

Singapore

17-19 July 2017



Building Networks of High-Performing Teams using Known Stable Interfaces



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Building Networks
of High-Performing
Teams using
Known Stable Interfaces



Chris "Deuce" Alexander

- F-14 Tomcat RIO & Foreign Area Officer (17 years)
- Strategic & Operational Planner
- Former CRM Instructor
- Certified agile coach & trainer
- Co-Founder, AGLX Consulting
- Web developer



Teams



Team Controlled

- Trust and sense of purpose
- Clear on how to work together
- Understanding of team and individual performance goals
- Disagreement viewed as good and conflict is managed
- Clear, Defined Roles and Responsibilities
- Solid Relationships and Communication
- Cooperative Relationships
- Balanced Participation
- Mutual Respect
- Effective Working Procedures
- Creativity
- Openness to New Ideas
- Commitment
- Collaborative Climate
- Standards of Excellence

- Everybody is working toward the same goals
- Team members actively diffuse and remove tension
- Team engages in extensive discussion
- Team makes natural decisions when agreed
- Each Team member carries own weight
- Building on Diversity
- Operate like a strong family
- Deal with conflict openly and transparently
- Build on differences, leverage knowledge of outsiders and rookies

High-Performing Teams in Popular Media

Characteristics

Organization Controlled

- Common Purpose and Values
- Accepted Leadership
- Empowerment
- Optimal Productivity
- Recognition and Appreciation
- Engaged / Strong Leadership
- Positive Atmosphere
- Clear and Common Goals
- Sense of Purpose
- Elevating Goals
- Results Driven Structure
- External Support / Recognition
- Principled Leadership
- Focus on Results
- Effective Working Procedures

Characteristics

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- Balanced Participation
- Mutual Respect
- Effective Working Procedures
- Creativity
- Openness to New Ideas
- Commitment
- Collaborative Climate
- Standards of Excellence
- Unselfishness
- Valued Diversity
- Coordinative Relationship

Behaviors

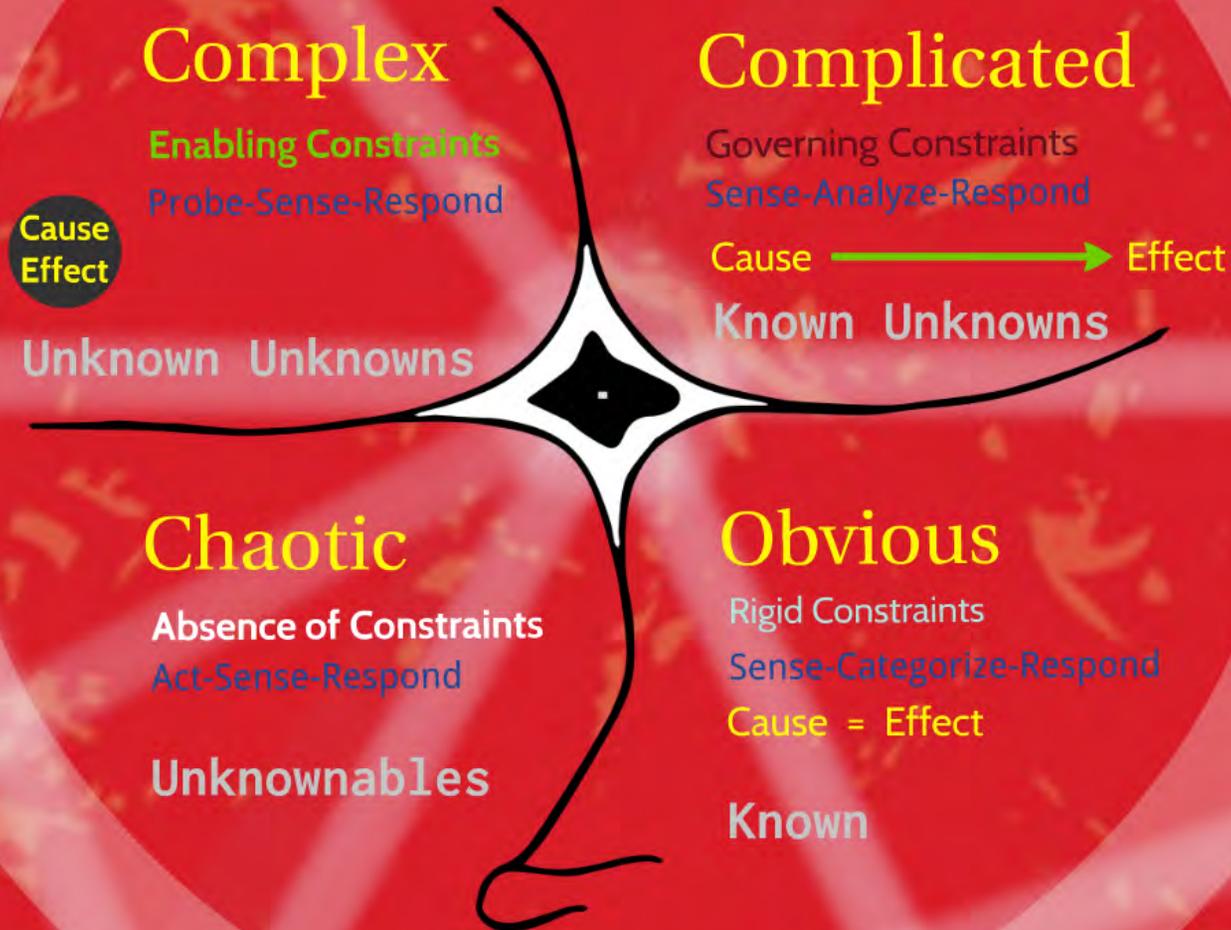
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Skills

- Shared Leadership
- Team-first Attitude
- Excellent Communication
- Effective Decision-Making
- Flexibility and Adaptability
- Continuous Learning
- Emotional Regulation
- Effective Listening

Cynefin

Dave Snowden, 1999
A Sense-making framework



Complex

Resilience
 Organizing to Learn
 Management by learning
 Interdependent work
 Emergent Practice
 Patterns
 Multiple Parallel Safe-Fail
 Vector Goals
 Anthro-Complexity (CAS)
 STICC
 Skunk Works
 Diversity
 Crews
 Sense-making
 Heuristics

