A Teaming Approach to Scaled Adoption

GLOBAL PRODUCT DATA
INTEROPERABILITY
SUMMIT 2023

BOEING ELYSIUM NORTHROP GRUMMAN Parker PDES, Inc.®
Connecting the Digital Enterprise

Stephanie Dinkins
Joan Dodson, Ph.D.

Stephanie Dinkins, Northrop Grumman Corporation

- Technical Fellow, Senior Systems Engineering Manager, and Digital Transformation leader for the DT Office

- Senior Systems Engineering Manager with 20+ years experience in people leadership, project management, and engineering

- 7+ years leading R&D projects and managing innovation portfolios

- Sector Invention of the Year Award 2019

- Connector leadership style envisions cross-domain innovations and brings together the right talent to make it happen

- 10 years with Search & Rescue in Colorado

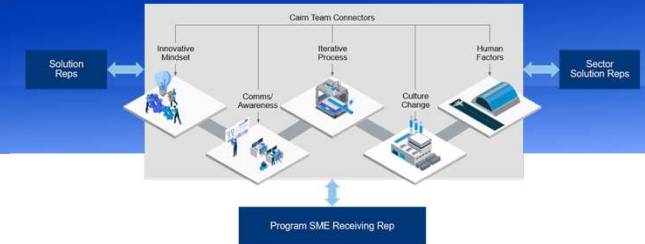## Joan Dodson, Ph.D., Northrop Grumman Corporation

- Technical Fellow, Engineer of the Year 2021+

- Senior Principal Human Factors Engineer on the Northrop Grumman User Experience (UX) Team

- 10 years experience researching and evaluating interfaces for mission-critical applications.

- Prior to Northrop Grumman, University of Alabama as a Professor cross-listed in Psychology and Engineering

- Currently Adjunct Professor at University of Alabama lecturing undergraduate and graduate classes in Human Factor Engineering

- Her research interests include bridging the gap between cognitive science research and interface design in Situation Awareness, Cognitive Overload and Fatigue, and Trust and Autonomy issues.

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023

- Our Goal is to understand key factors for adoption at scale

- Our talk will:

  – Identify innovative mindset beliefs and practices

  – Identify common pitfalls that derail adoption

  – Identify successful adoption across organizations

SUMMIT 2023

- Turning the 'Valley of Death' to green

- A teaming approach

- The cairn navigation framework

- Human factors and change management theory

- Scenarios and actionable insights

- Path forward

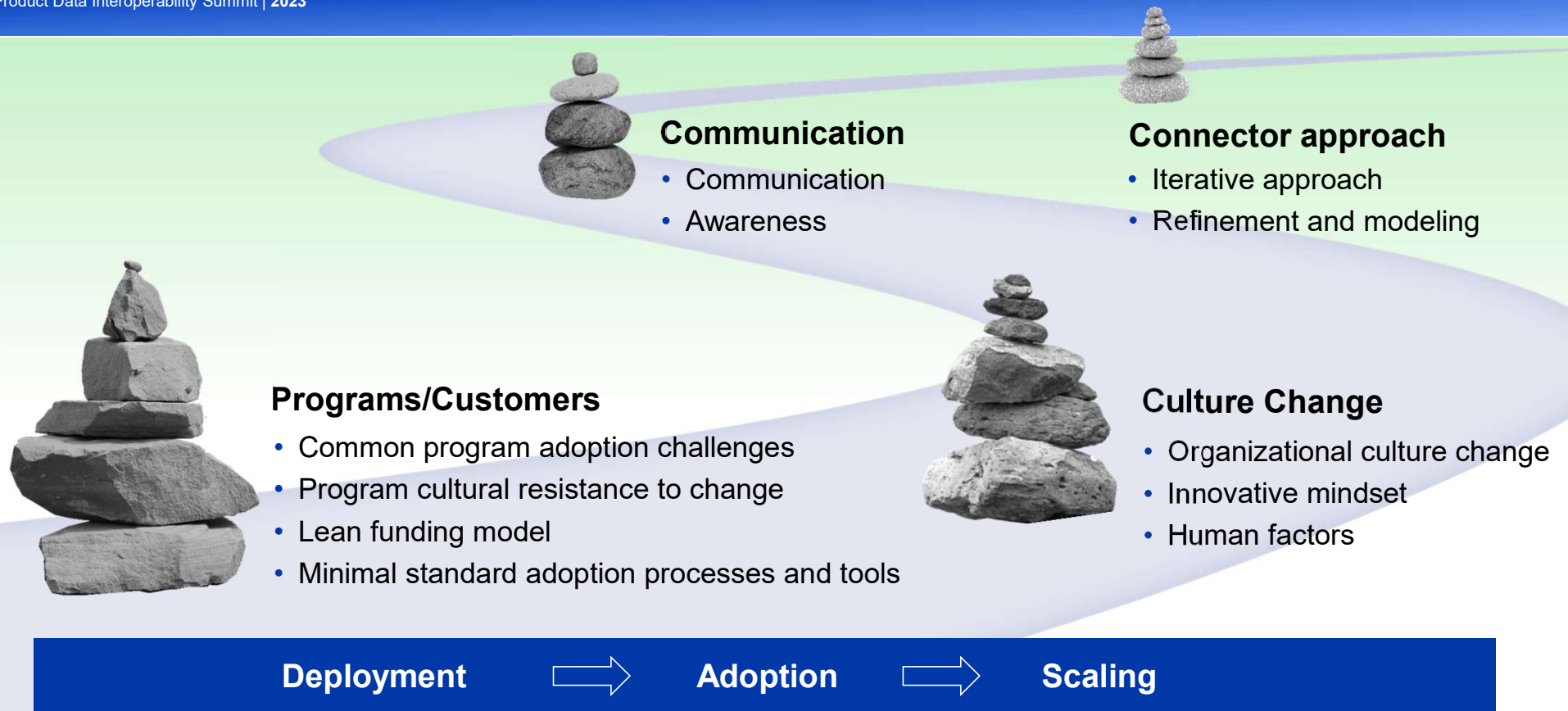# What is a Cairn?

Cairn in The Valley of Fire, Utah

Cairns in Volcanoes National Park, Hawai'i

A Cairn is a pile of stones that serve as a trail marker to help keep hikers on the right trail.
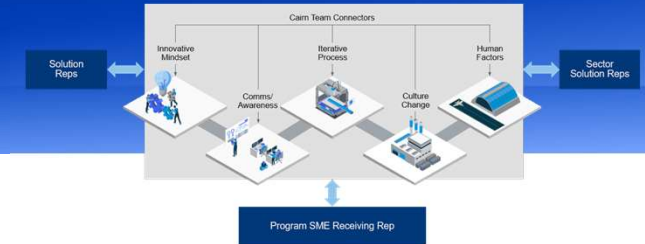
Turning the Technology's 'Valley of Death' to Green

Communication
- Communication
- Awareness

Connector approach
- Iterative approach
- Refinement and modeling

Programs/Customers
- Common program adoption challenges
- Program cultural resistance to change
- Lean funding model
- Minimal standard adoption processes and tools

Culture Change
- Organizational culture change
- Innovative mindset
- Human factors

Deployment ⟹ **Adoption** ⟹ **Scaling**

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT **2023**

Benefits of Cairn Connector Framework
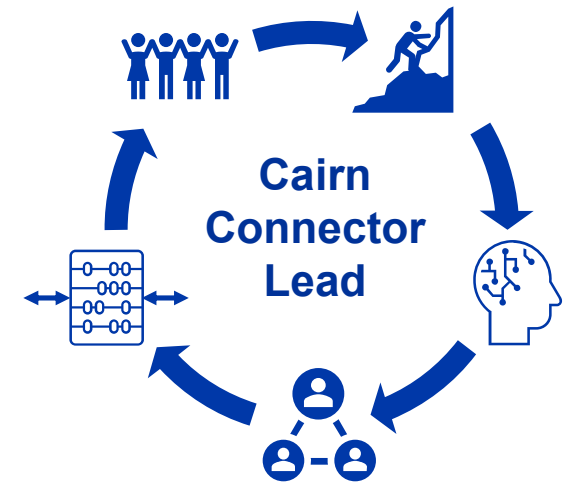
- Cairn framework incorporates key **guideposts** to help teams **navigate** the valley successfully

