

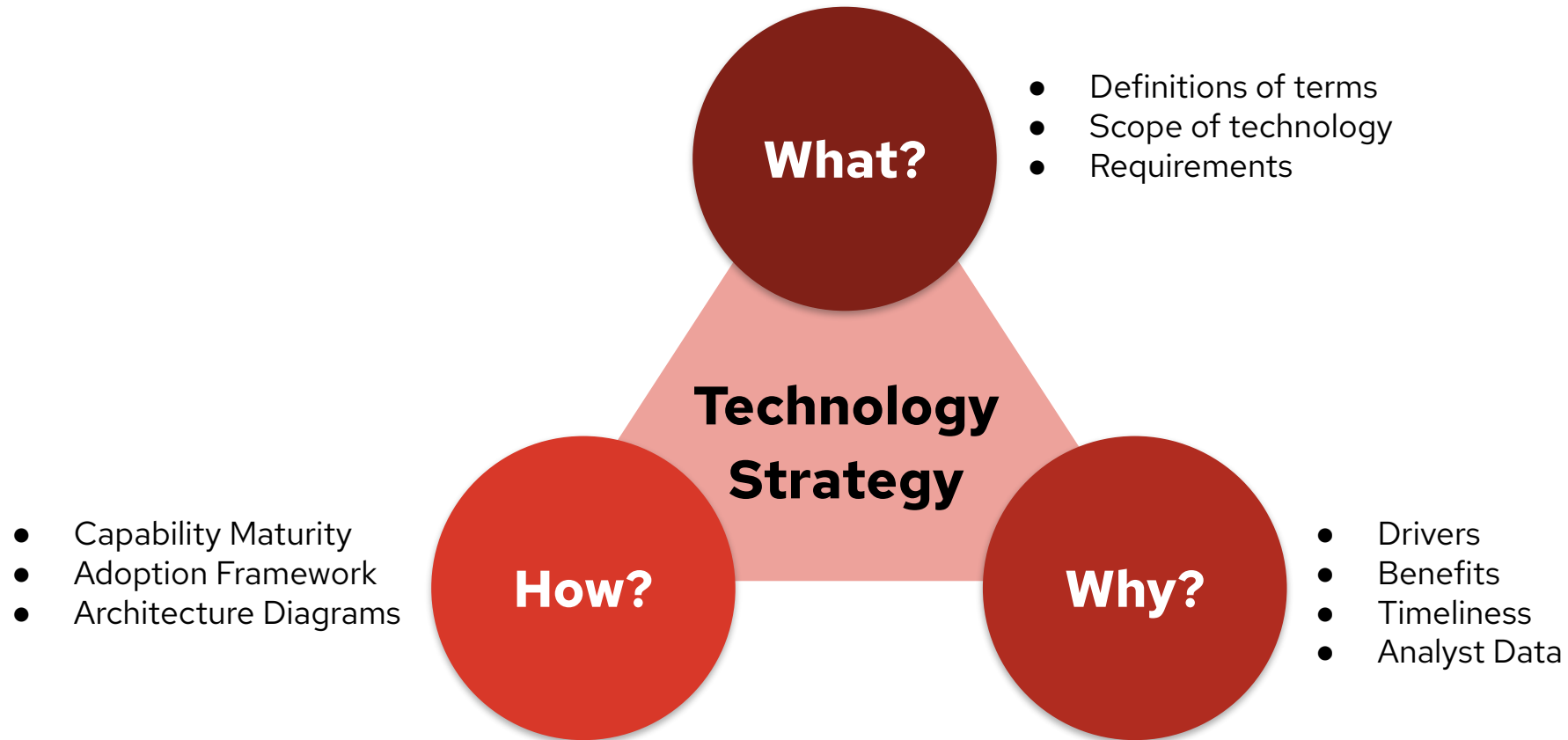
Enterprise Automation

Red Hat Users Group

Brian Dumont

Lt. Principal Solutions Architect

Enterprise Architect Lunch 'n Learn Series



AGENDA

- What is Enterprise Automation?
- Market Observations (Forrester, Gartner)
- Why Enterprise Automation?
- Evolution of Automation
- Automation Capability Maturity Model
- Automation Architecture Framework
- Automation Landscape

What is Enterprise Automation?

