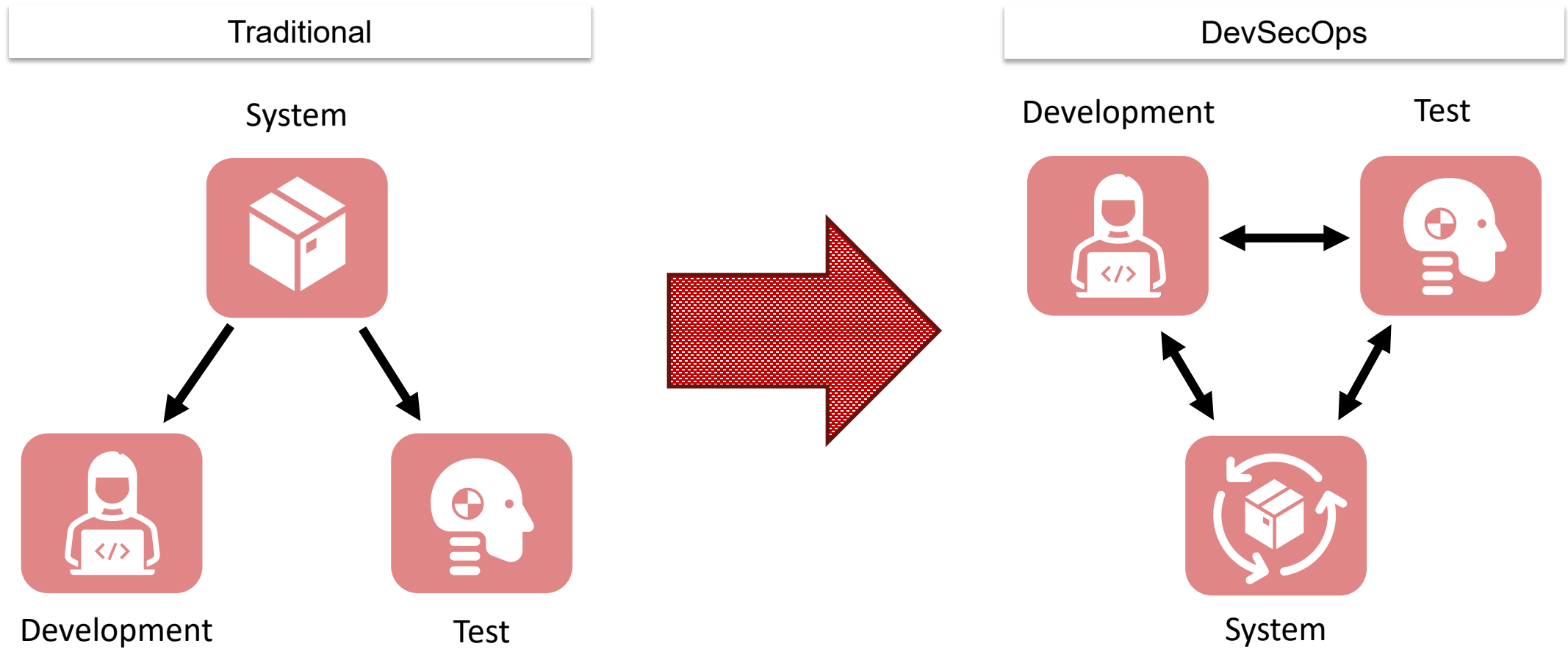


**Toolchain pipelines support continuous implementation, testing and delivery**



**Everyone in the development process is responsible and accountable**

## DevSecOps Expands the Architectural