Complicated

Resilience
 Scrum
 Good Practice
 Expert advice and analysis
 Scrum
 Kanban
 Systems Thinking

Chaotic

Novel Practice
 No Patterns
 Dictatorship
 Directive Decision-Making
 Crisis Management
 Innovation

Obvious

Best Practice / SOPs
 Command and Control
 Predictable, Repeatable Outcomes
 Management by Objectives
 Systems Thinking
 Process Enforcement
 Low Task Interdependency
 Kanban
 Waterfall Project Management
 Six Sigma
 Checklists

← Unordered Systems

Ordered Systems →



OODA

EMPATHY

DECISION MAKING

ASSERTIVENESS

RELUCTANCE TO SIMPLIFY

SENSITIVITY TO OPERATIONS

MISSION ANALYSIS

COMMUNICATION

LEADERSHIP

COMMITMENT TO RESILIENCE

ADAPTABILITY

DEFERENCE TO EXPERTISE

SITUATIONAL AWARENESS

PREOCCUPATION WITH FAILURE

Probe-Sense-Respond

D-A-OO

Sense-Analyze-Respond

OO-D-A

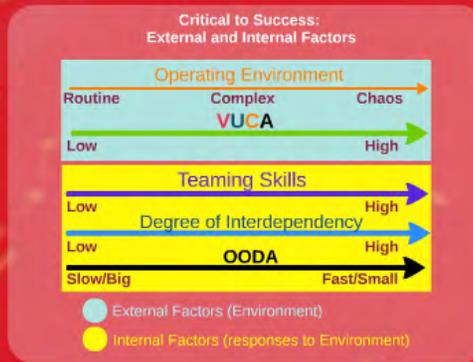
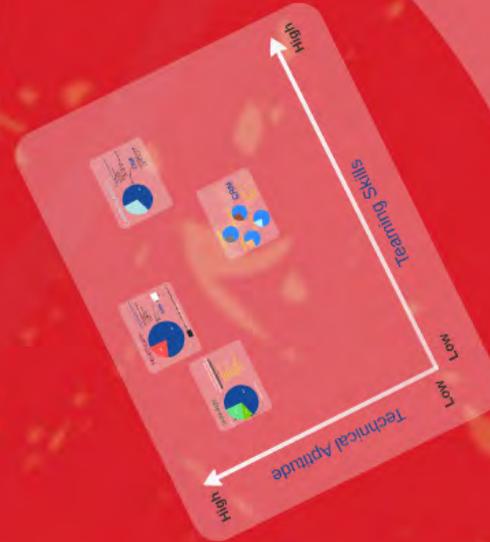
Act-Sense-Respond

A-OO-D

Sense-Categorize-Respond

OO-D-A

"The Mindset of Scrum"