Definition

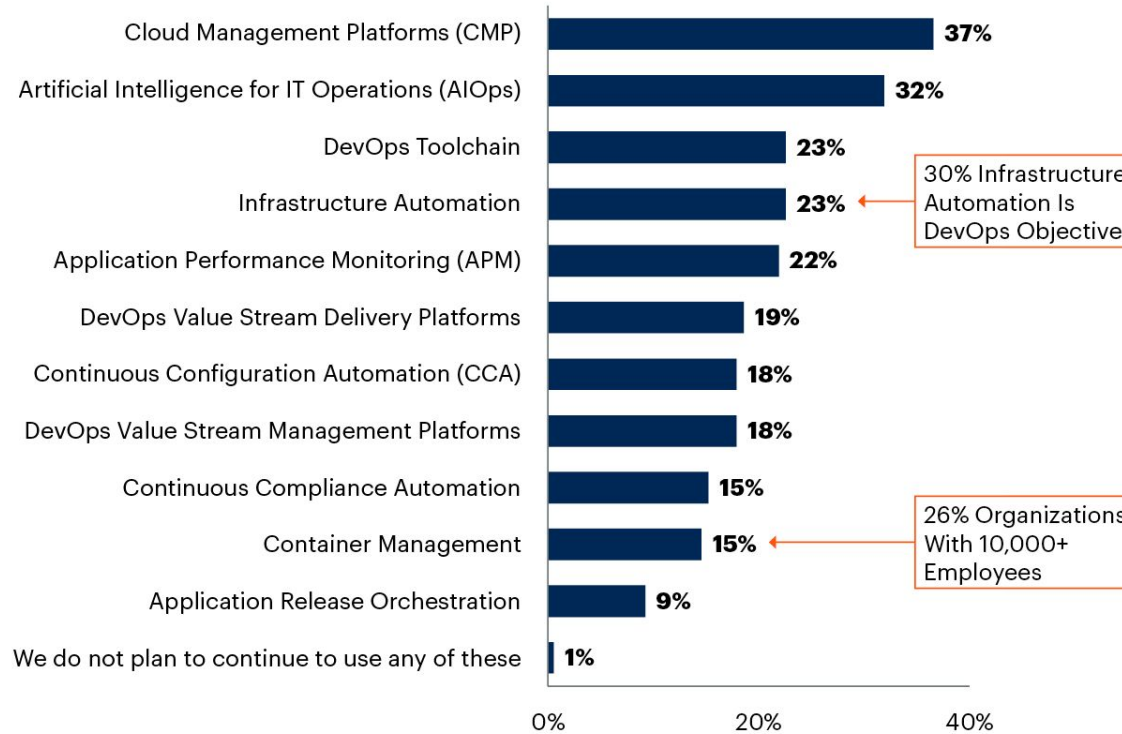
Enterprise Automation is the implementation of **IT Automation** in a **strategic** and **coordinated** fashion **across an enterprise**. IT automation, is the **use of software** to create **repeatable instructions** and **processes** to **replace or reduce human interaction** with IT systems. Automation is key to IT optimization and digital transformation (The Enterprisers Project).

