JOHN LATHAM
LEADERSHIP + DESIGN

Critical + System Thinking:
Applying Deming's System of Profound Knowledge

Emerging Quality Leaders Program
American Society for Quality

October 16, 2014
Webinar

John Latham, Ph.D.

john@drjohnlatham.com

"Anyone can hold the helm when the sea is calm."

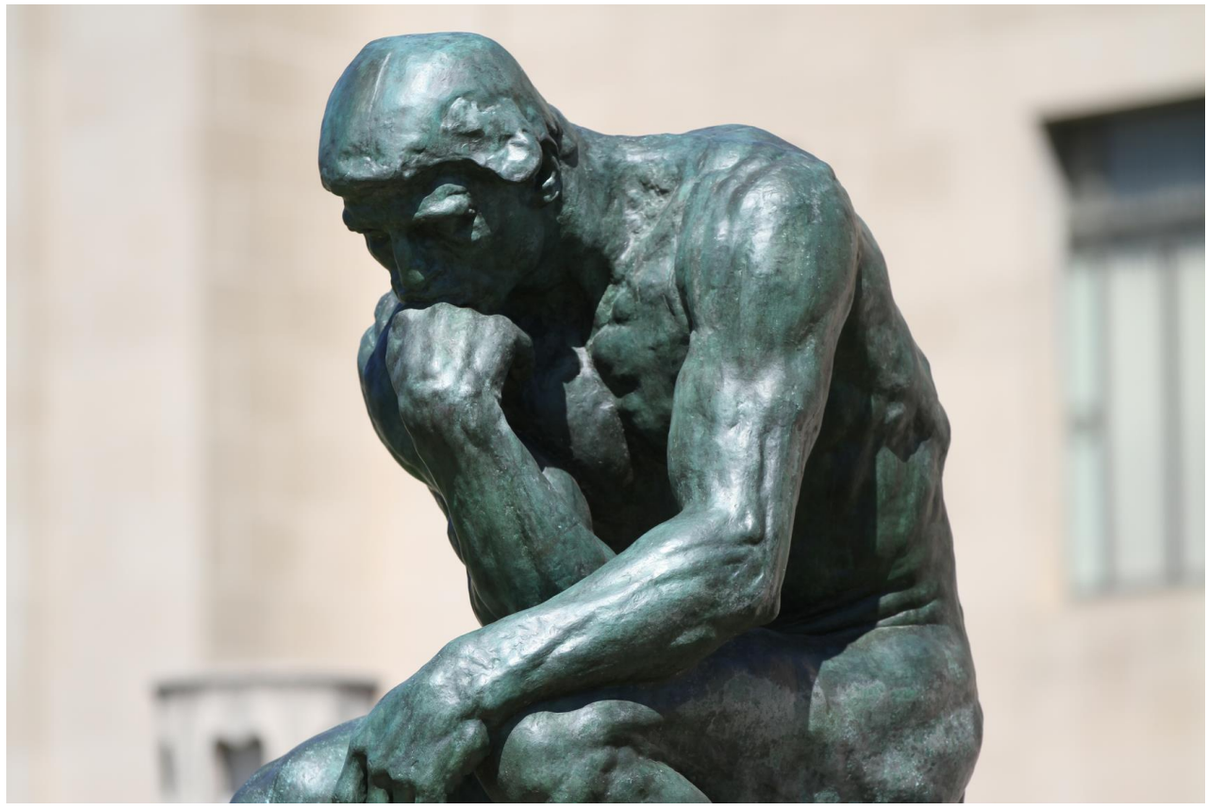
Publilius Syrus

Overview

- Introduction to Critical Thinking, Systems Thinking, and Deming's System of Profound Knowledge
- Understand the Organization as a **System**
- Understand the **Stakeholders**
- Understanding **Scorecard** Results and Variation
- Theory of Knowledge about Organizations and **Strategy**
- Next Steps

Critical Thinking

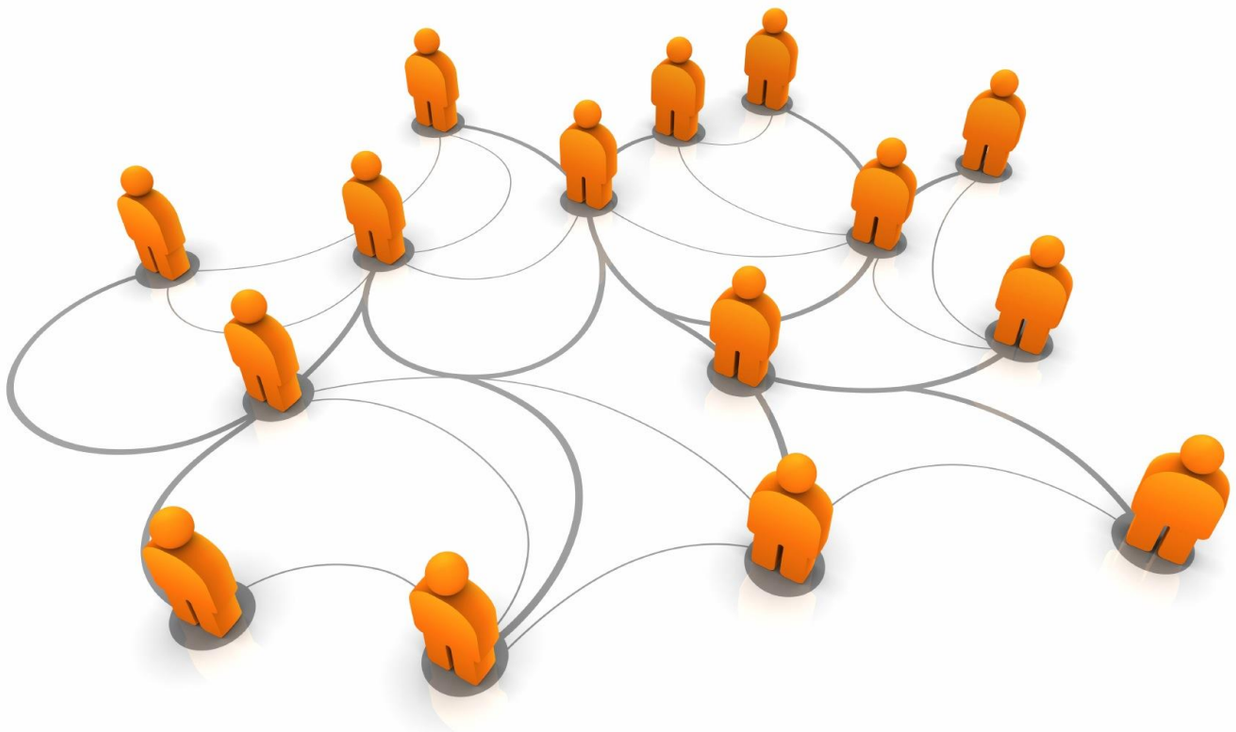
- Identify and challenge assumptions underlying our and others' ideas and actions
- Recognize the importance of context
- Imagine and explore alternatives
- Skeptical of quick fixes



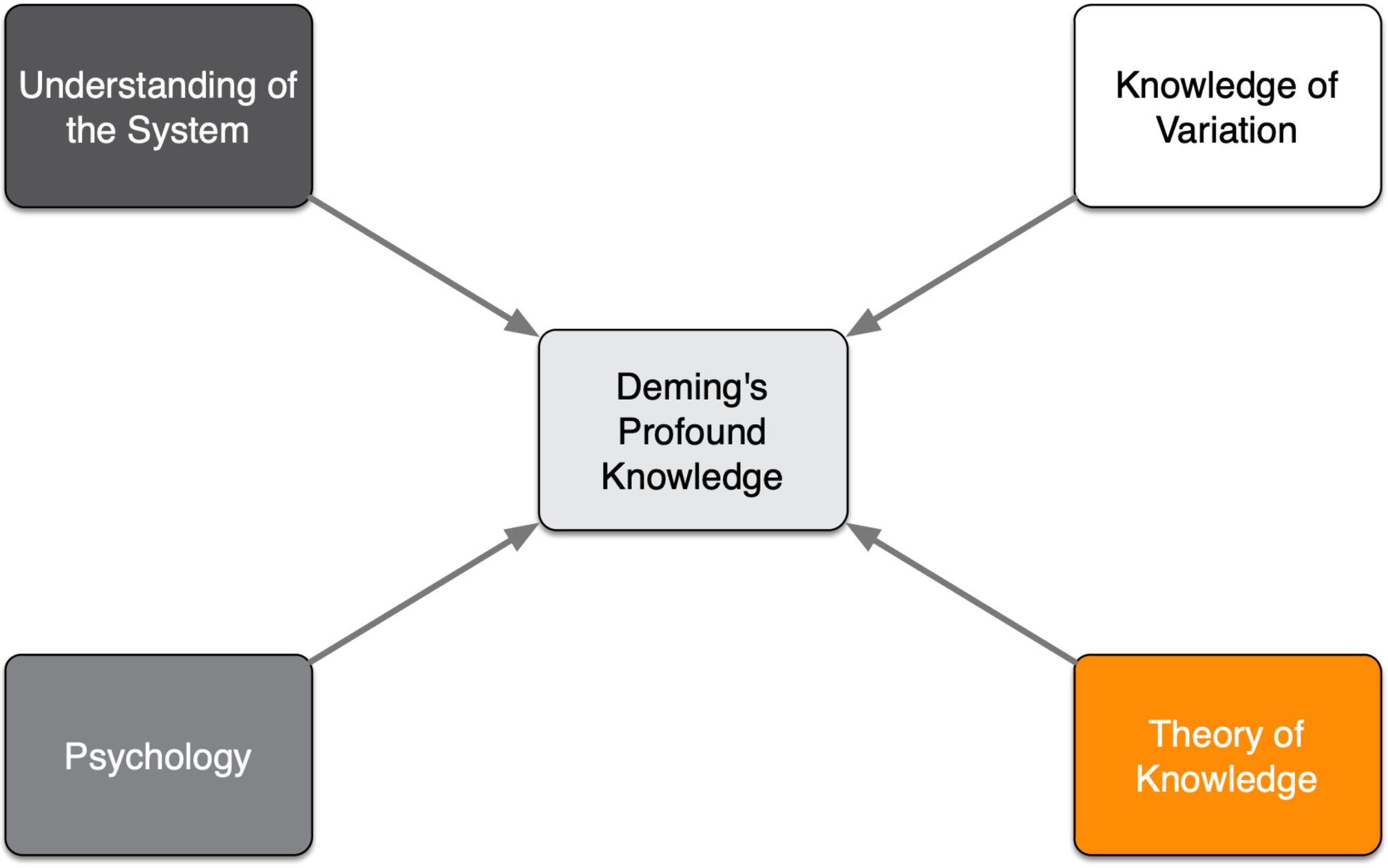
Brookfield, S. D. (1987). *Developing Critical Thinkers: Challenging Adults to Explore Alternative Ways of Thinking and Acting* (1st ed.). San Francisco: Jossey-Bass.