Socio-Technical System: People working in teams with technology



High

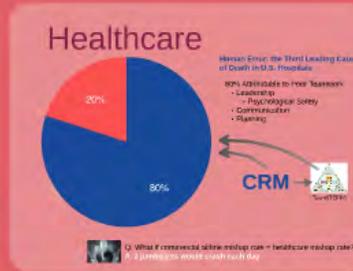
Technical Aptitude

Low

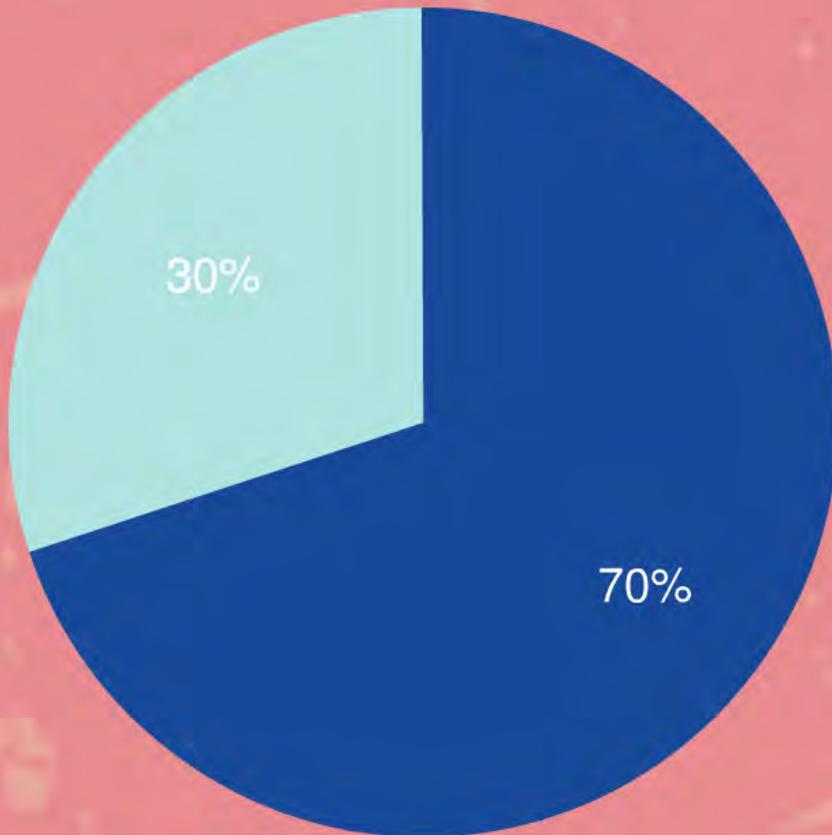
Low

Teaming Skills

High



Commercial Aviation



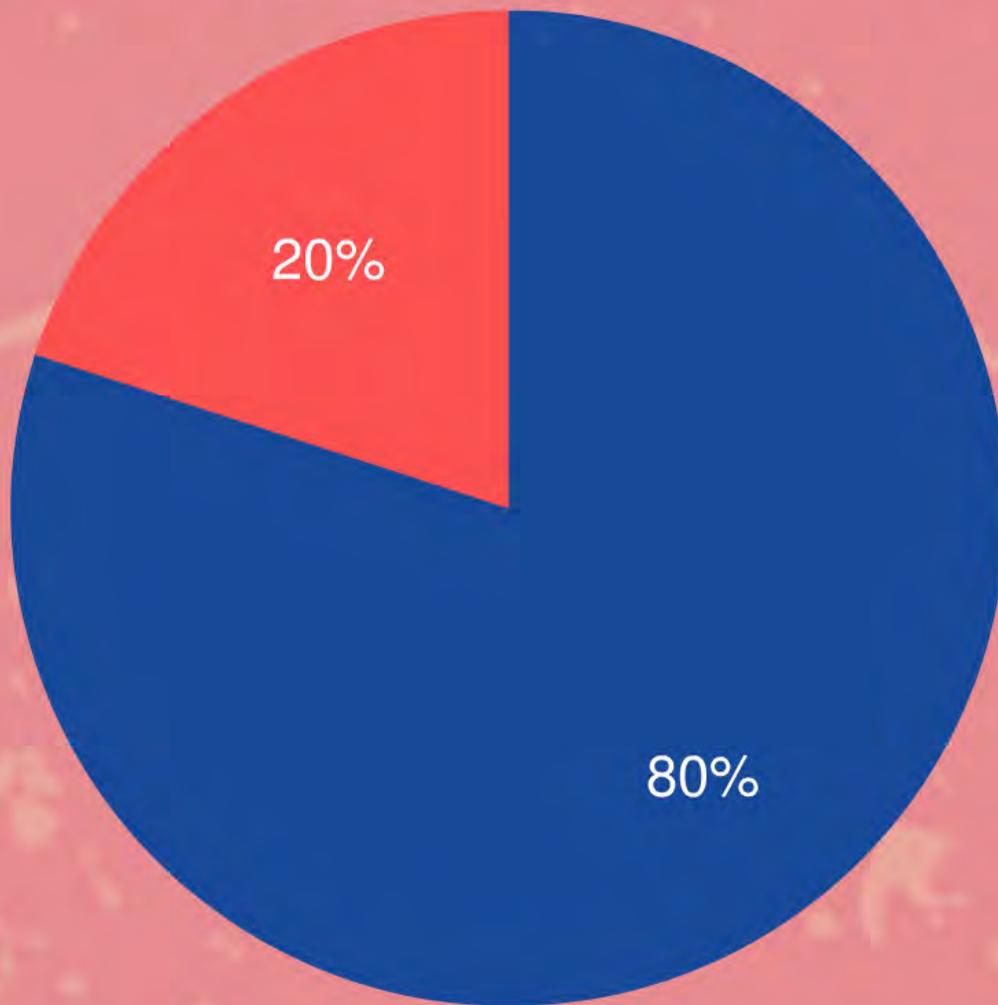
70-80% Aircraft Accidents Caused by Crews

- Leadership
 - Psychological Safety
- Communication
- Mission Analysis
- Assertiveness
- Situational Awareness
 - Workload Management
 - Monitoring (Reduced capability Automation)

CRM
Crew Resource Management

- Human Interactions
- Function: **Safety and Efficiency**
- a.k.a. Human Factors and Teaming
- Theory-Informed practices
- Evolving

Healthcare



Human Error: the Third Leading Cause of Death in U.S. Hospitals

80% Attributable to Poor Teamwork

- Leadership
 - Psychological Safety
- Communication
- Planning

CRM



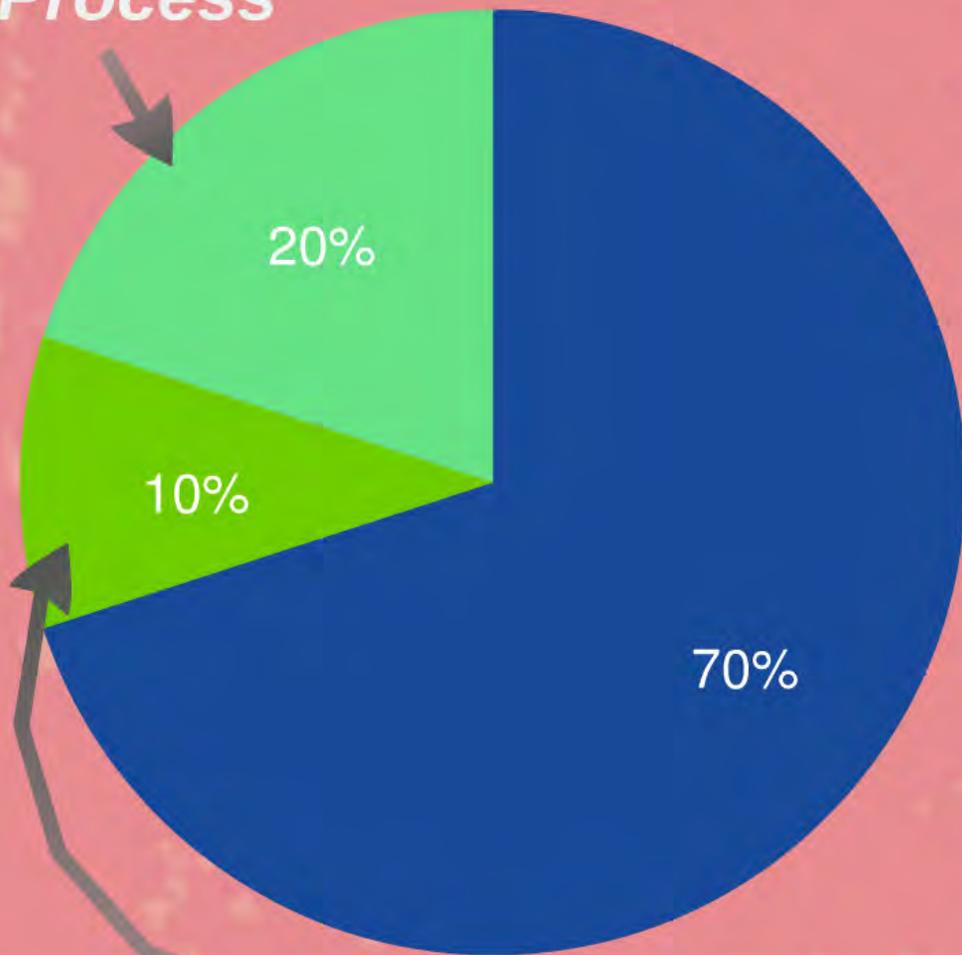
TeamSTEPPS



Q: What if commercial airline mishap rate = healthcare mishap rate?
A: 2 jumbo jets would crash each day

Technology

Process



Technical Skills

Success Factors behind Teams, Products, and Projects

Google | The Standish Group | Human Capital Institute
Salas, Tannenbaum, Edmondson, et al.