IT Automation Sub-categories

- CI/CD
- GitOps, SecOPS, DevOps
- AIOps
- Software Test Automation
- Infrastructure as Code
- SEIM
- APM
- Robotic Process Automation

Gartner: Market Guide for AIOps Platforms

Organizations' Plans to Continue Using CMP and AIOps Multiple Responses



n = 150 organizations started to use DevOps initiatives in response to COVID-19
Q: And which of these does your organization plan to continue to use?
Source: 2020 Gartner Achieving Business Agility with Automation, Continuous Quality and DevOps
735577_C

Highlights

- Hybrid/Multi cloud driving cloud management as a platform
- AIOps significant focus of existing automation
- Automation distributed among many use cases
- Security and Container Emerging

Gartner Market Observations

- Vendors going to market with a **data-source-agnostic** platform. These products **tend to be generic** and cater to the broadest use cases.
- **Vendors that have the key components**, but **tend to have a restricted set of data sources**. These vendors are **typically focused on one domain** (for example, network, endpoint systems and APM), or are selective about data types like alert streams from other tools. **Such tools tend to have a restricted set of use cases**, targeted at a certain segment of IT operations.
- **Some vendors** with existing monitoring solutions **limit data sources to their own monitoring products** or extend to a limited partner ecosystem. This is again a case where the target audience is limited to those with the right mix of data sources.
- **Open-source projects enable users to assemble their own platforms** by offering tools for data ingest, a big data platform, ML and a visualization layer. End users can **mix and match the components from multiple providers**.

Trends, Design Principles and Approach

- Architectural Trends
- Design Principles
 - Data is King
 - Integration is Key
 - CMDB/Inventory
 - Authentication/Authorization
 - Supply Chain
 - Workflow
 - API
- Approach
 - It takes a village
 - Get a Quick Win

Business Value Highlights

- 498% five-year ROI, 5 months to payback
- \$1.13 million in additional new revenue gained per year
- 68% more productive IT infrastructure management teams
- 68% faster deployment of new storage resources
- 41% more efficient application environment management teams
- 135% more applications developed per year
- 25% more efficient IT security teams
- 53% reduction in unplanned downtime

TABLE 1

Firmographics	Average	Median
Number of employees	14,564	3,000
Number of IT staff	641	150
Number of developers	357	100
Number of employees using IT services	14,528	3,000
Number of External Customers	2,057,541	6,500
Number of business applications	101	100
Number of business applications, containerized	18	2
Company revenue	\$9,028B	\$708.5M
Countries	US (6), Australia, UK, Brazil	
Industries	Manufacturing (3), Healthcare (2), IT, Telecommunication, Government, Finance	

Source: IDC, 2019

Why Enterprise Automation?