Systems Thinking

- Flows of inter-connected activities and information
- Cause and effect often separated in **time** and **space**
- Correlation vs. causation
- Symptoms vs. root causes



Deming's System of Profound Knowledge



Deming, W. E. (1994) *The new economics for industry, government, and education*, (2nd ed.). Massachusetts Institute of Technology Center for Advanced Engineering Study: Cambridge, Massachusetts. Chapter 4: A System of Profound Knowledge (pp. 92 - 115).

CEO Attitudes and Motivations
How are they different for high performing orgs?

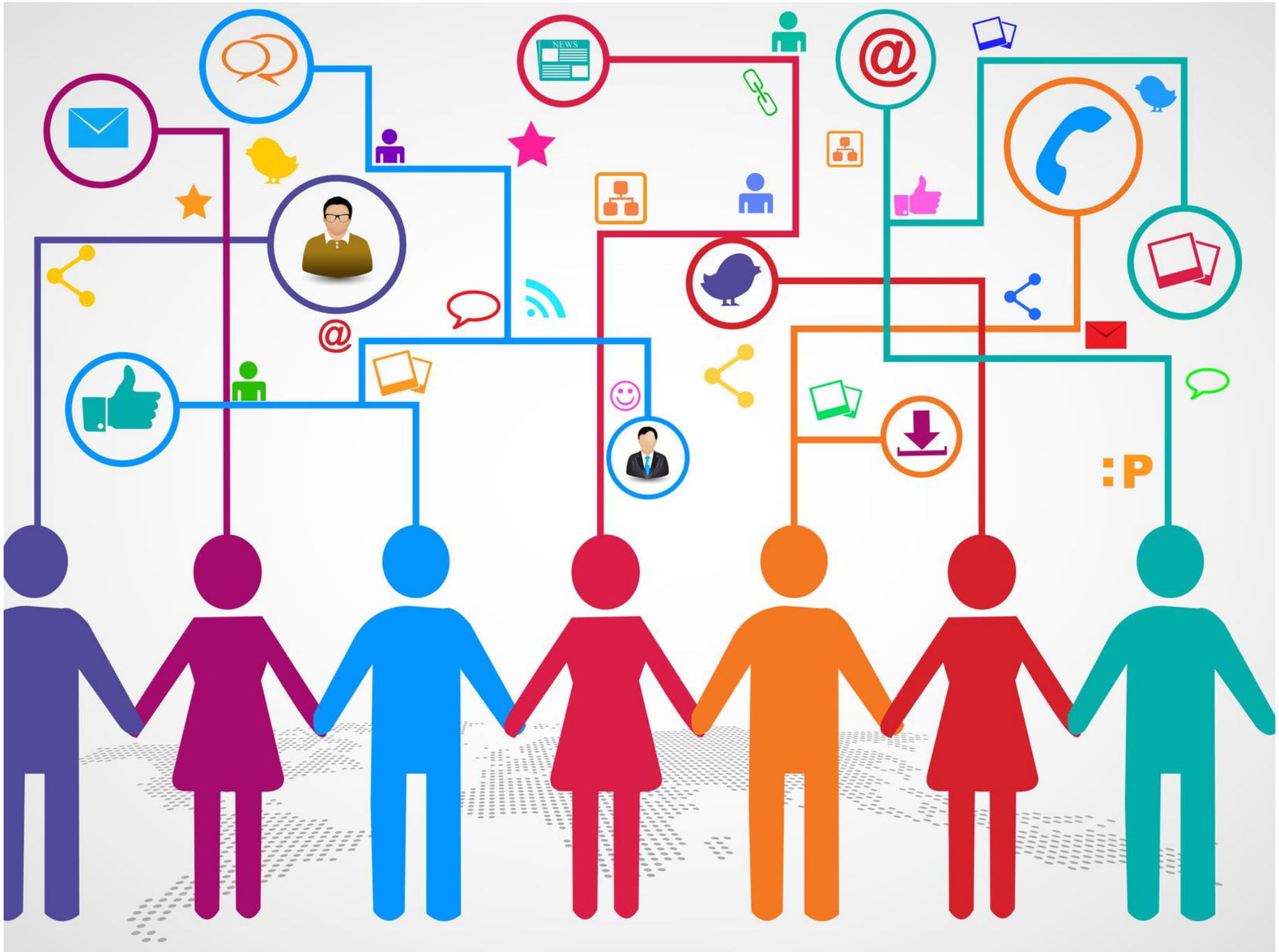
JOHN LATHAM
LEADERSHIP + DESIGN

- **Drive Continuous Improvement** - None of the CEOs in our study were satisfied with the status quo - they all drove continuous improvement.
- **Focus on Systems** - They are motivated to work with systems and processes which helped them lead the redesign the organizational systems to achieve results across a comprehensive scorecard.
- **Learning from the Past** - Used analysis and critical review of the past to inform their Focus on the Future.
- **Focus on Information** - Motivated to work with facts and knowledge.
- **Collaborative** - They have a low need for sole responsibility which positively influenced their collaborative leadership approach improving both the strategies and solutions and the “buy-in” for change.
- **Non-Negotiable Values** - They have a low tolerance for actions that are inconsistent with the values of the organization.

Source: Larson, M., Latham, J. R., Appleby, C. A., & Harshman, C. L. (2012). CEO attitudes and motivations: Are they different for high performing organizations? *Quality Management Journal, 19*(4), 15.

JOHN LATHAM
LEADERSHIP + DESIGN

1. Understand the Organization as a “System”



Mo-Tze (a.k.a. Miscius) 500 BCE

*Whoever pursues a business in this world must have a **system**.*

*A business which has attained success without a **system** does not exist.*

*From ministers and generals down to the hundreds of craftsmen, everyone of them has a **system**.*

The craftsmen employ the ruler to make a square and the compass to make a circle.

*All of them, both skilled and unskilled, use this **system**.*

The skilled may at times accomplish a circle and a square by their own dexterity.

*But with a **system**, even the unskilled may achieve the same result, though dexterity they have none.*

*Hence, every craftsman possesses a **system** as a model.*

*Now, if we govern the empire, or a large state, without a **system** as a model, are we not even less intelligent than a common craftsman?*

Photo by Savita Chand

Source:
Wu, Kuo-Cheng. (1928). *Ancient Chinese political theories*. Shanghai, China: The Commercial Press, Limited.