- Shared Mental Models
- Debriefing
- Leadership
 - Psychological Safety
- Communication
- Planning
- Collaboration
- Situational Awareness
 - Workload Management
 - Monitoring

Maritime



Mining



Firefighters



Oil & Gas



CRM

Crew Resource Management

NASA Space Flight Resource Management
International Space Station Crews
Maintenance Resource Management
Mining
Construction
Navy and Marine Corps CRM
International Association of Oil and Gas Producers
Energy Institute
NTSB Federal Railroad Administration
Fire and Emergency Medical Services

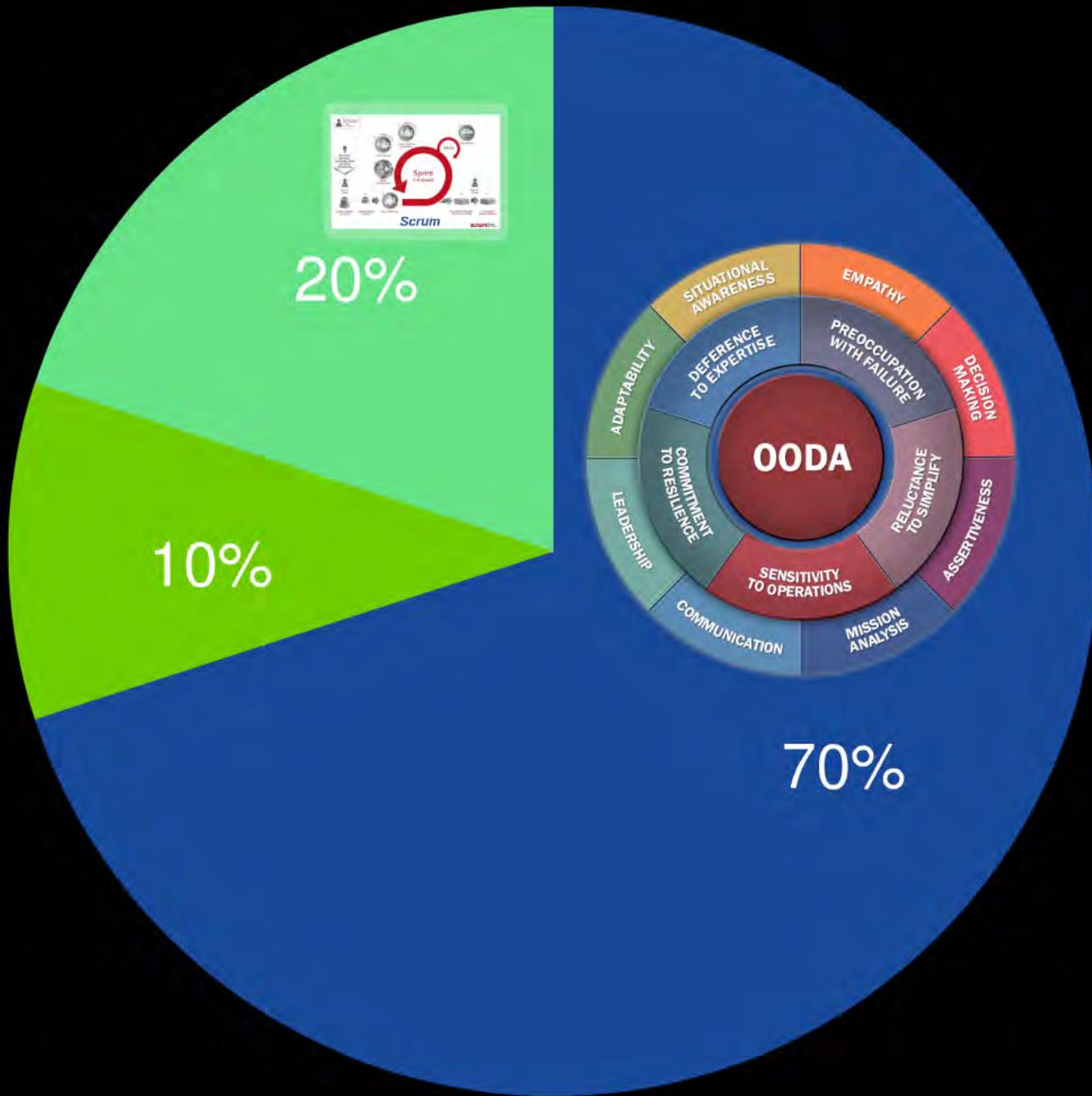
PO - Product Owner
 SM - ScrumMaster
 T - Team
 C - Customer


 Input from
 End-Users,
 Customers, Team
 and Other
 Stakeholders



Scrum

scruminc.