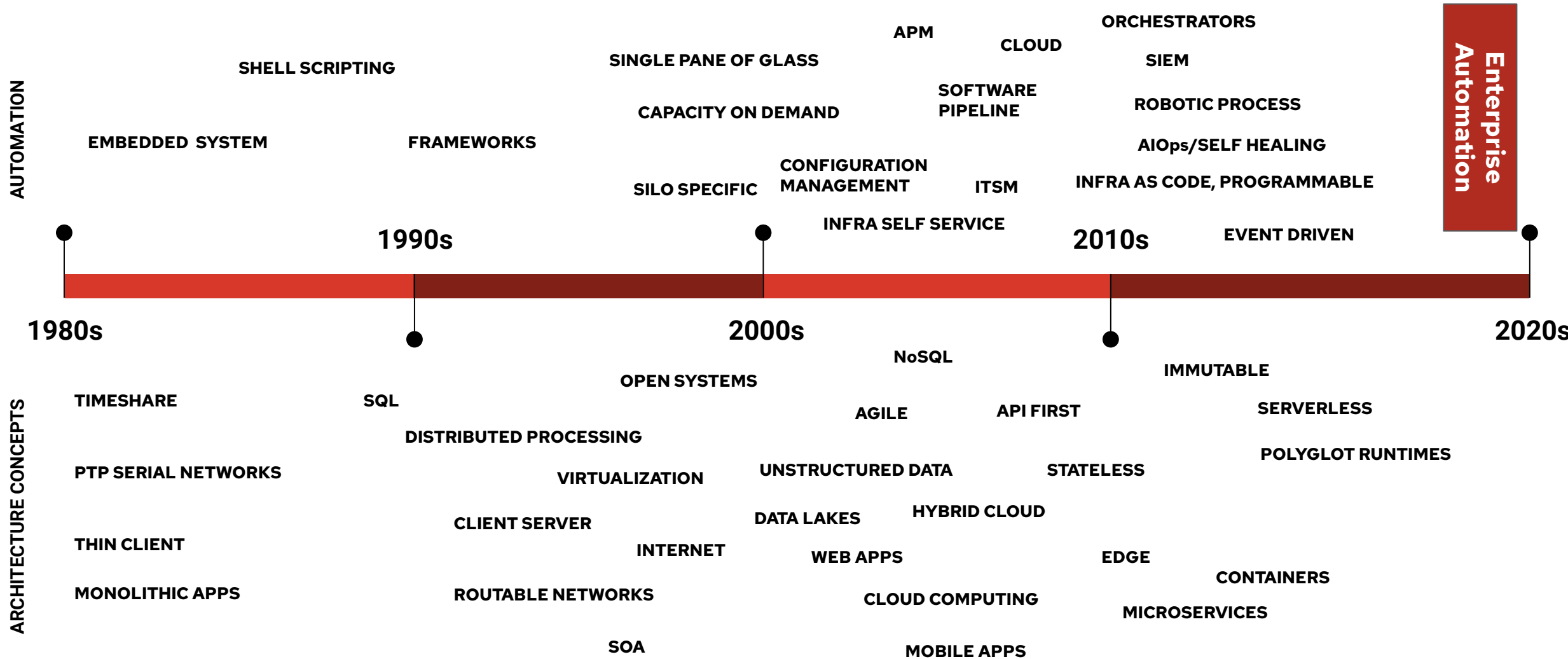
Operational Factors

- Cost - Eliminate Manual Effort -> Provisioning, Patching, Updating
- Cost - Reduce Incidents -> Config Management, Reduced Effort
- Cost - Staff -> Training & Enablement
- Cost - Software Licensing -> Duplicate tools