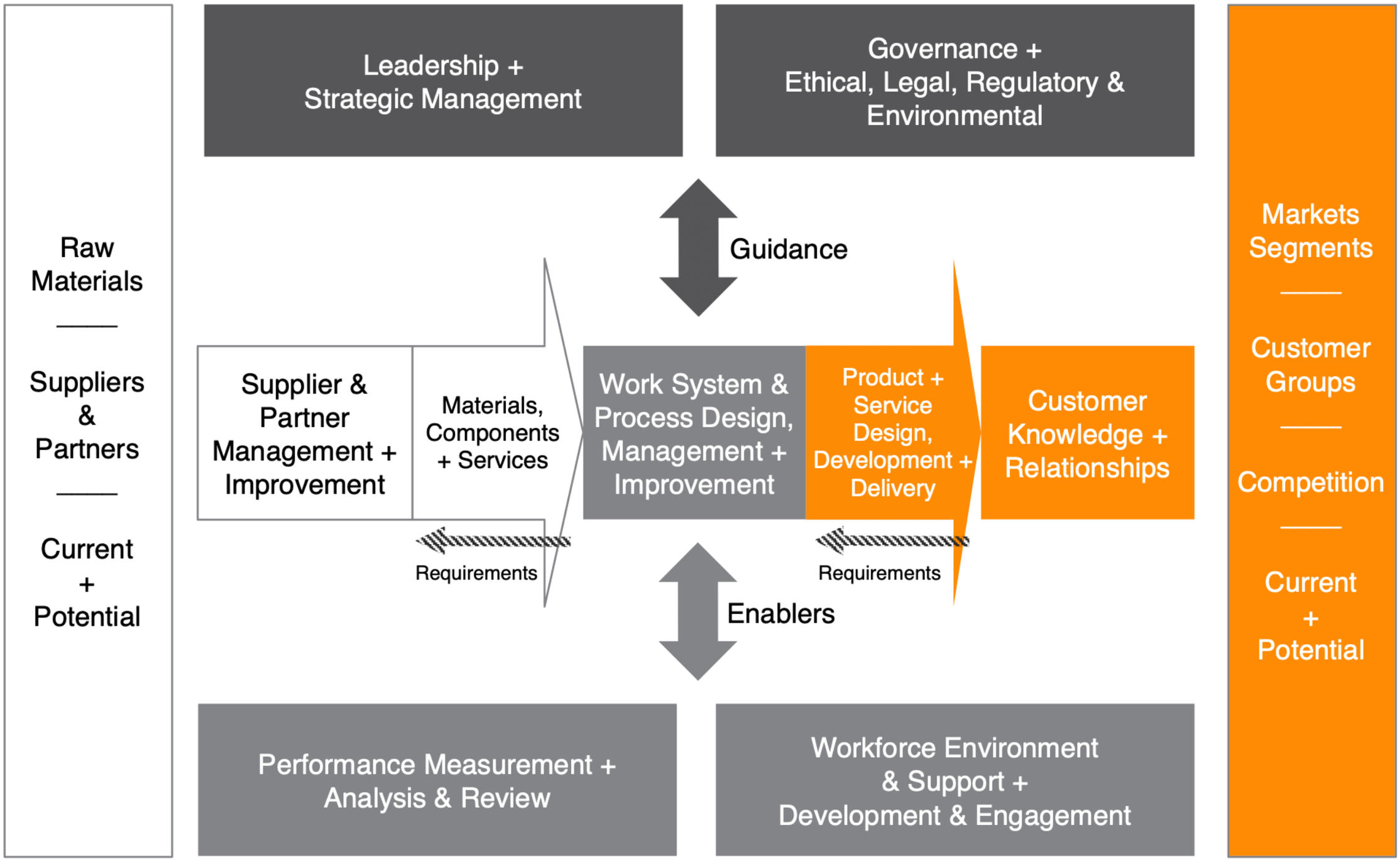
JOHN LATHAM
LEADERSHIP + DESIGN

Organization Systems History - (selected)

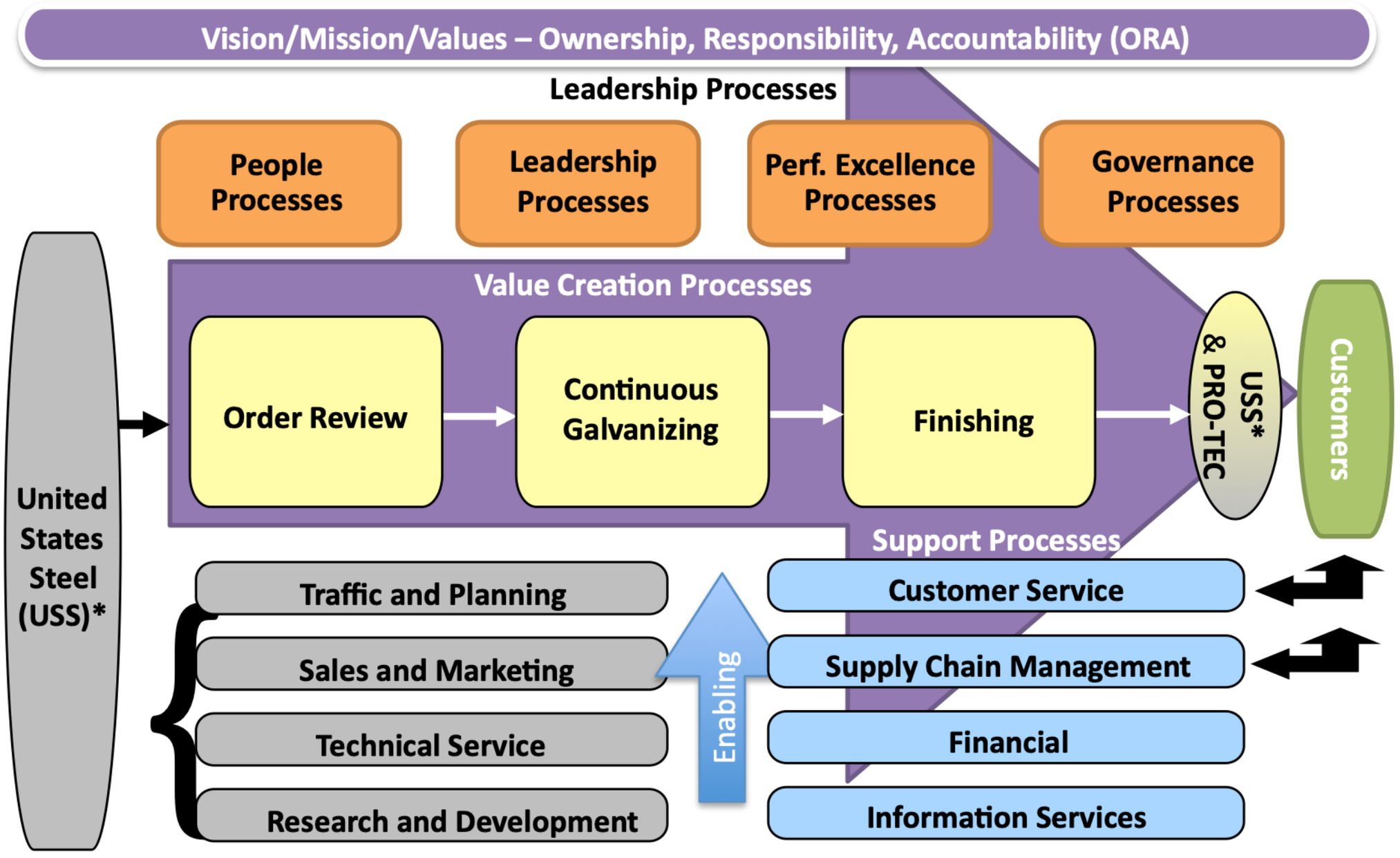
- **Mo-Tze** - (a.k.a. Miscius) 500 BCE
- **Deming** - Production System, 1950 Japan
- **Jay Forrester** - Dynamic Systems
- **Russell Ackoff** - Organizational Systems
- **Michael Porter** - Value Chain
- **Peter Senge** - Systems Thinking (Deming, Forrester, Argyris)
- **NIST** - Baldrige Framework (and other excellence frameworks)
- **Wayhan et al. (2010)** - Empirically Tests the Deming Production System
- **Alex Osterwalder** - Business Model Canvas