Complex Complicated

Emergent Practice

Organizing to Learn

Management by learning

Multiple Parallel Safe-Fail

Anthro-Complexity (CAS)

Sense-making

Heuristics

Patterns

Crews

Good Practice

Expert advice and analysis

Scrum

Kanban

Systems Thinking

Organizing to Execute

Chaotic

Novel Practice

Dictatorship

No Patterns

Directive Decision-Making

Crisis Management

Innovation

Obvious

Best Practice / SOPs

Command and Control

Predictable, Repeatable Outcomes

Management by Objectives

Process Enforcement

Systems Thinking

Kanban

Low Task Interdependency

Six Sigma

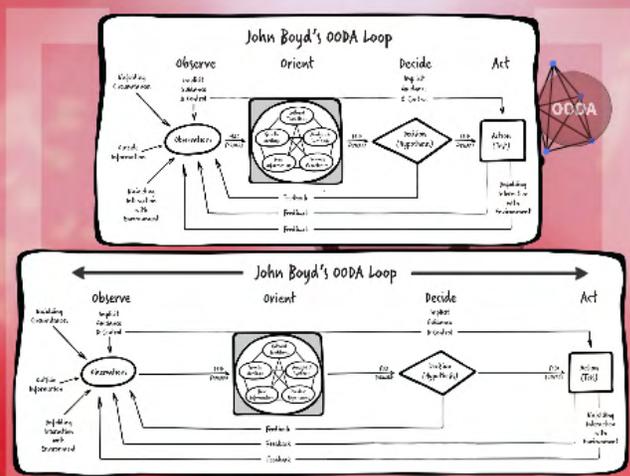
Waterfall Project Management

Checklists

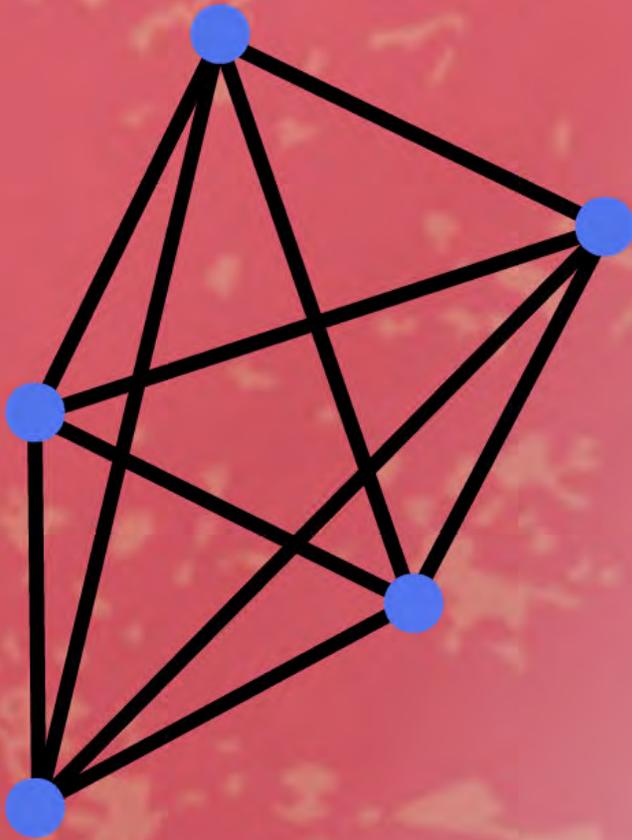
Node connections & maintenance



- Challenges
- Situational Awareness
 - Monitoring
 - Updating
 - Communication
 - Goal Analysis
 - Decision-Making
 - Adaptability / Flexibility