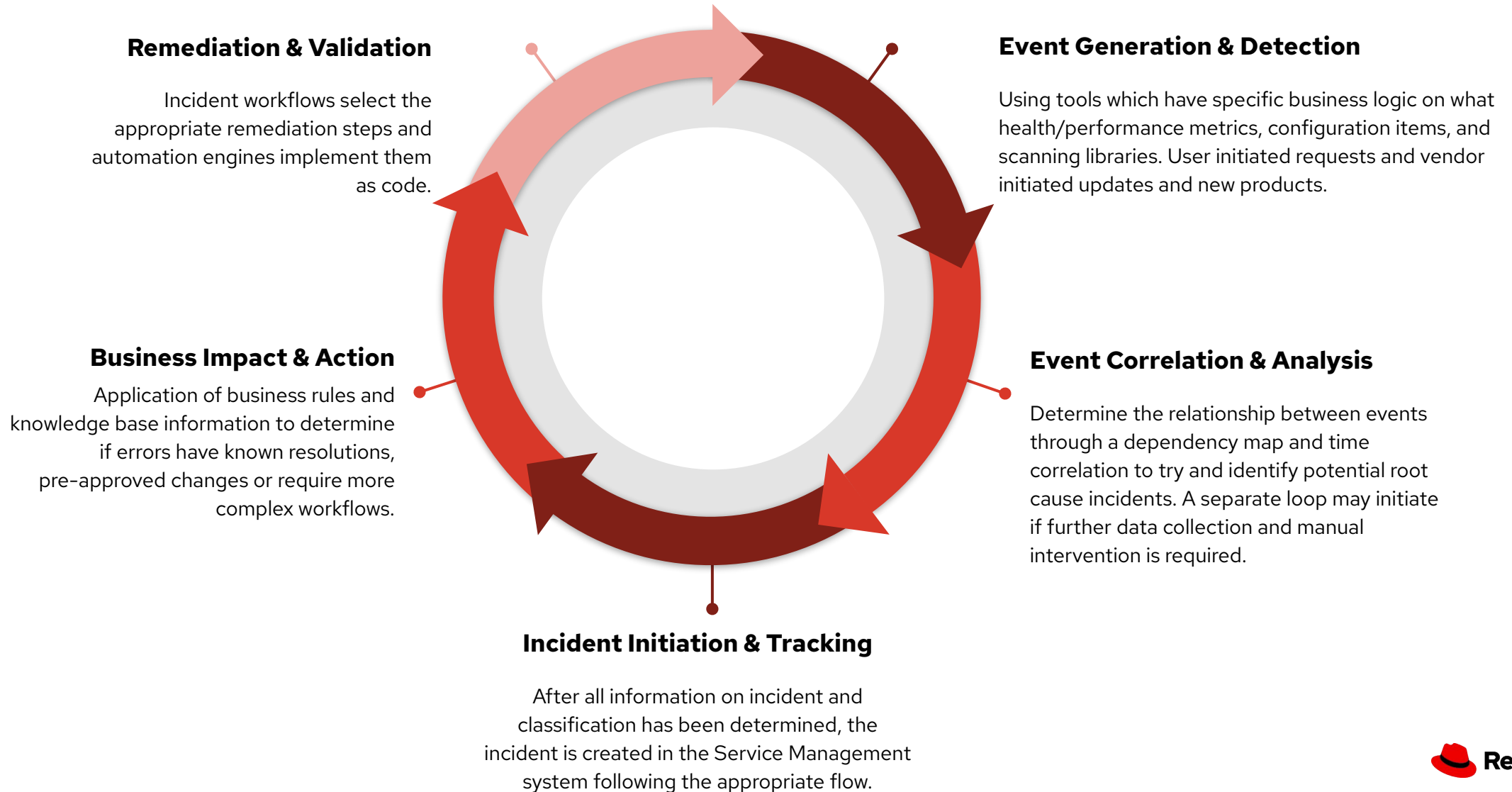
Strategic Factors

- Quality - Less Incidents -> Higher Availability
- Quality - Faster Response/Remediation -> Higher Availability
- Compliance - Reduced Vulnerabilities -> Config Management, Faster Updating
- Compliance - Reduce Risk -> Credential Management, Change Management
- Growth - Reduced Time to Market -> Provisioning, Updating
- Growth - Enable Agile Development -> Self Service, Automated Pipeline
- Growth - Improve Service Quality -> Less Incidents, Better Testing
- Assets - Staff Retention -> Focus on more interesting work
- Assets - Inventory Optimization -> Single Source of Truth CMDB