JOHN LATHAM
LEADERSHIP + DESIGN

Organization System

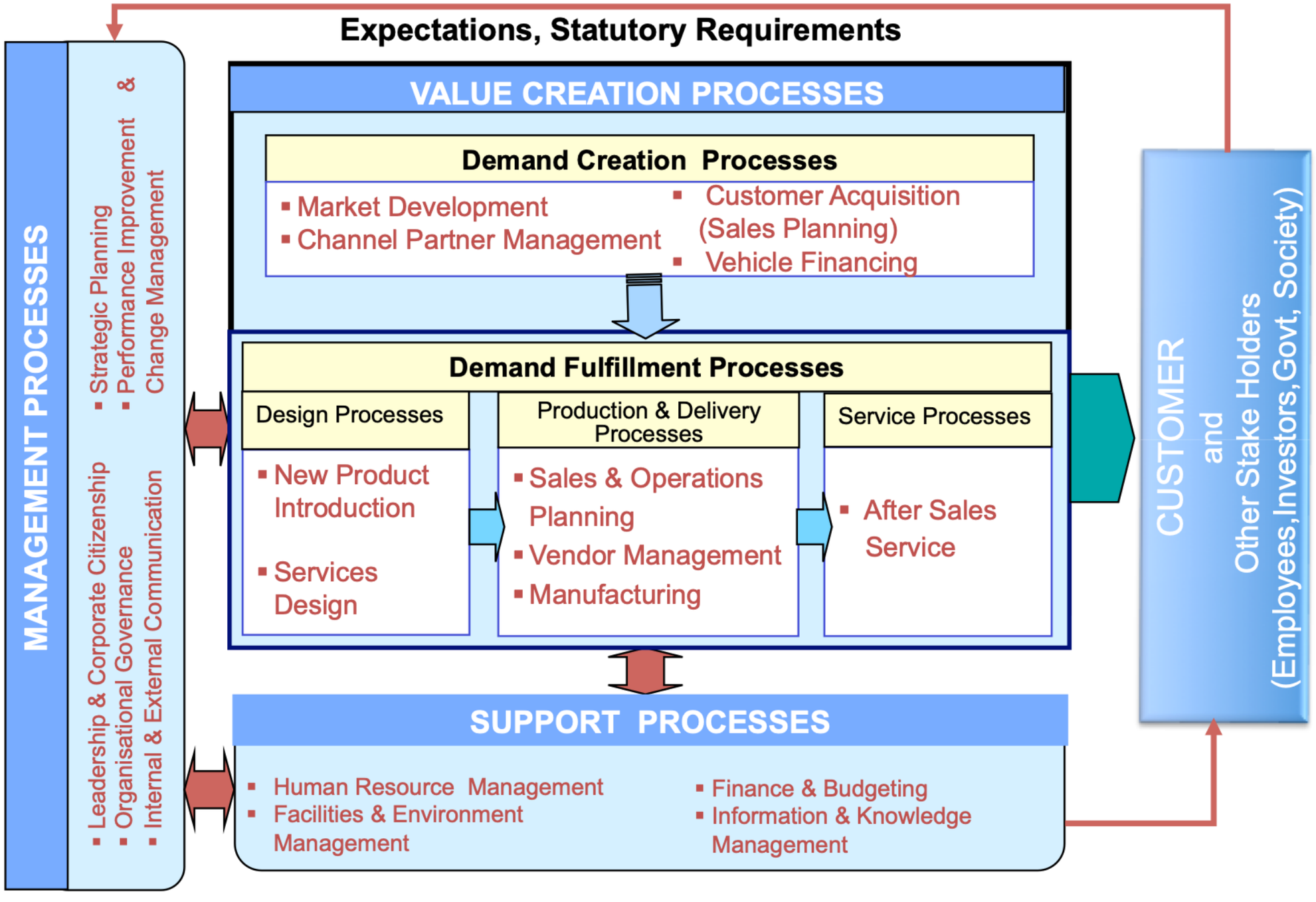


Pro-Tec Coating Company



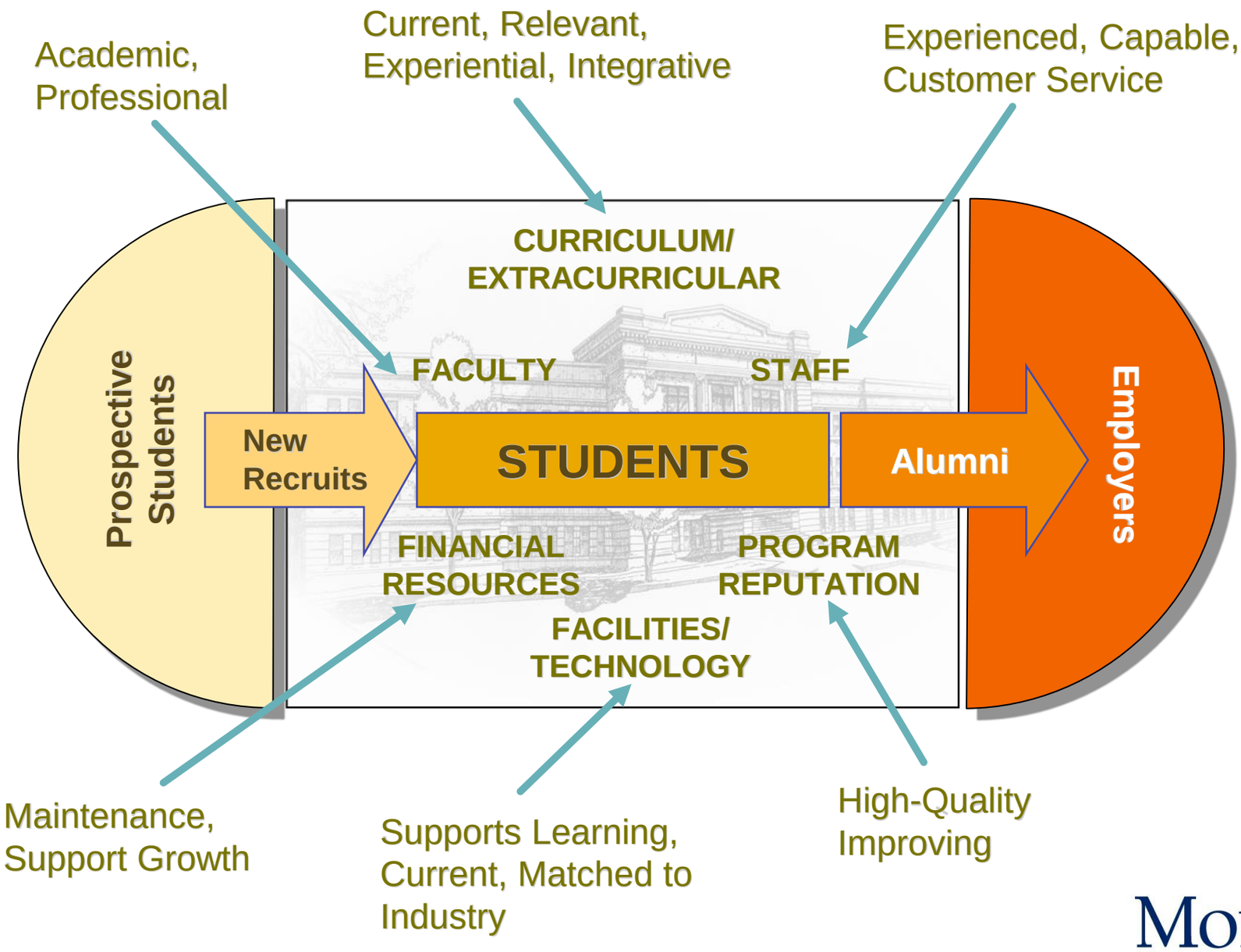
Source: Latham, J. R. and J. Vinyard (2010). *Baldrige user's guide: Organization diagnosis, design, and transformation* (4th ed.). Hoboken, NJ, John Wiley and Sons. p. 62

TATA Comm. Vehicle Business Unit Enterprise Process Model



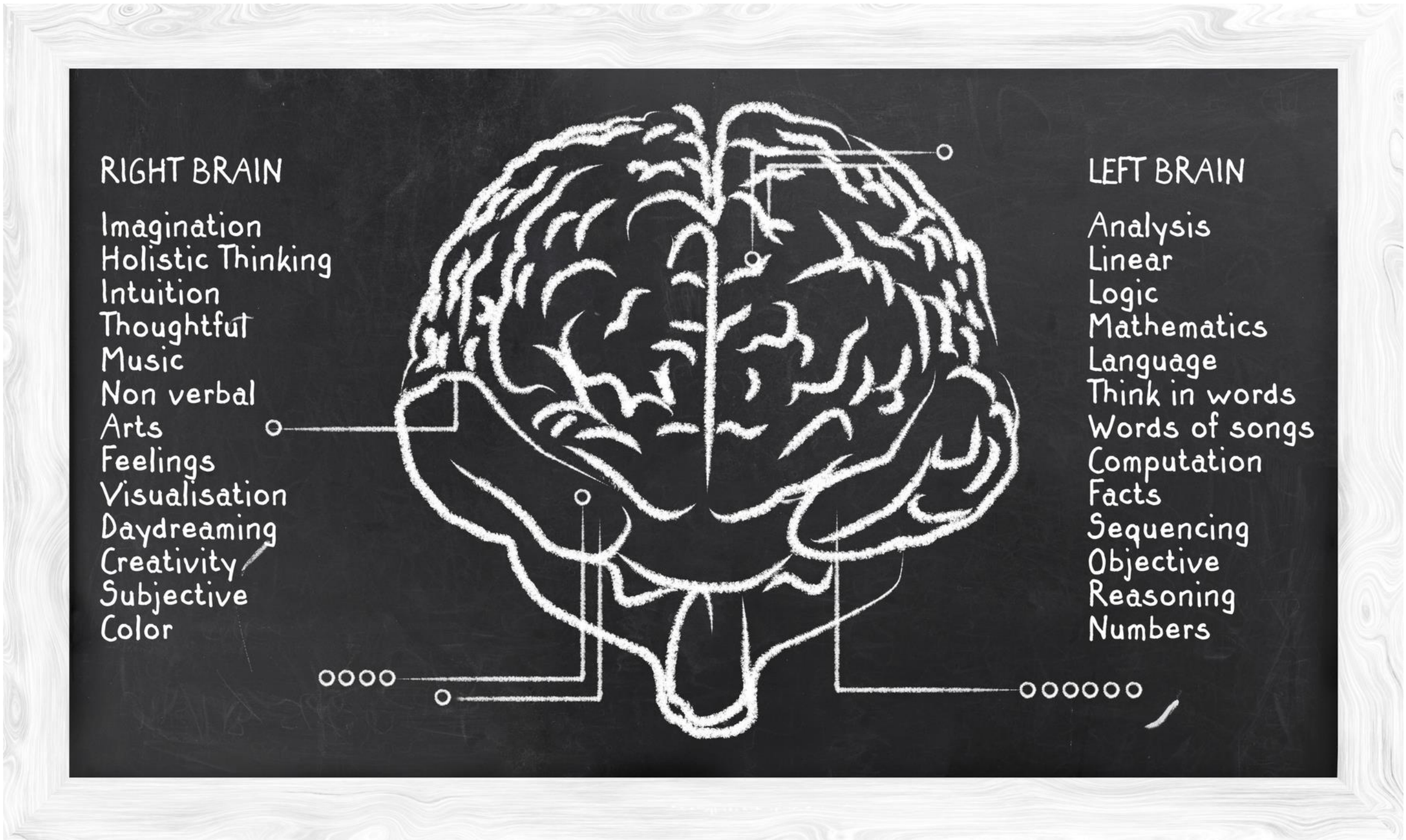
Source: Latham, J. R. and J. Vinyard (2010). *Baldrige user's guide: Organization diagnosis, design, and transformation* (4th ed.). Hoboken, NJ, John Wiley and Sons.. p. 454

Monfort College of Business



Source: Latham, J. R. and J. Vinyard (2010). *Baldrige user's guide: Organization diagnosis, design, and transformation* (4th ed.). Hoboken, NJ, John Wiley and Sons. p. 312

2. Understand the Stakeholders



Raising the Bar:
Increasing pressures from multiple stakeholders...