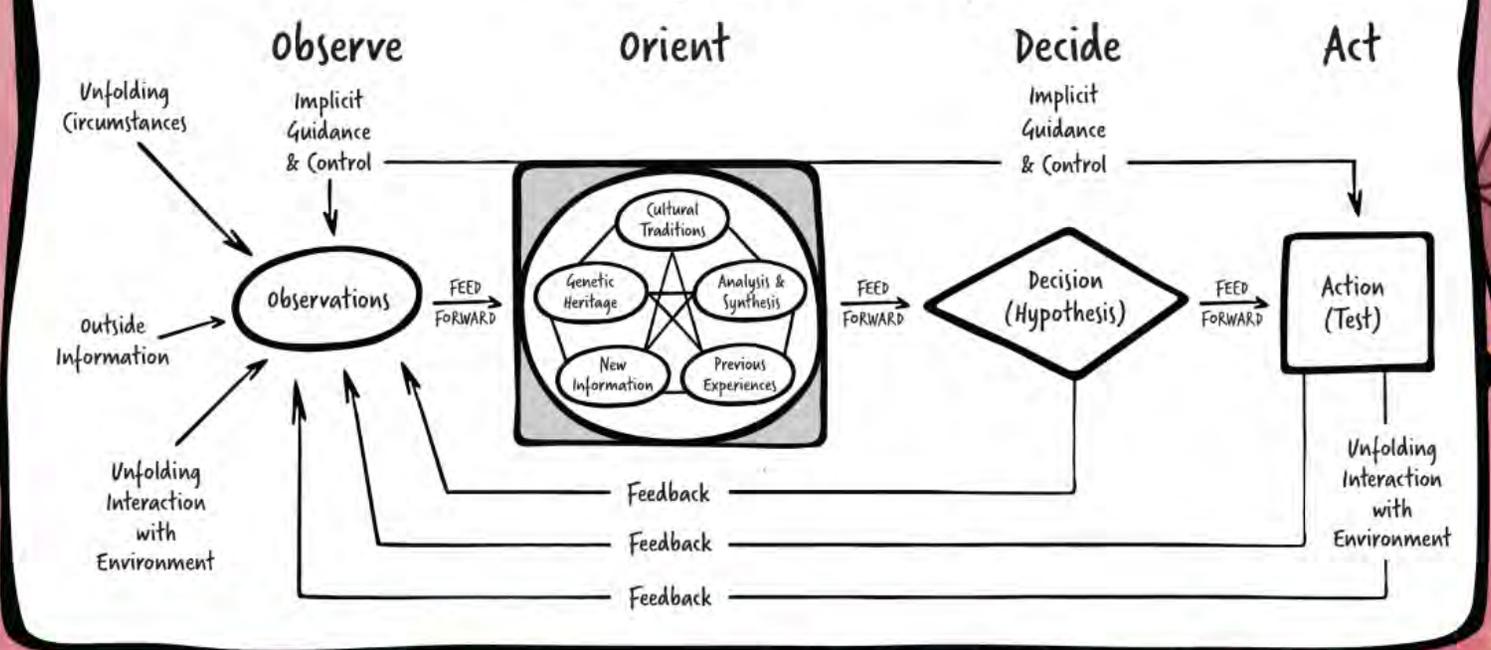
Node connections & maintenance



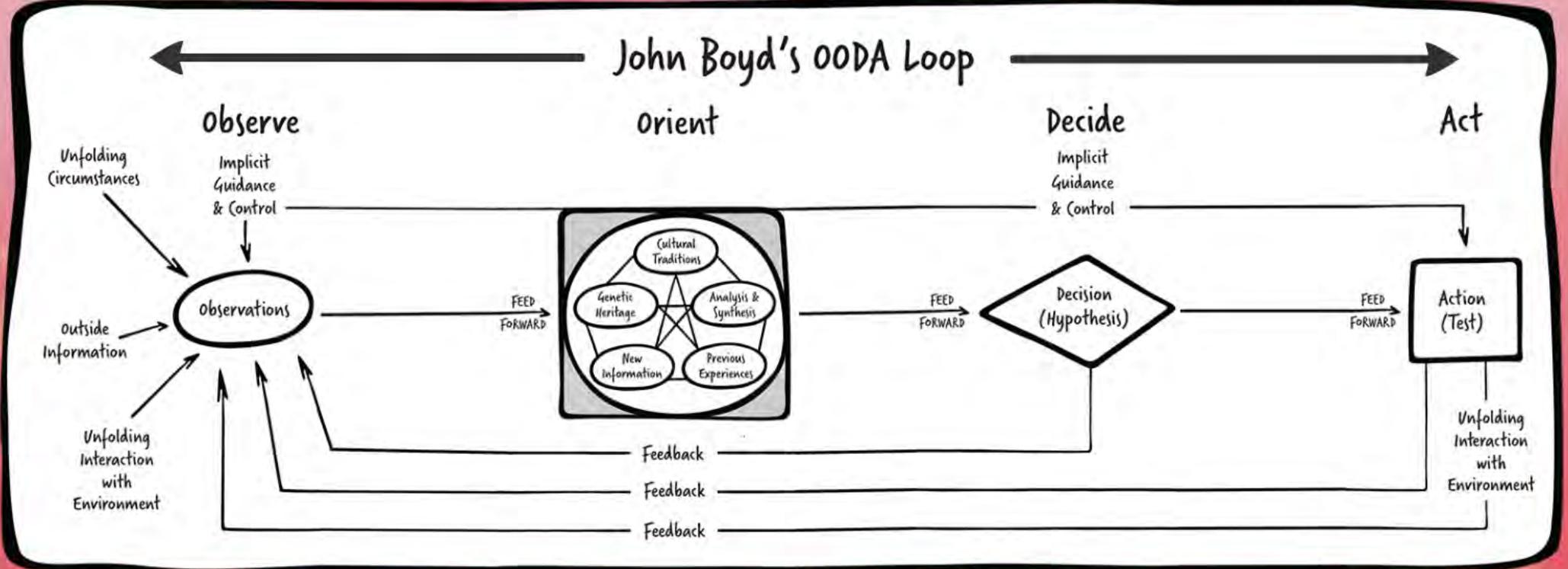
Challenges

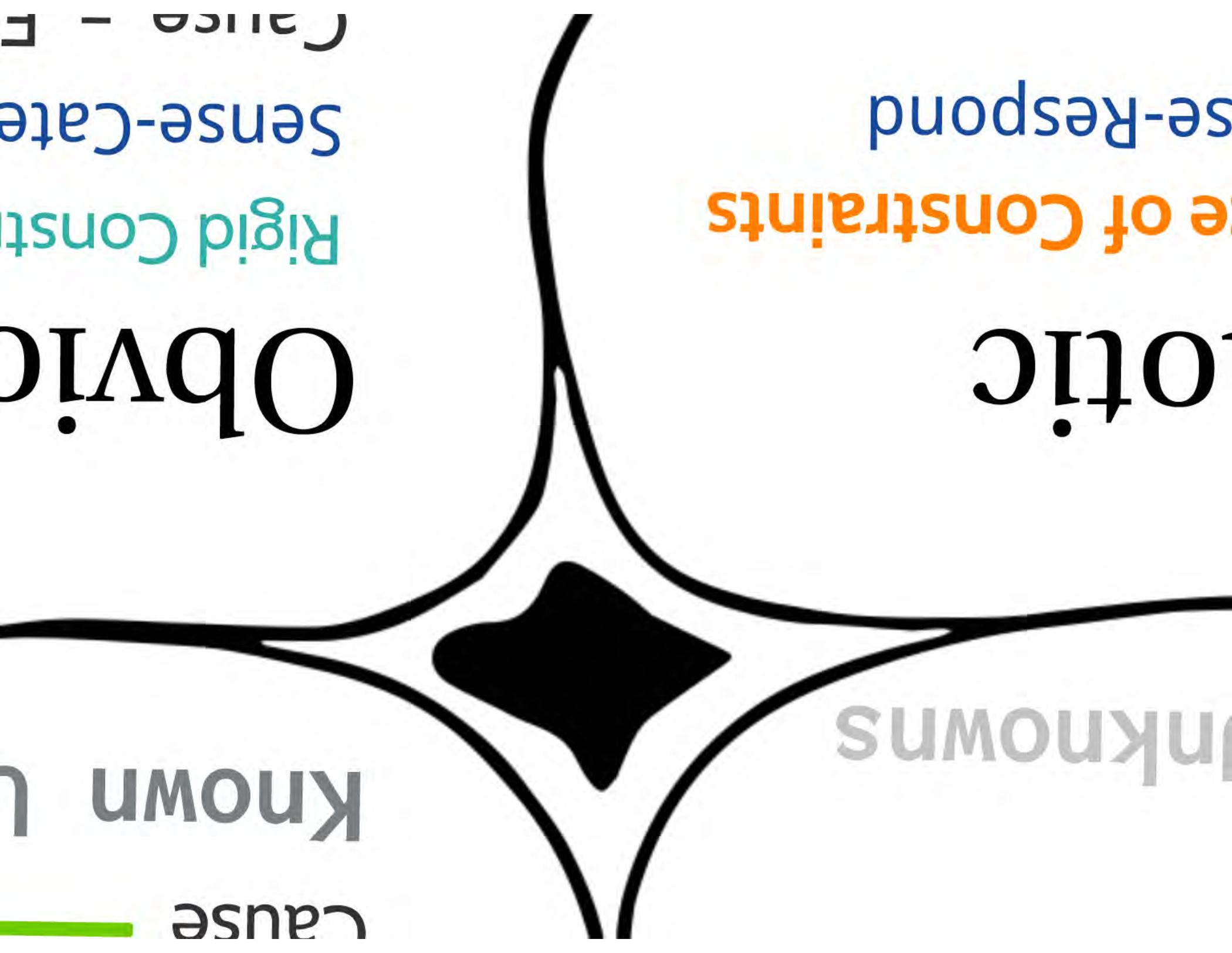
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 - Maintaining
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John Boyd's OODA Loop