- **Reduces** time to adoption and scaling

- Enables **collaboration** for a successful **transformation**

- Address resistance, increase engagement at all levels

- Considers workflows, **culture, change** management
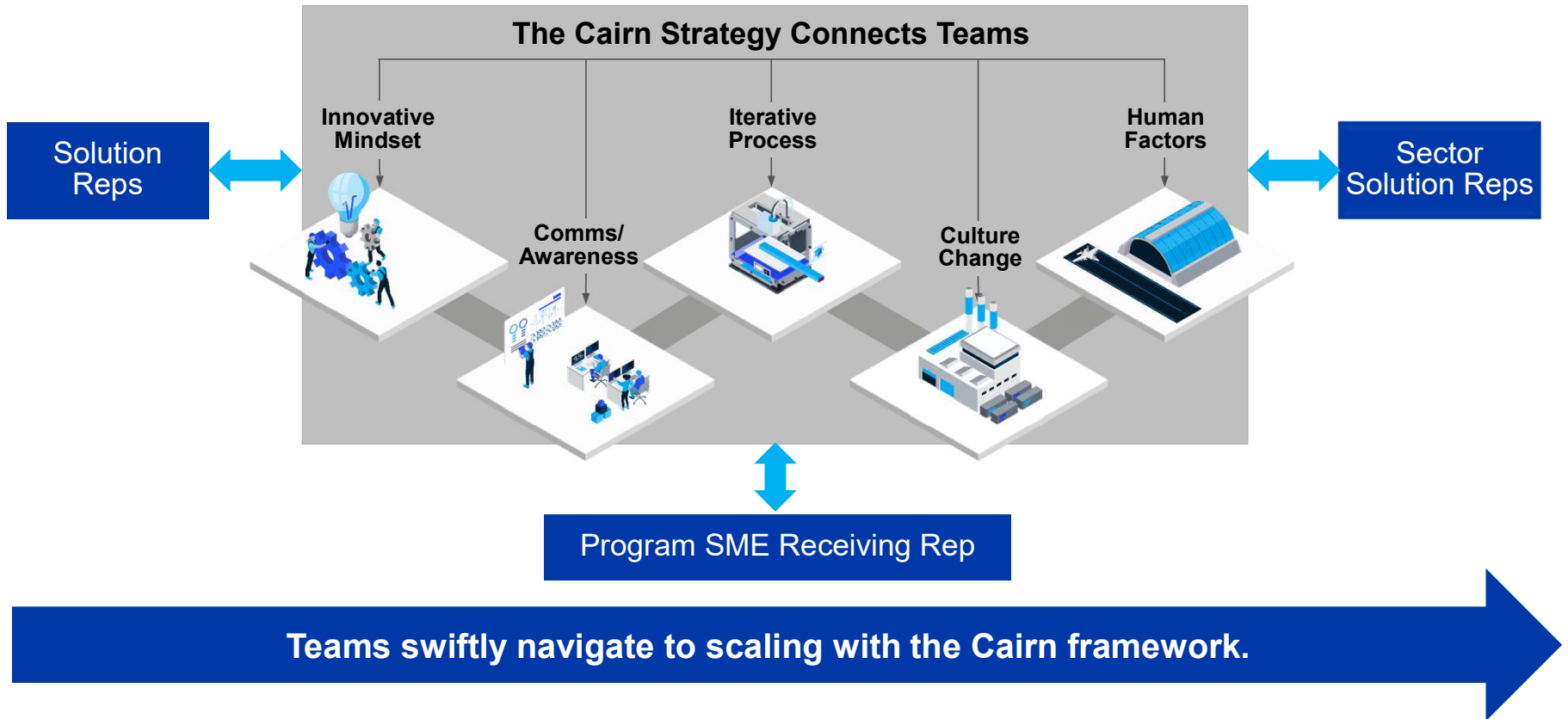
The Cairn Connector Strategy
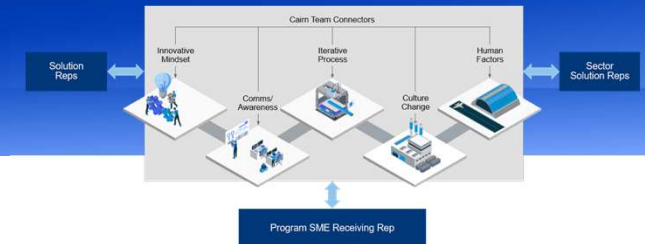
- The Cairn **prioritizes people and program** connectivity