Natural Environment

Investors

Suppliers and Partners

Customers

Community and Society

Workforce

Stakeholders

Investors + BoD +
Senior Leadership Team

Society + Environment

Suppliers +
Partners

Management +
Workforce

Management +
Workforce

Customers

Management + Workforce

Management + Workforce

3. Understand Scorecard Results and Variation

Scorecard

Leadership, Financial and Market

- Revenue, Market Share, New Markets Entered, Profitability, Return on Sales (ROS) % Improvement
- Return on Net Assets (RONA) % Improvement, Operating Margins, Liquidity, Debt to Equity
- Net Asset Turnover, Cost of Quality, Unit Cost, Days Cash On Hand
- Leadership Scorecard

Governance, Ethics, Societal and Environmental

- Legal, Regulatory and Ethics (Penalties $, Fines $, # Audit Findings by Type, # Ethic Hotline Calls, # Conformed Ethics Violations by Type)
- Community (Charity Contributions $/Employee, Avg. Volunteer Hours/Employee, # Charity Events Sponsored)
- Environment (Recycling $$, Annual Paper Recycling Tons, Waste, Energy Use Reductions, VOM Emissions/Sale, GHG/CO2 Emissions gross; Less: Sequestration = GHG/CO2 emissions net).

Supplier and Partner

- # Preferred Suppliers
- Total # of Suppliers
- Rejection Rate (PPM)
- On-time Delivery
- Costs & Cost Reductions
- Product Reliability

Operational and Support

- Construction time each unit
- Cycle Time %Improvement
- Book to Ship Time Hours
- Process Improvements
- Inventory Turns
- Productivity
- Cost Reductions
- Patents Issued

Product and Service

- % Defects
- % Returns / Refunds
- Warranty Work (repairs)
- % Replacements
- %Timely Delivery
- Customer Resolution Time
- Call Answer Speed
- # Abandoned Call

Customer

- Satisfaction % Top Box
- Dissatisfaction
- # Complaints
- Competitor Comparisons
- % Repeat Purchase
- % Positive Referrals
- Customer Perceived Value
- Customer Relationships

Knowledge and Information System

- # of Best Practices in Knowledge Database
- IT System Reliability % Uptime
- Knowledge System User Friendly Survey Score
- IT System User Satisfaction Survey Score
- % of Measures with Competitive Comparisons
- % of Measures with Industry or World Class Comparisons

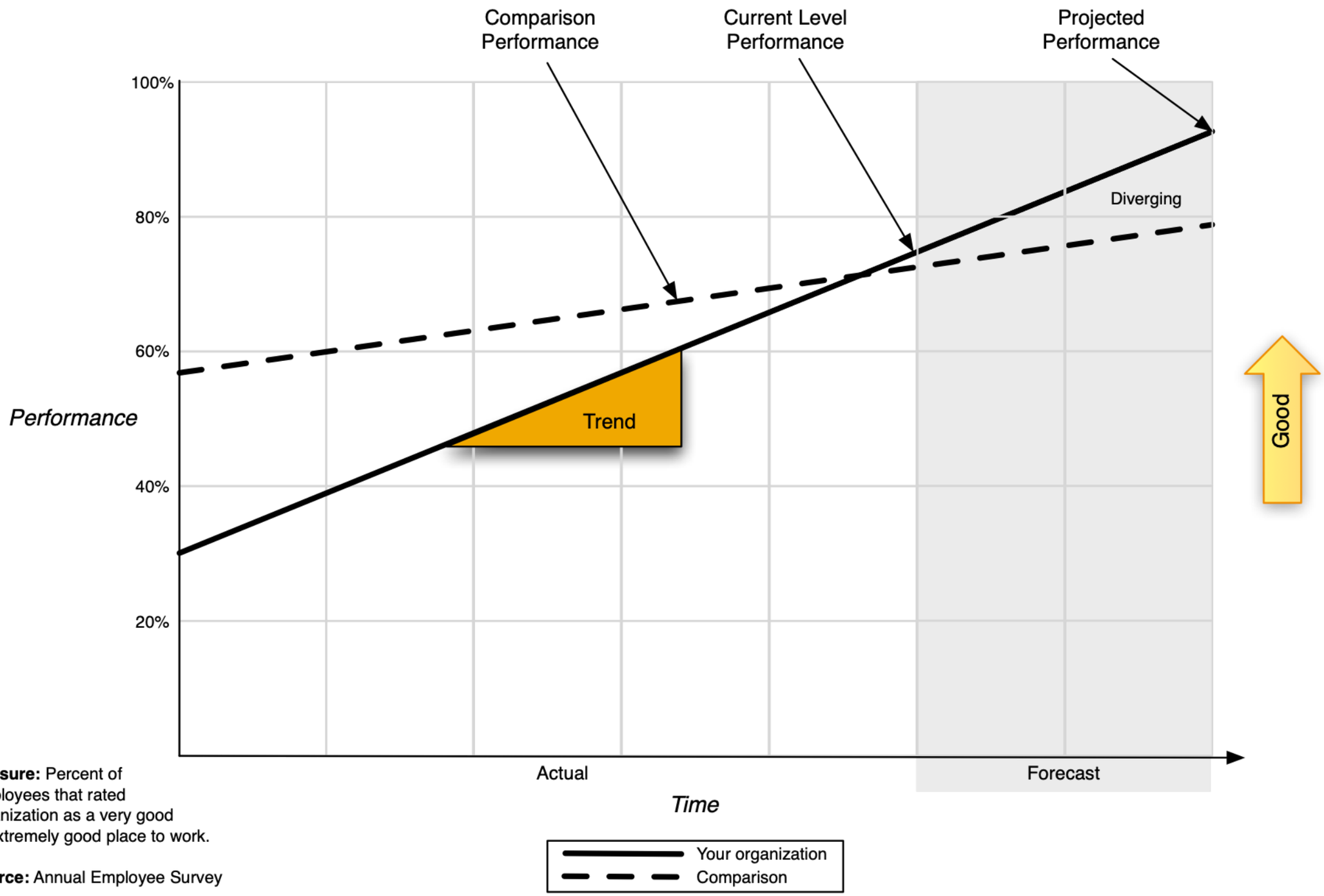
Workforce

- Employee Well-being and Satisfaction/Dissatisfaction (Employee Satisfaction and Engagement Survey, Voluntary Turnover %, Absenteeism # Days, Accidents/100 Employees, Injuries # Days,..
- Employee Development (Courses completed, Cross-training, $ Spent on Training, Training Hours/Employee, etc.)
- Work System Performance (Innovation/Suggestion rates, On-the-job Performance Improvements, etc.)

3 Dimensions of Analysis

- **Level** of Current Performance
  - Manage Inside the Existing Processes
  - Manage and Control Products/Service Quality
  - Manage and Control Finances
  - Anticipate and prevent operational problems
- **Trends** and Patterns of Performance Over Time
  - Process Variation
  - Continuous Improvement
  - Organizational Learning
  - Anticipates and Prevents Problems
- **Comparisons** Including Competitors: Current Performance and Trends
  - Assess Competitive Risks
  - Identify Competitive Opportunities
  - Identify Opportunities/Areas for Organizational Performance Leadership

Quantitative Visual Data Display: Levels, Trends and Comparisons



Measure: Percent of Employees that rated organization as a very good or extremely good place to work.

Source: Annual Employee Survey

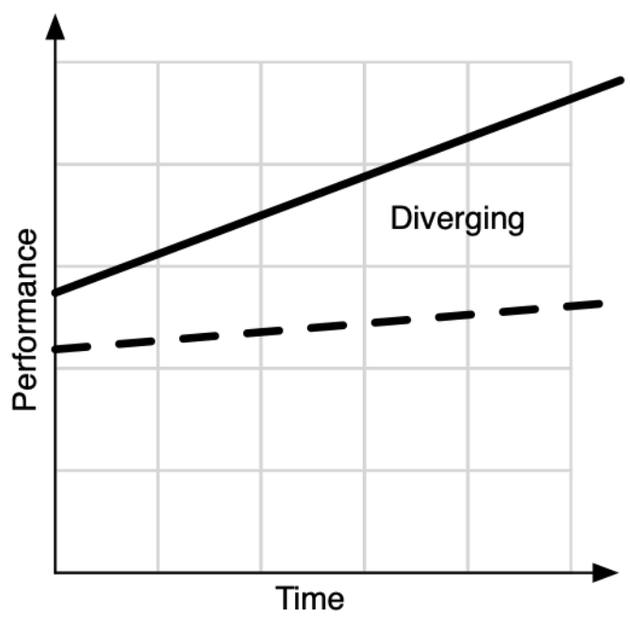
Latham, J.R. and Vinyard, J. (2011) *Organization Diagnosis, Design and Transformation: A Baldrige User's Guide* (5th ed.) Wiley: Hoboken. p. 505

Comparisons - 4 Situations

1. Dominant

You are on top and leaving the comparison behind!