John Boyd's OODA Loop





Complex

Enabling Constraints

Probe-Sense-Respond

Cause
Effect

Unknown Unknowns

Complicated

Governing Constraints

Sense-Analyze-Respond

Cause  Effect

Known Unknowns

Chaotic

Absence of Constraints

Act-Sense-Respond

Unknownables

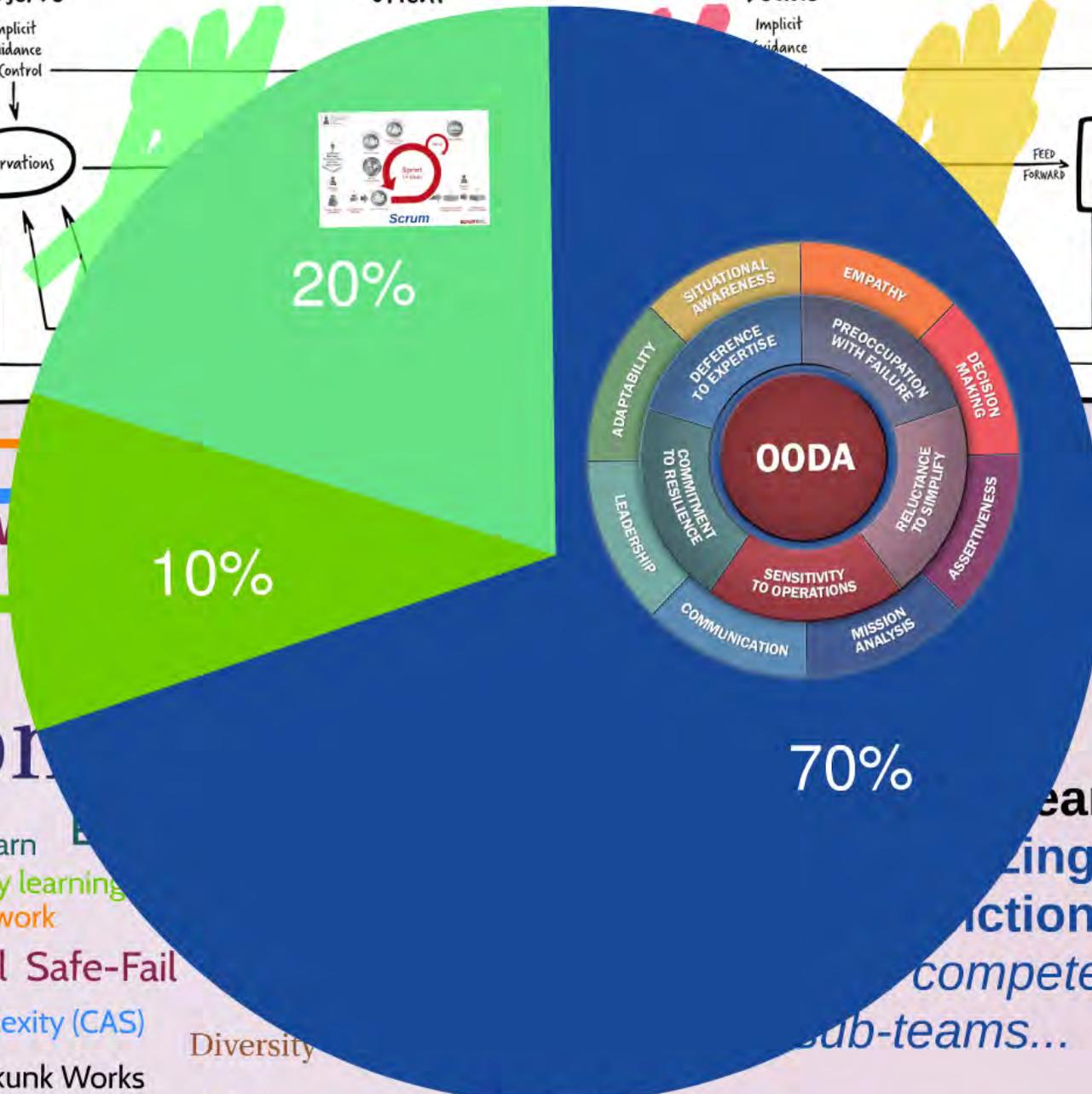
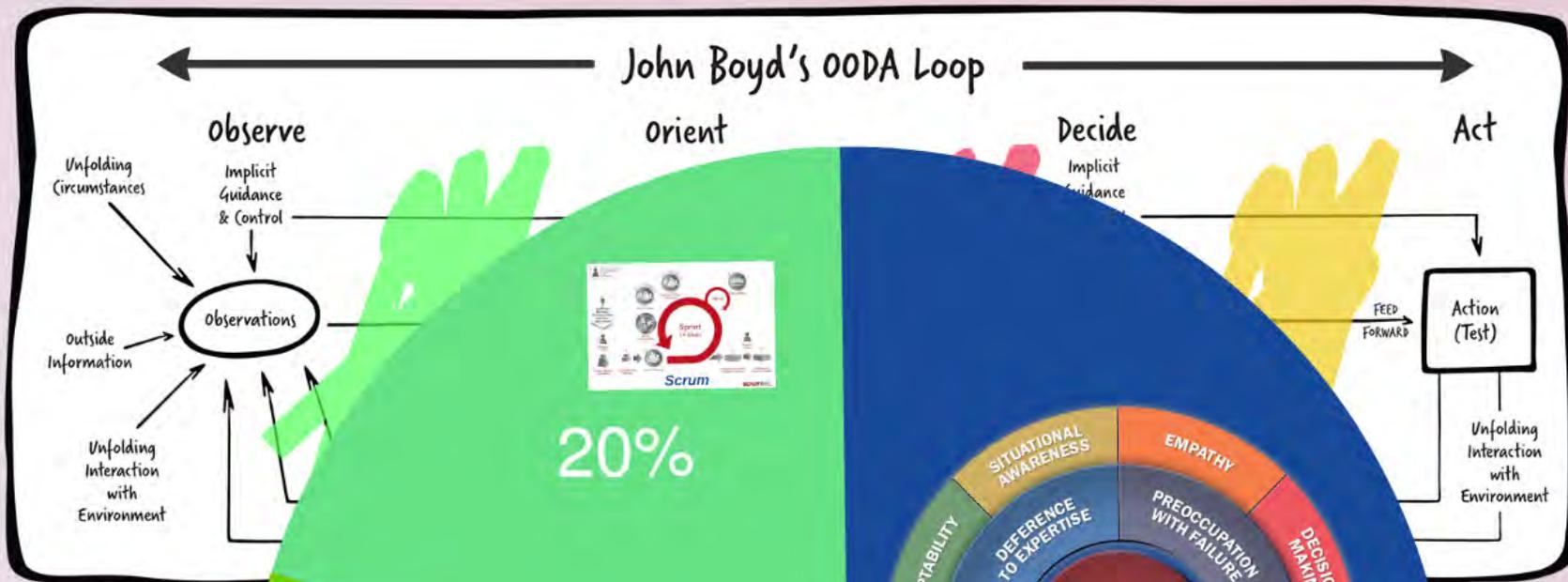
Obvious