- Measurable adoption **guideposts**

- **Innovative mindsets** increases adoption

- **Team-centric** focus builds **trust & safety to change**

- Cairn **teams** are **elastic**

- **Early** and active user engagement

Cairn Connector Lead

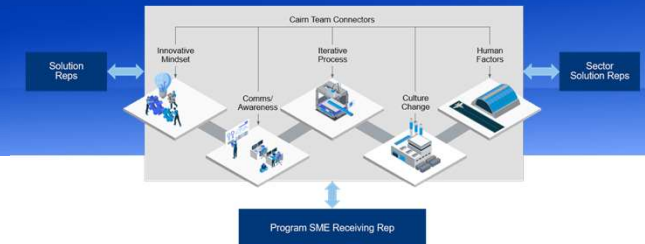## People Connect and Technology Enables.

The Cairn Framework

The Cairn Strategy Connects Teams

Solution Reps

Innovative Mindset

Comms/ Awareness

Iterative Process

Culture Change

Human Factors

Sector Solution Reps

Program SME Receiving Rep

Teams swiftly navigate to scaling with the Cairn framework.

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023

Innovative Mindset

- Team trust and integrity

- Failure isn't scary

- Remove territoriality

- Load balance

- Make time to brainstorm

- Measure and communicate successes, failures, and lessons learned
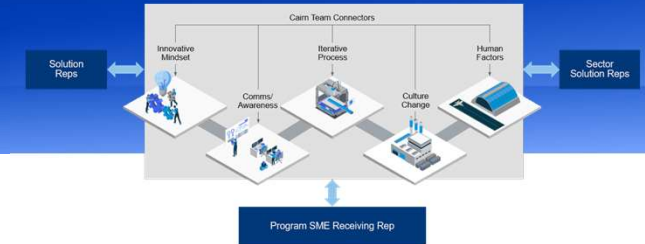
- Recognize and Reward innovation

* Prior Work:

- The Innovative Mindset: Eight Essential Steps to Transform any industry, Lorraine Marchand

- The Innovation Mindset, Jennifer Kenny

- The Innovator's Dilemma, Clayton Christensen

- Ted Talks – Bruce McCabe, Sir Ken Robinson, and others
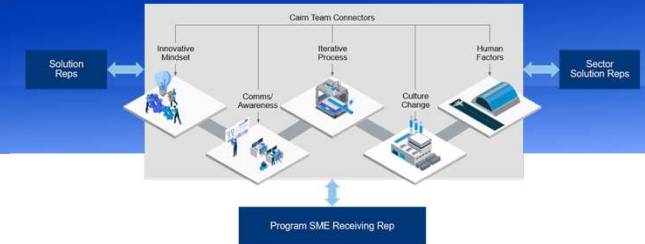
Comms & Awareness: Change Management