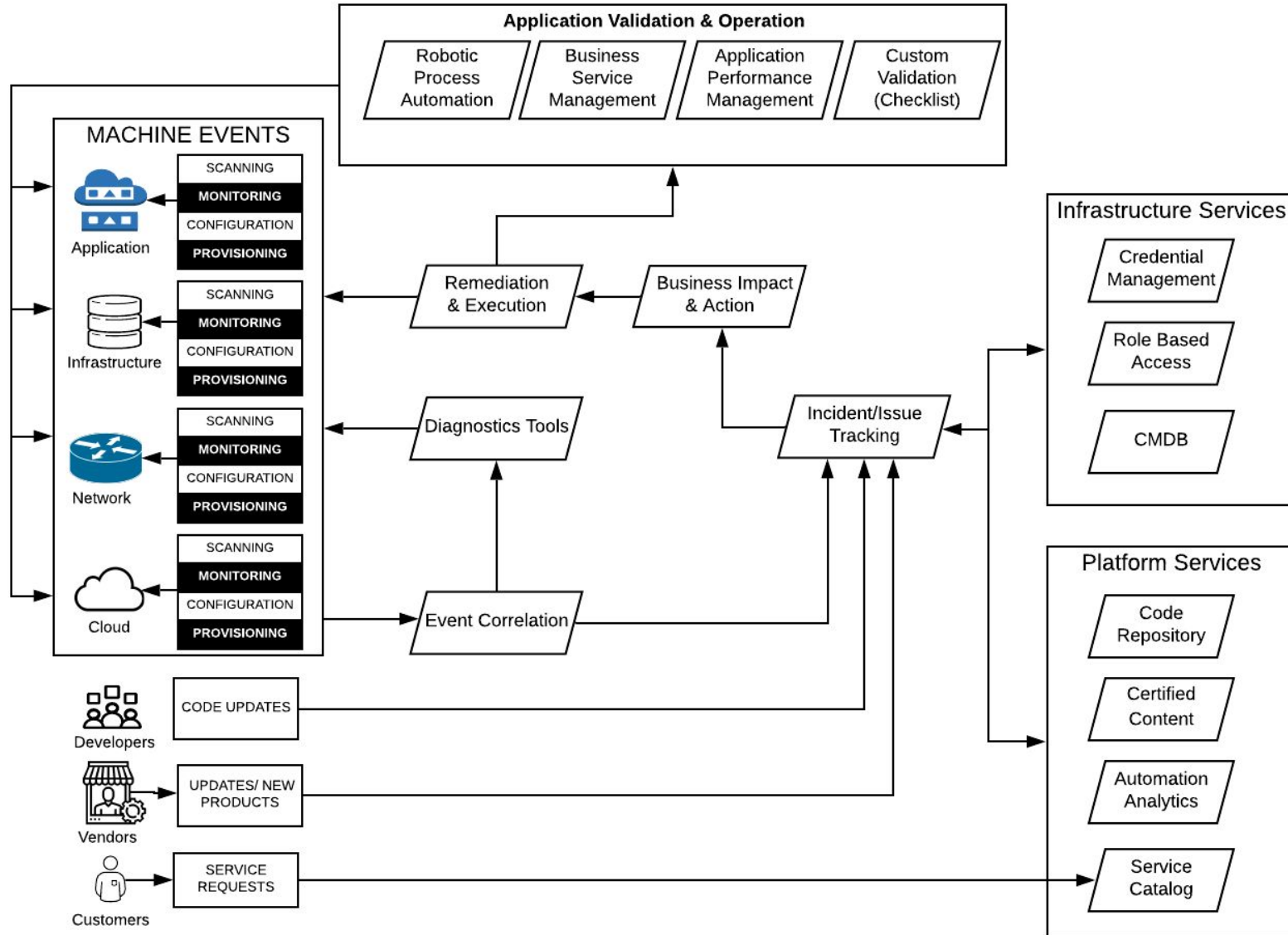
Evolution of Automation



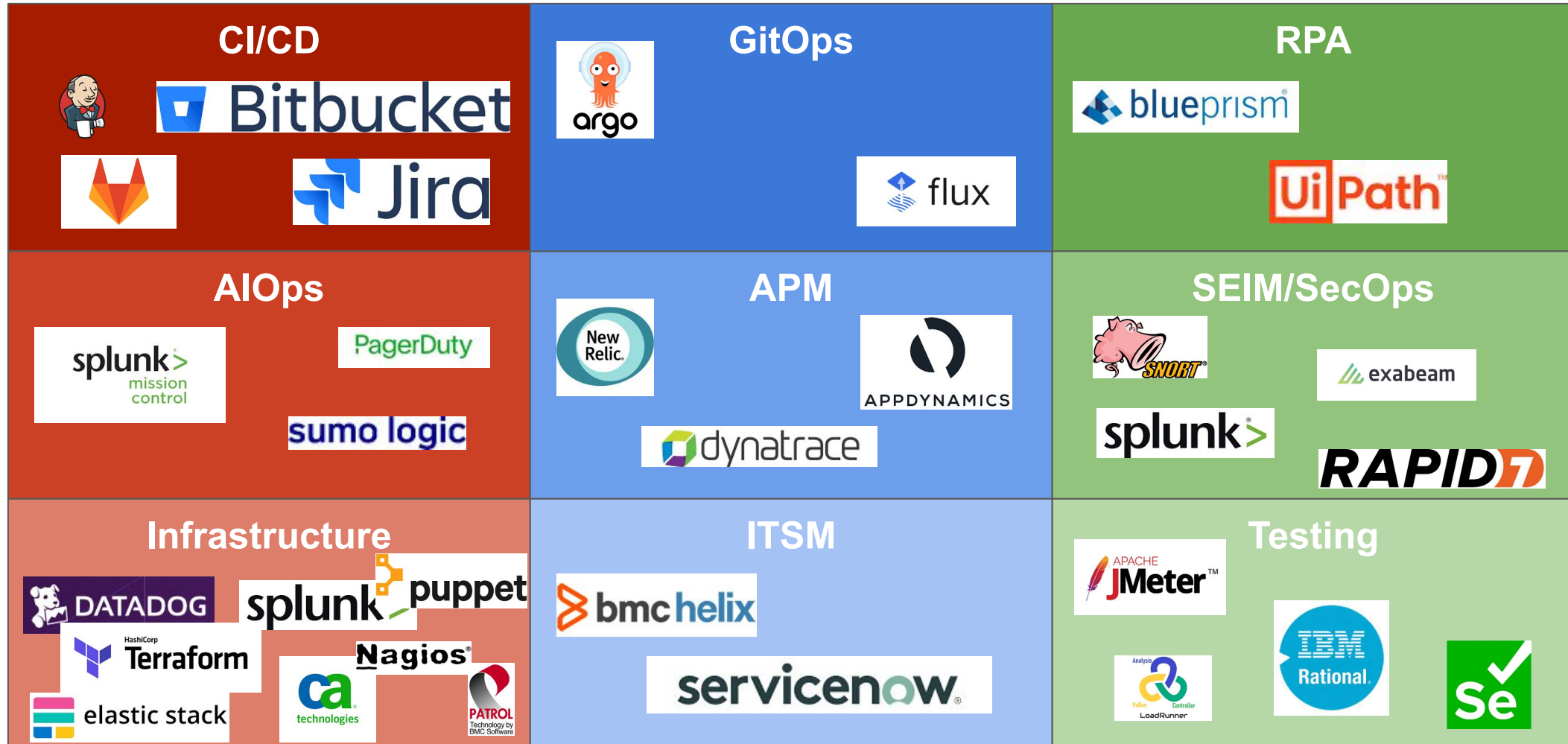
Enterprise Automation Framework



Architecture Flow Diagram



Automation Landscape



Automation Landscape

Development

Production

Remediation /Action /Validation

- Provisioning
- Cnfg Management
- Pipeline Automation
- Robotic Process Automation

Tracking/ Auditing

- ITSM
- Ticketing/Bug Tracking

Impact & Action

- Machine Learning
- Software Testing

Correlation Analysis

- Logging

Event Generation

- Monitoring
- APM
- Service Catalog

Automation Capability Maturity Model

AdHoc

- **(Strategy)** Individual or small group defined
- **(Process)** Partial processes
- **(Process)** Little or no QA/Test
- **(Technology)** Tool Silo or Vendor Embedded Tools (e.g scripts)

Reactive

- **(Strategy)** Targeted at specific pain areas
- **(Strategy)** Project driven
- **(Technology)** Includes tool evaluation and acquisition

Systematic

- **(Strategy)** Targets and defined metrics
- **(Strategy)** Usually defined within one use case
- **(Strategy)** Road maps
- **(People)** Specialist driven

Strategic

- **(Strategy)** Long term roadmap in action
- **(Strategy)** Organization wide driven
- **(People)** Competency centrally driven
- **(Technology)** Portfolio of platforms and tools
- **(Technology)** Enterprise architecture and integration defined