Rigid Constraints

Sense-Categorize-Respond

Cause = Effect

Known

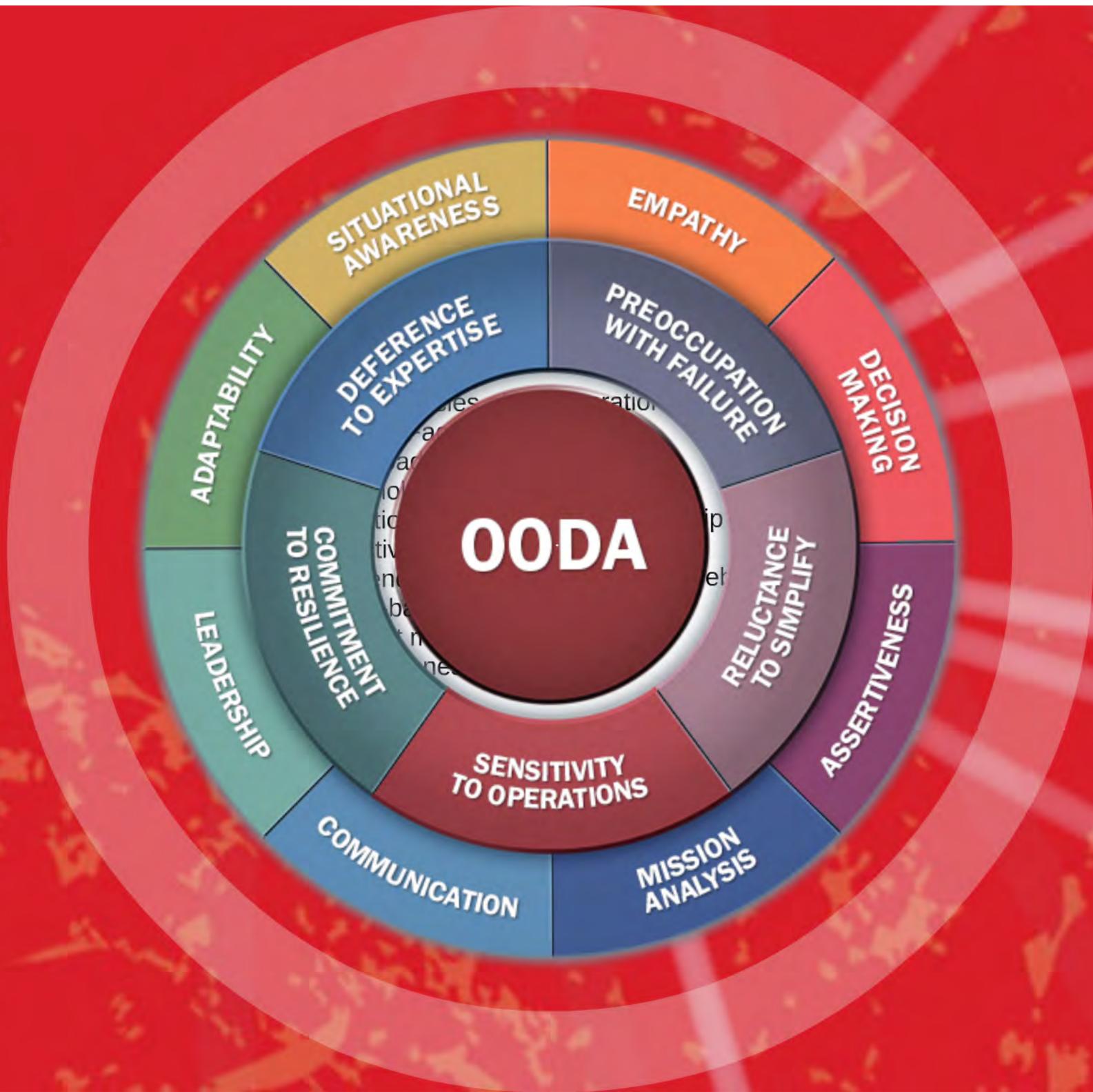


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 Management by learning
 Interdependent work
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 Anthro-Complexity (CAS)
 STICC
 Skunk Works
 Diversity
 Sense-making
 Heuristics

Teams:
 ...ing...
 ...functional...
 ...competencies...
 ...sub-teams...



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