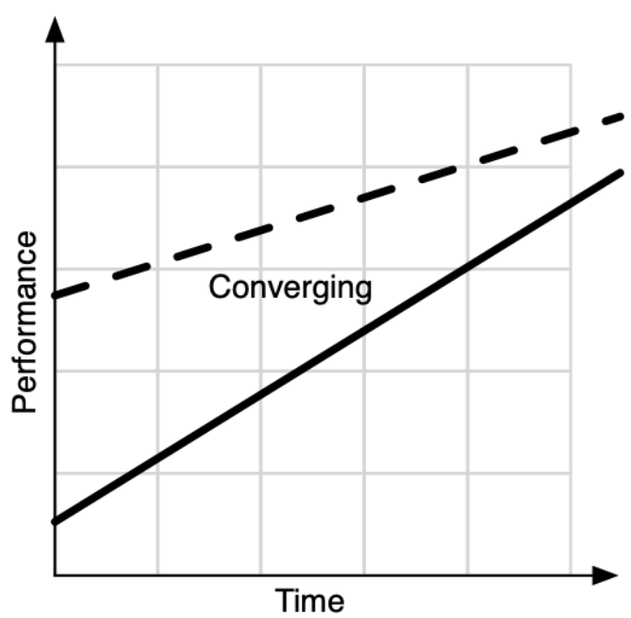
Blue



2. On Track

You are on bottom but closing in on the comparison.

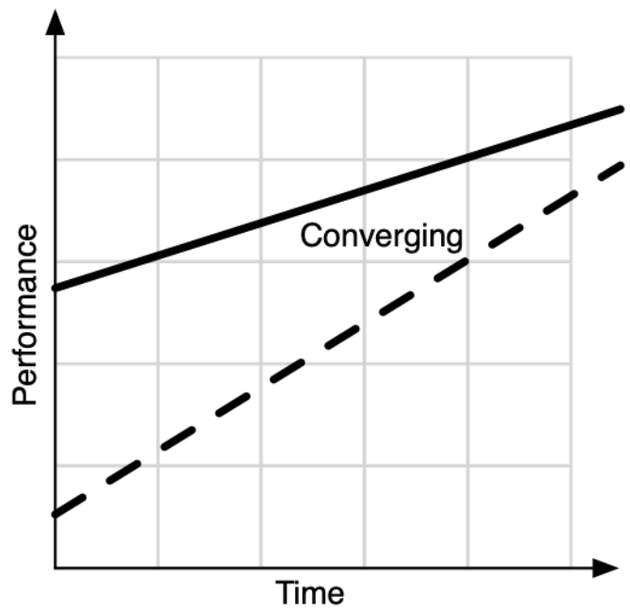
Green



3. Impending Danger

You are on top but the comparison is closing in on you.

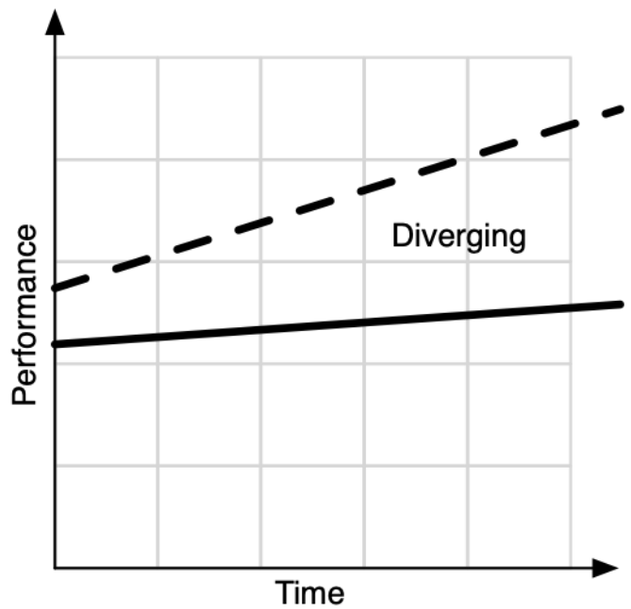
Yellow



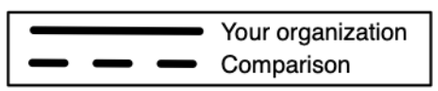
4. Danger Worsening

You are on bottom and the comparison is leaving you behind.

Red



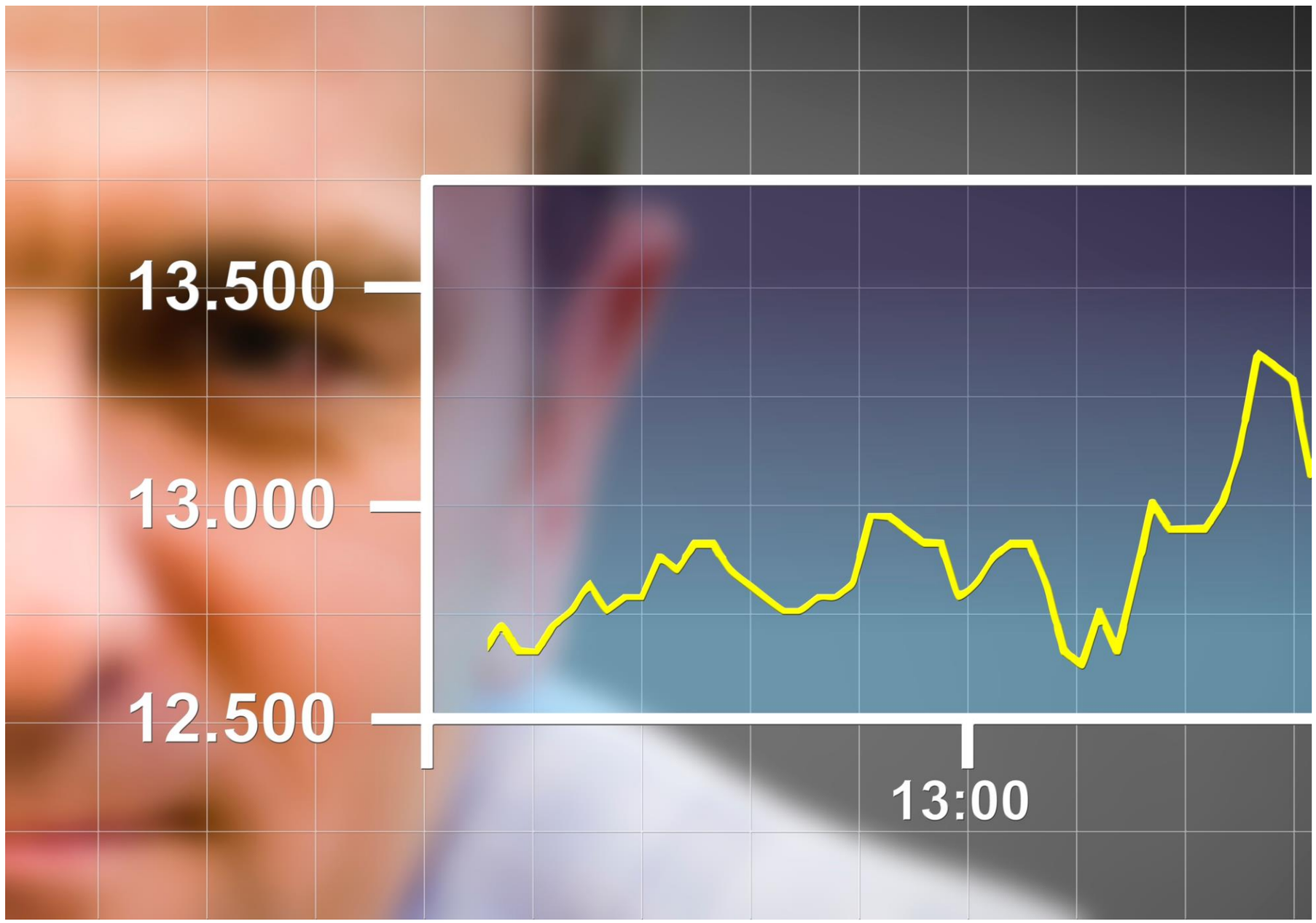
Latham, J.R. and Vinyard, J. (2011) *Organization Diagnosis, Design and Transformation: A Baldrige User's Guide* (5th ed.) Wiley: Hoboken. p. 508