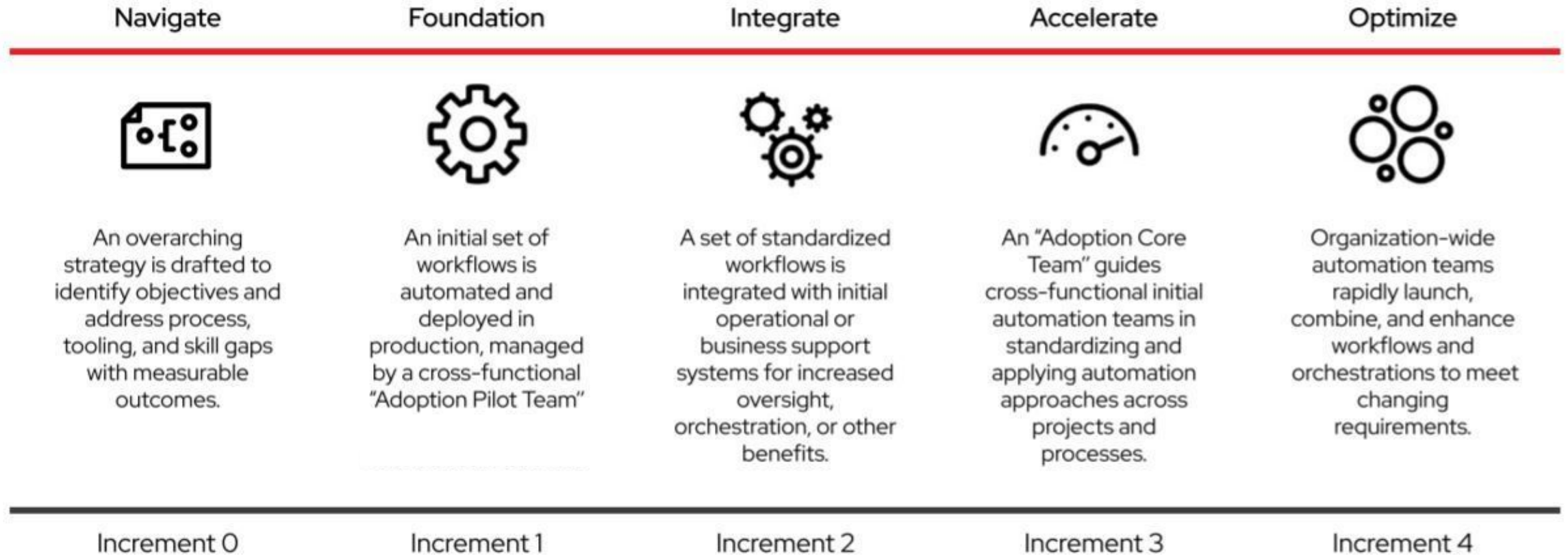
Optimized

- **(Strategy)** Leverage and incorporate new technology
- **(Process)** Integrated into workload lifecycle
- **(Process)** Advanced automation development (AIOps, Self Healing, CI/CD)
-

Maturity Competencies

- **Strategy** - a long term plan for development and implementation of automation
- **Process** - complexity of process and completeness
- **People** - the create an asset that can optimize automation
- **Technology** - the implementation and management of technology capability

Enterprise Automation Adoption Journey



Summary

- Increasing infrastructure/development complexity, increasing tool sprawl
- Operational and Strategic value delivered through Cost, Agility, Compliance, Growth and Asset optimization
- Architecture of open data sources and integration
- Inventory you current capabilities in event generation/detection, correlation/analysis, incident ticketing/tracking, business impact/action, remediation/validation
- Understand you current maturity enterprise wide and by business unit (Adhoc, Reactive, Systematic, Strategic and Optimized)
- Develop the action plan to mature capabilities based on specific areas of need but using the architectural principles of open and integrated.

Thank you