- Motivate and engage users

- Address human behavioral factors

- Encourage adoption of new tools

- Build trust, provide support systems
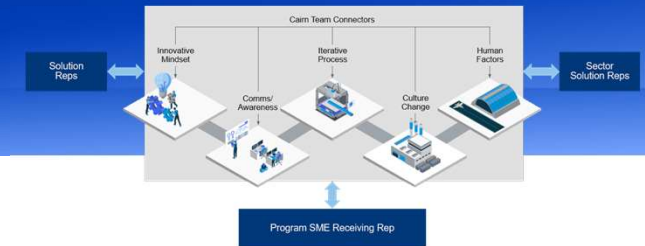
Iterative Engineering & Maturity

- Iterative engineering

- Iterative development

- Fail fast incorporate feedback

- Flexible collaborative process

- Must have the right team!

- Leadership adoption of agile development lifecycle

- Strategically align funding to mature MVPs to product

Change Methodology

- Psychology of change
  - 1/3 people are okay with change

- Address human behavioral factors
  - Human brain is wired to resist most change

- Motivate and engage users to implement, transition and minimize disruption
  - What is in it for me?

- Train employees
  - Best training methodology

Human Factors
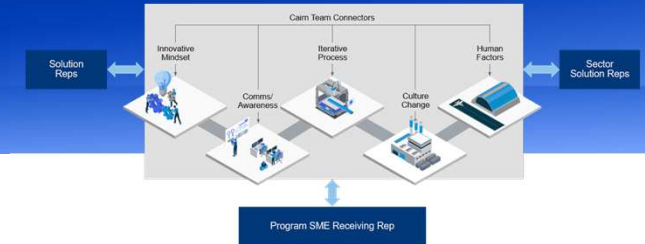
- Methodology integrates complementary approaches:

  - Change management theory

  - Understand reactions to change

  - Mitigate resistance, increase adoption

The Cairn Framework

The Cairn Strategy Connects Teams

Solution Reps

Innovative Mindset

Comms/Awareness

Iterative Process

Culture Change

Human Factors

Sector Solution Reps

Program SME Receiving Rep

Real Examples and Insights

Scenario #1:
Transitioned our organization's agile workflow tools to a more digitally connected workflow tool suite

- Addressed **culture change** early to get buy-in

- Innovative **mindset** and high trust

- Rolled out changes in small **increments**

- Provided multiple forms of **training and learning** opportunities

- Led to **scaled** usage in other organizations

Scenario #2:
Deployed an early pilot of a data analytics tool to a small program

- **Resistance to change** was high and we failed to achieve buy-in by incorporating receiver's input early

- Failed to address their fear of change **soon enough**

- We were **successful in performing iterative deployments,** but had **limited resources** for connecting with team throughout the transition

- Offered 1-hour virtual training session, but users **required additional help**

Recognizing some key factors in successfully implementing a digital transformation across organizations.

SUMMIT 2023

Path Forward

- Monitor and refine our methodology, metrics, continuing work

- Refining approaches with teams for program success

- Continuing work with project teams

- Ensuring sustained program adoption over time

The Cairn Strategy Connects Teams

Solution Reps

Innovative Mindset

Iterative Process

Human Factors

Sector Solution Reps

Comms/ Awareness

Culture Change

Program SME Receiving Rep

Thank you

Law of Diffusion of Innovations

Global Product Data Interoperability Summit | **2023**

Market Share is
Area Under Line

Innovators	Early Adopters	Early Majority	Late Majority	Laggards
2.5%	**13.5%**	**34%**	**34%**	**16%**

Highest ⟵————— **Willingness to Use New Solutions** —————⟶ **Lowest**

(Rodgers, 1962)

Approved for Public Release; NG23-1914; ©2023 Northrop Grumman Systems Corporation

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT **2023**

- Creates easier faster adoption
- For both traditional siloed and model-based strategies organizations

Teaming Strategy

Iterative Engineering

Change Management

Human Factors

GLOBAL PRODUCT DATA INTEROPERABILITY SUMMIT 2023