Focus

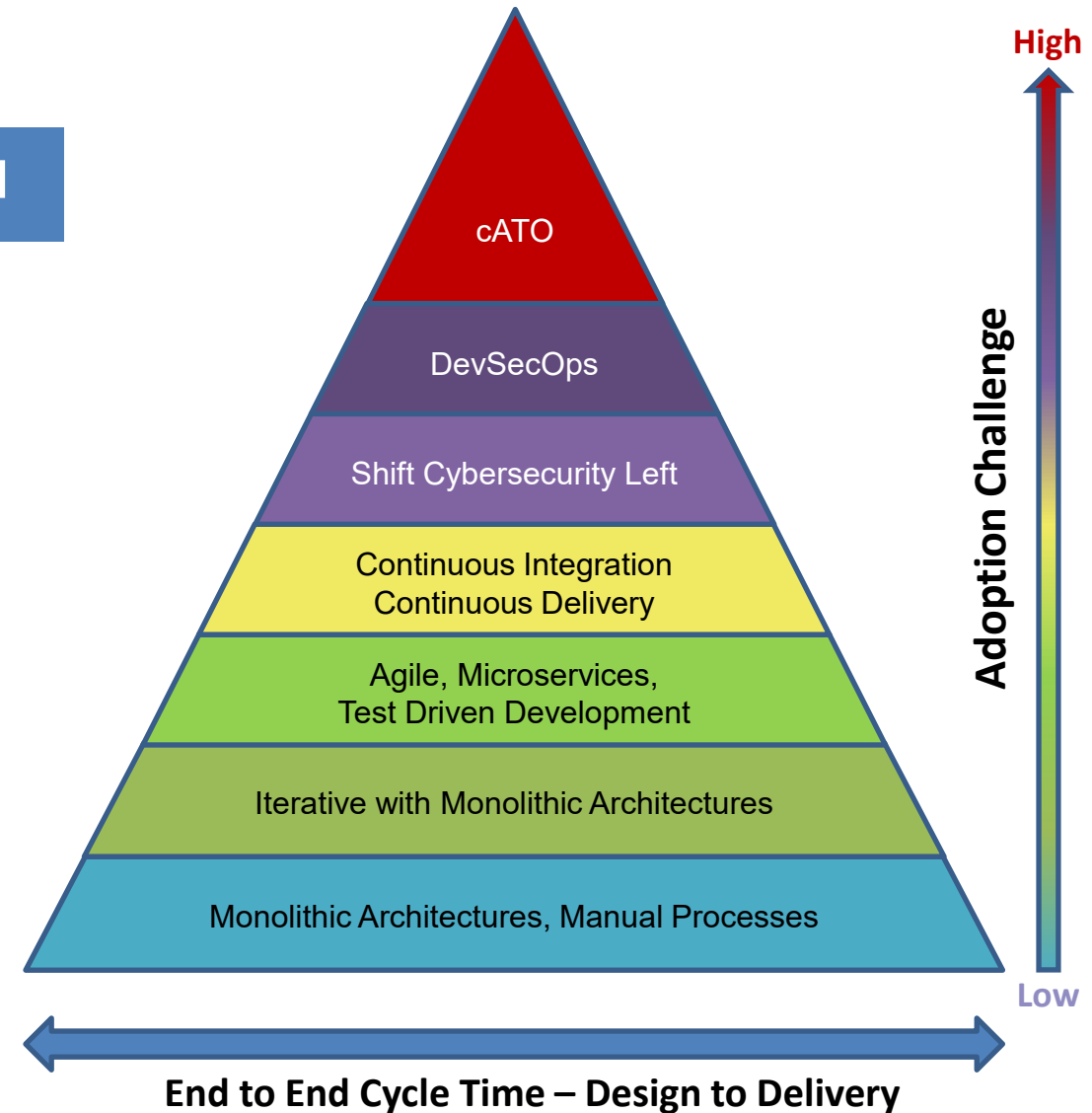


# System Data Analysis and DevSecOps

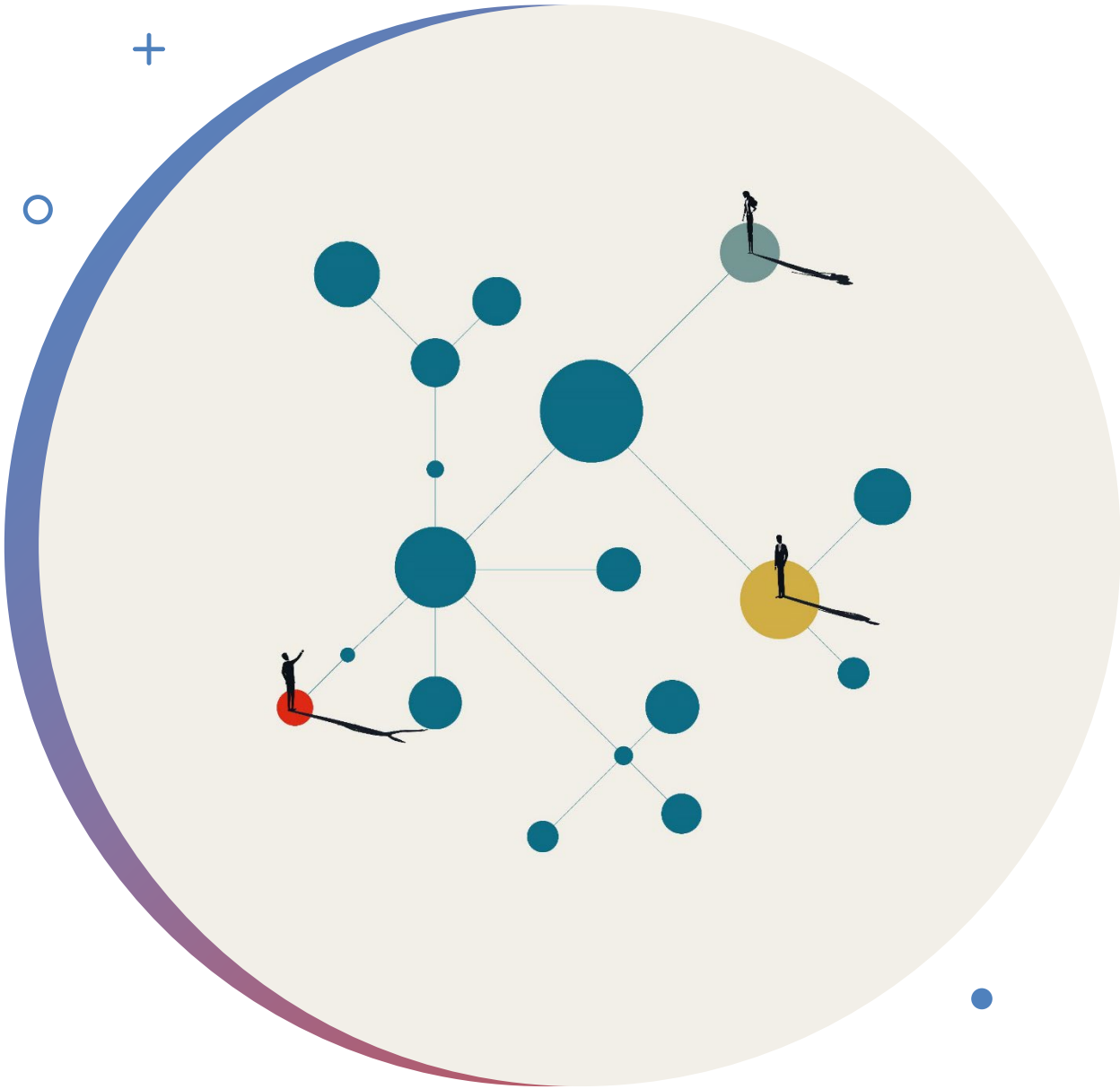
## Building up to cATO

The journey to cATO has already started

- The amalgamation of several other improvements to the way systems are developed feed into cATO
- DevSecOps and Agile maturity are a prerequisite for successful cATO adoption
- Together this provides deployment of resilient capabilities to the customer at the speed of relevance