JOHN LATHAM
LEADERSHIP + DESIGN

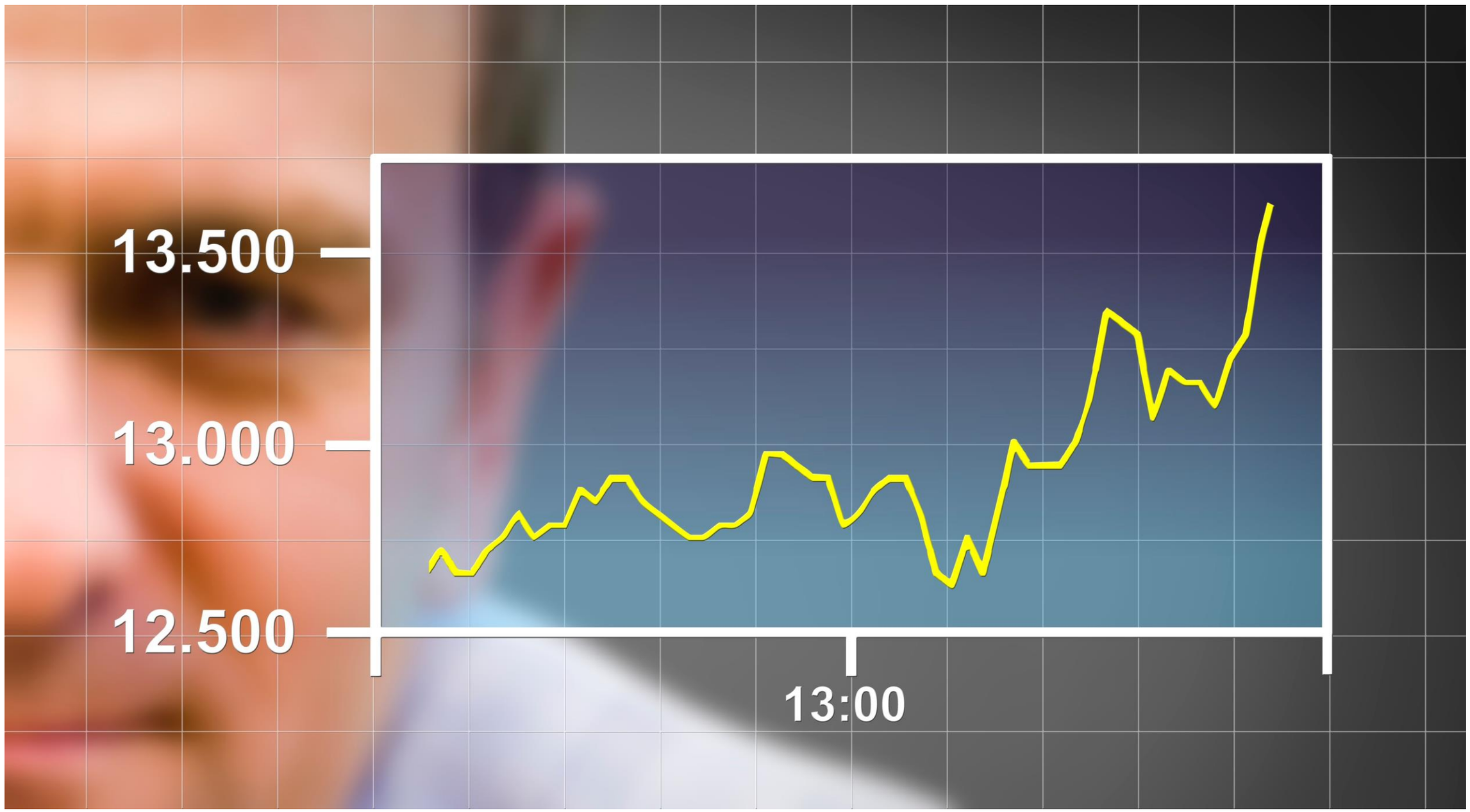
Understanding Variation

Understanding Variation

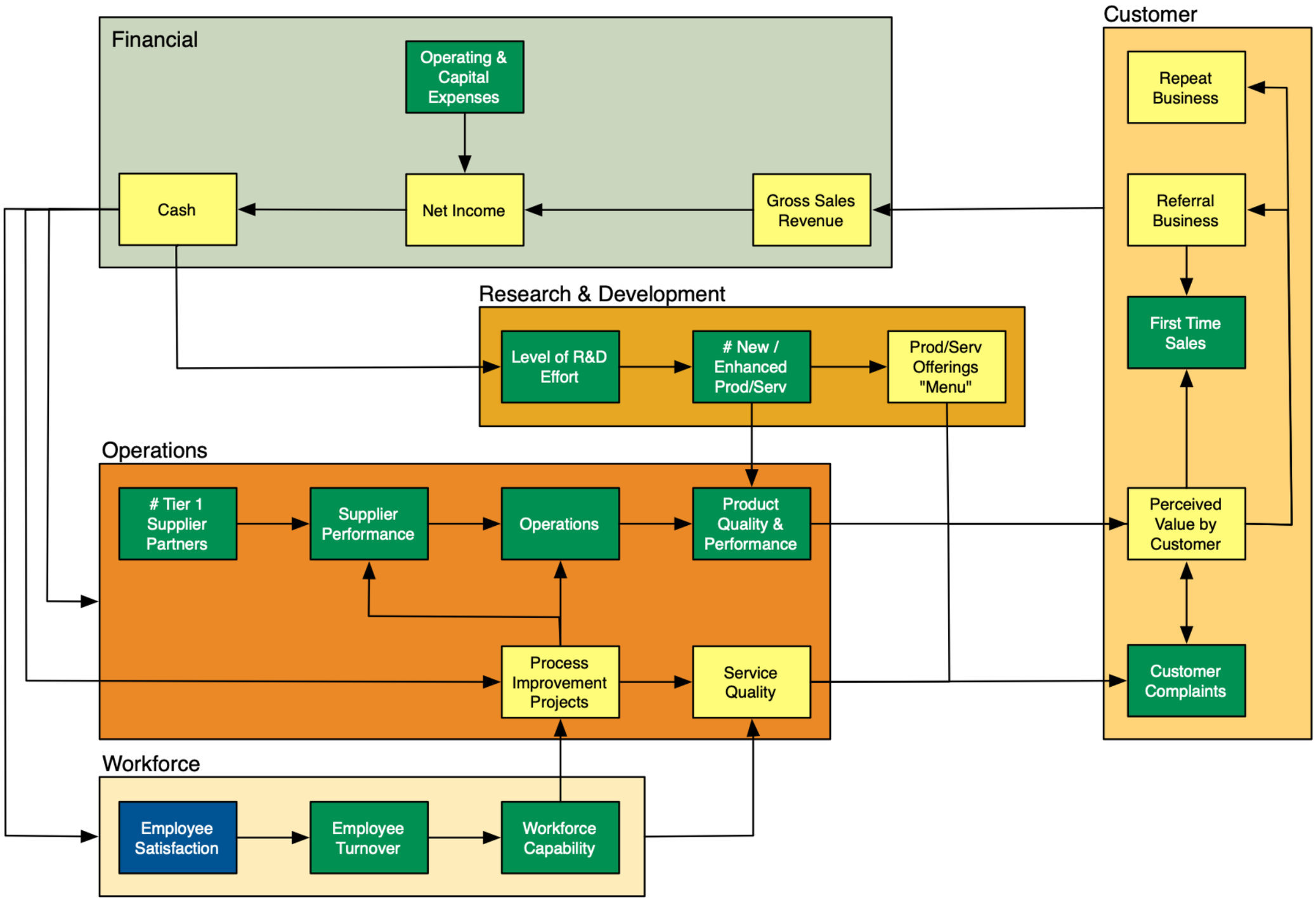


JOHN LATHAM
LEADERSHIP + DESIGN

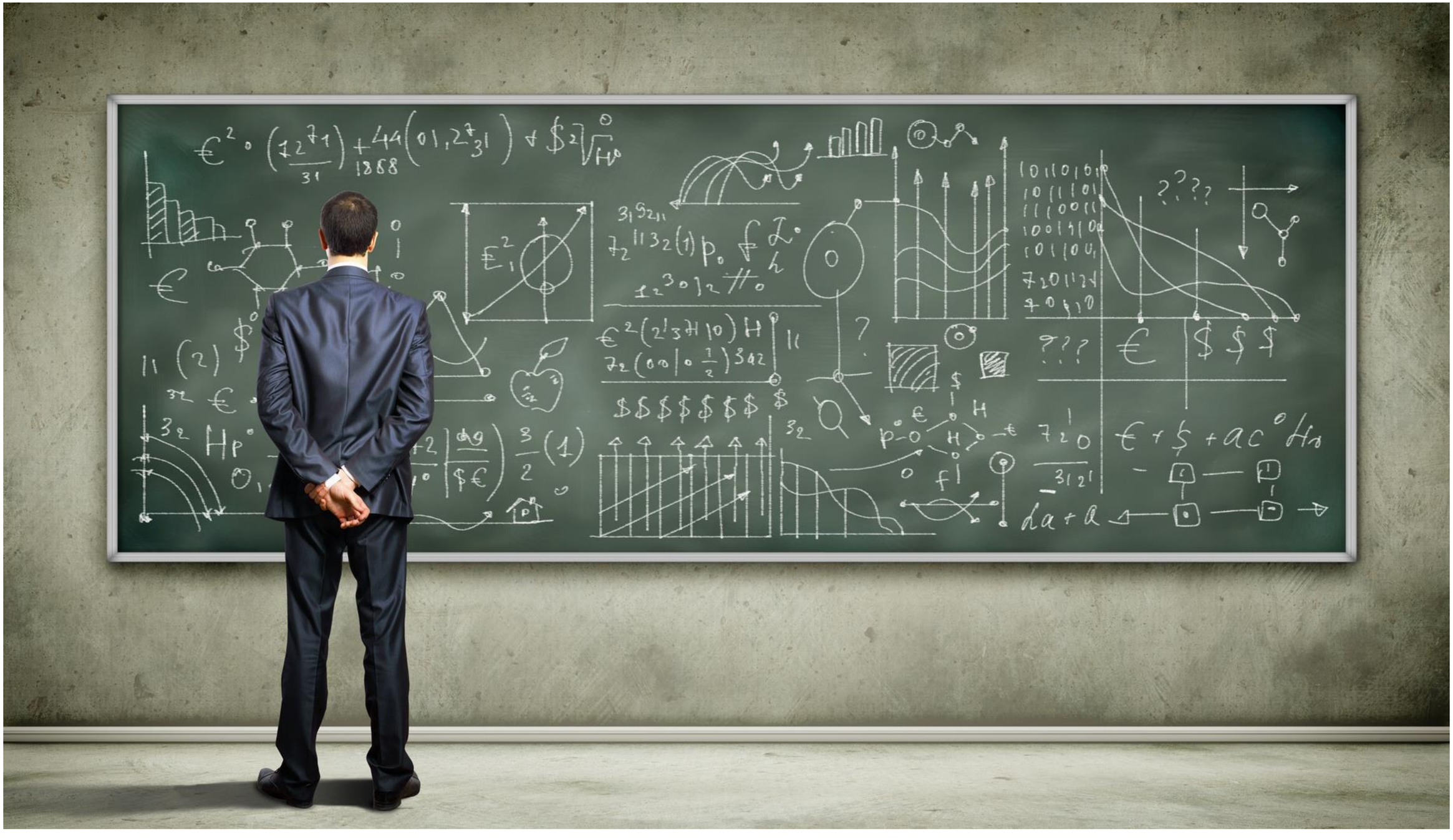
Understanding Variation



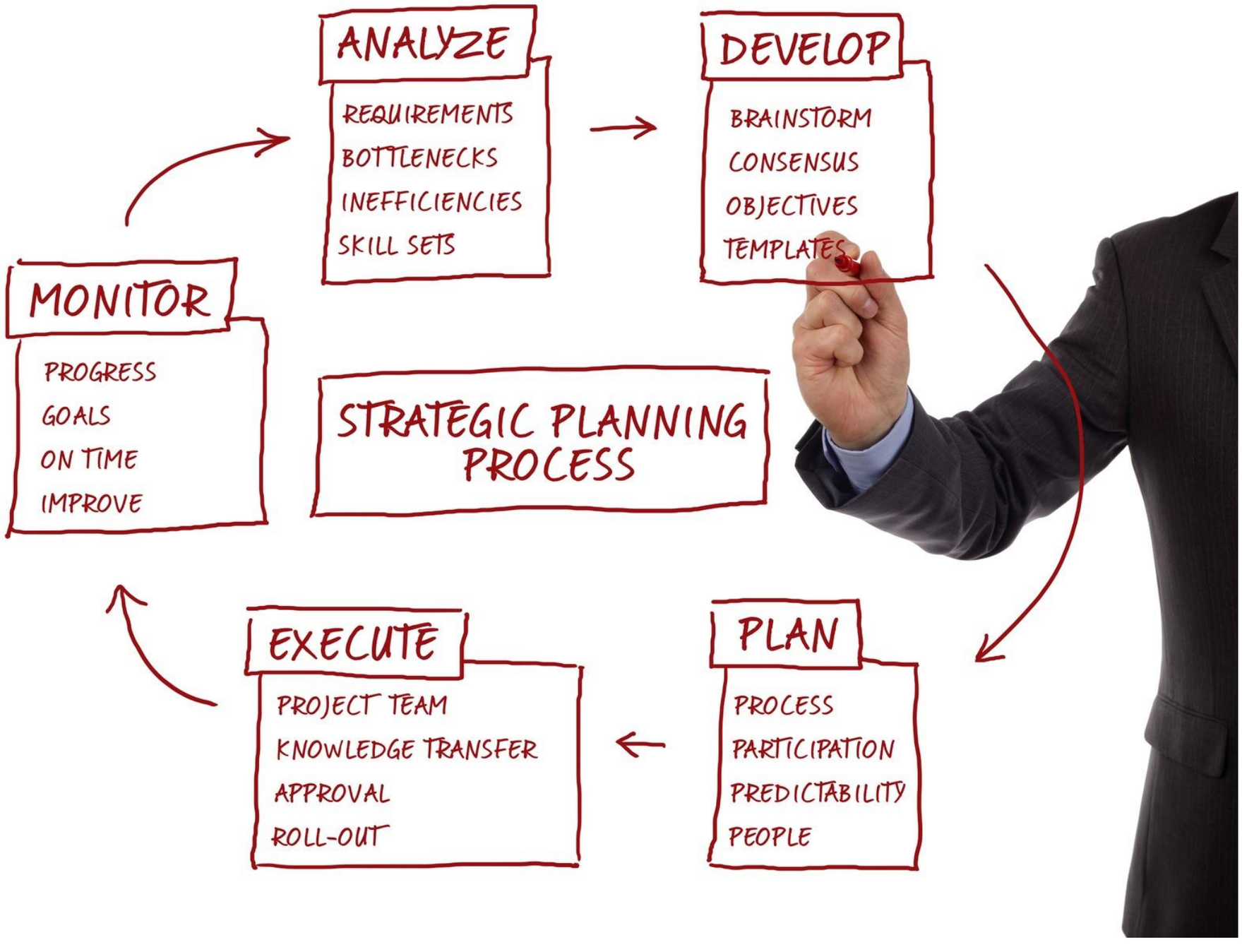
System + Scorecard Perspective



4. Theory of Knowledge about Organizations



Strategy and the Scientific Method



Three Perspectives of Knowledge

- **Positivist**
  - Physical processes (e.g., manufacturing)
  - Variables can be reliably measured using quantitative methods
  - Behavior of variables is often highly predictable
  - Context free (well mostly, we assume)
- **Constructivist**
  - Human processes that are creative, complex decisions, etc. (e.g., strategy)
  - Key constructs are often difficult or impossible to measure
  - Humans don't obey any immutable natural laws of science, come in infinite variety, when combined into groups the permutations are endless…
  - Highly dependent on context