# **TIPS FOR MIGRATIONS OF LEGACY TO MODERN WITH ELAAD**



# Identify Dependencies



# Start Small



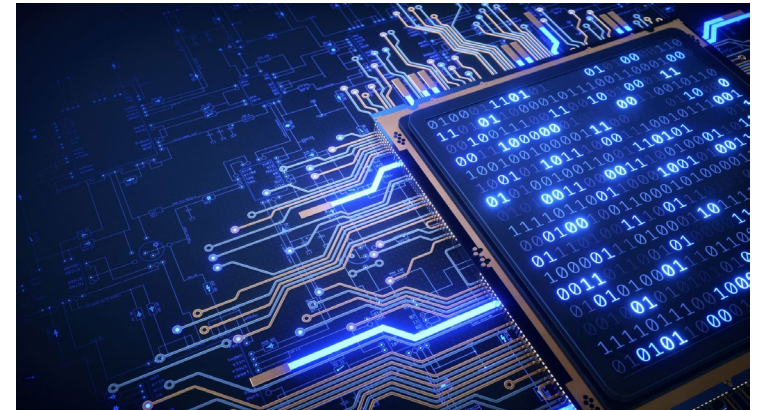
# Automate, Automate, Automate



**Documentation**



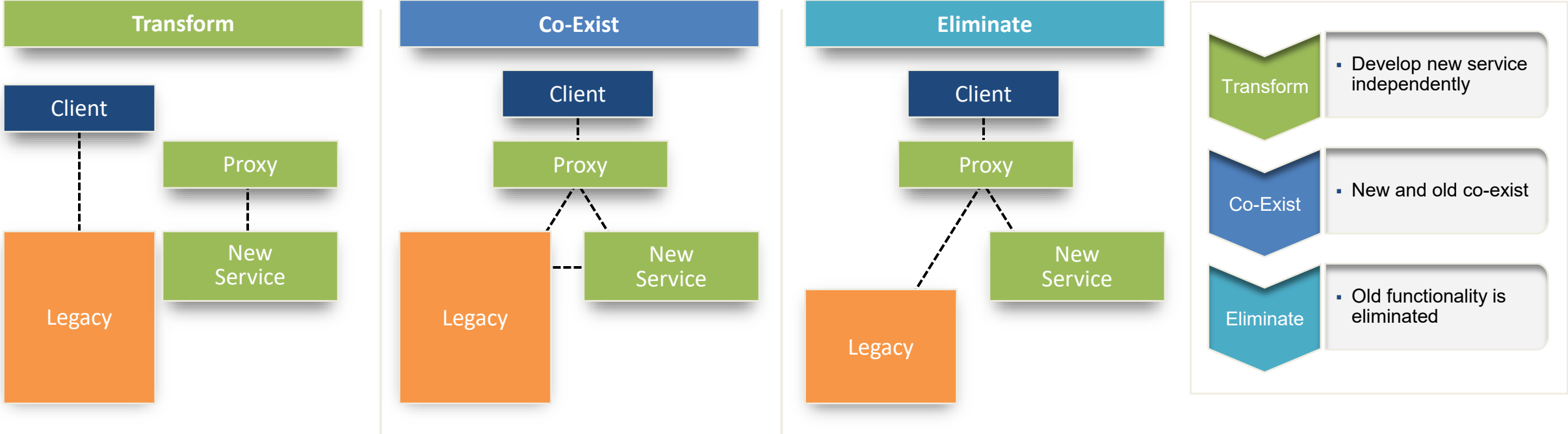
**Security Analysis**



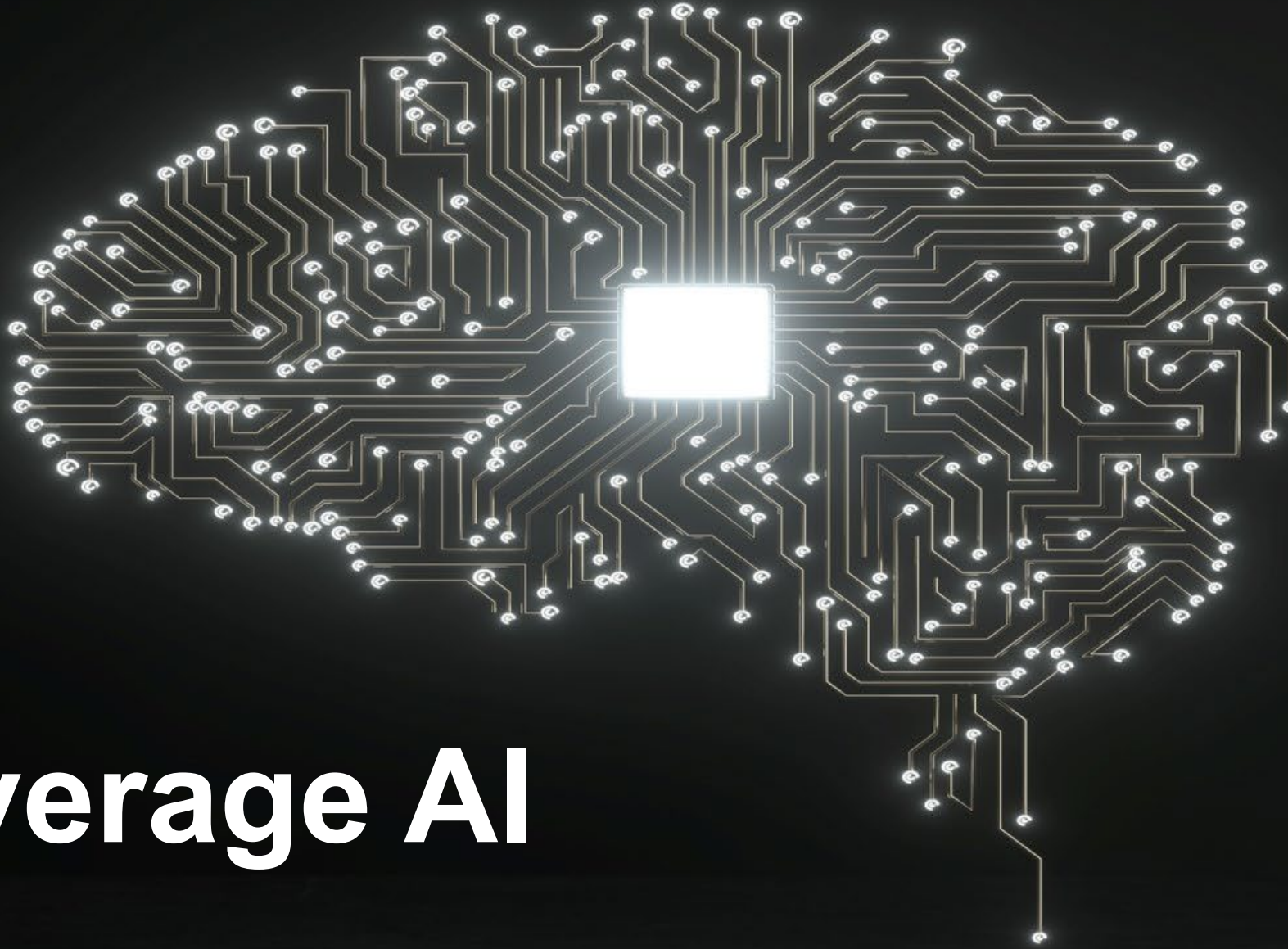
**Additional Testing**

# Lift and Shift

# Strangler Method



**Pattern is repeated until the legacy application is replaced**



# Leverage AI



**New  
Doesn't  
Mean  
Secure**

# **TECH CHANGES IMPACT CULTURE AND VICE VERSA!**

A complex network diagram with numerous nodes and connecting lines, overlaid on a background of colorful bokeh lights. The nodes are represented by small, multi-colored circles (red, blue, yellow, green, purple, white) and are interconnected by a dense web of thin, orange lines. The overall effect is a vibrant, interconnected network structure.

# Build a High-Trust Culture



# Approaching Culture Change



**Culture change involves challenges to perception, investment, usage and acceptance**