- **Pragmatic - Reality is Mixed**
  - Combinations of predictable physical processes and less predictable human interactions…
  - The mixed reality is why Deming's system of profound knowledge contain the four dimensions including understand knowledge itself.

Strategy Map

Financial and Market Goals and Objectives

Society + Environment Goals and Objectives

Supplier + Partner Product and Service Quality Goals and Objectives

Internal Customer Satisfaction and Production Goals and Objectives

Product and Service Quality Goals and Objecives

Customer Satisfaction Goals and Objectives

Information, Analysis, and Knowledge System Goals and Objectives

Workforce Development Goals and Objectives

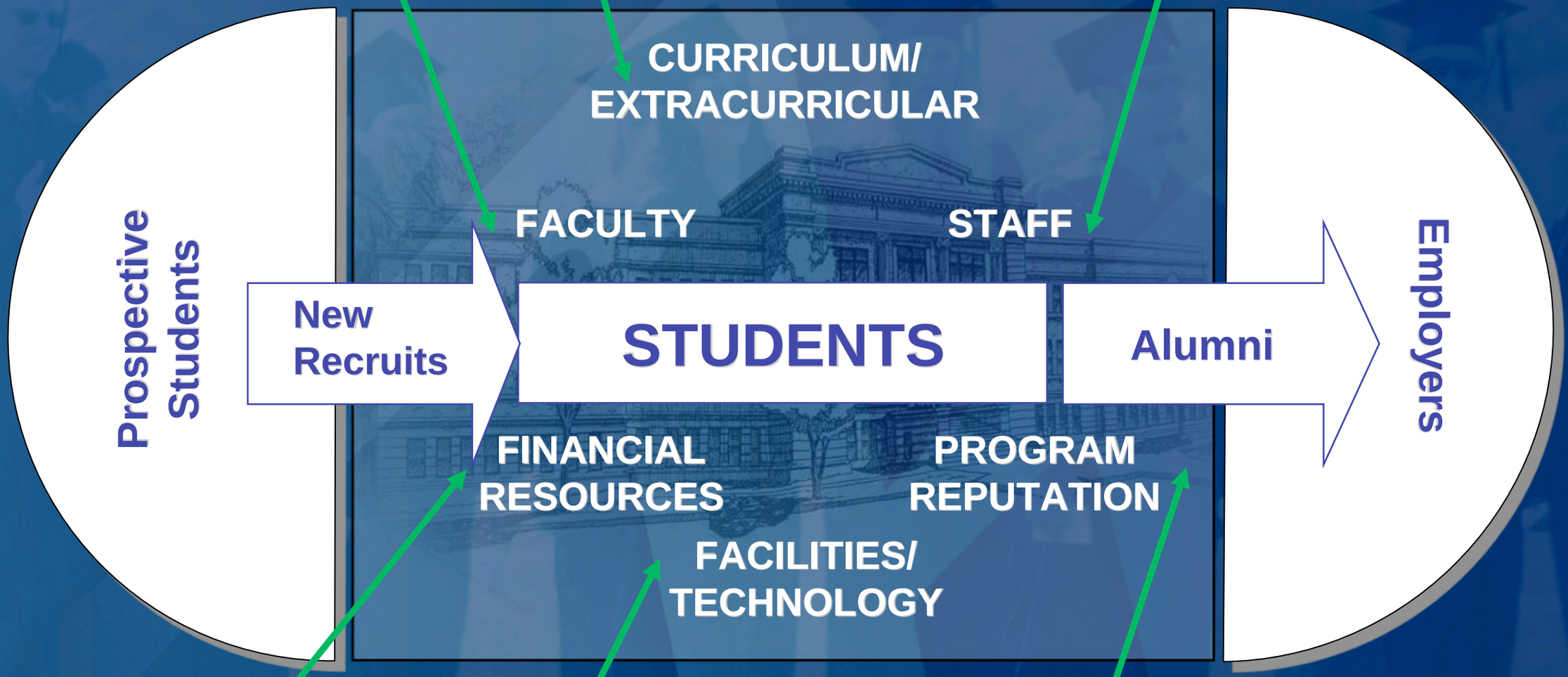
Malcolm Baldrige National Quality Award
2004 Award Recipient

Defining a *Student-Centered Process Framework*

Academic, Professional

Current, Relevant, Experiential, Integrative

Experienced, Capable, Customer Service



Maintenance, Support Growth

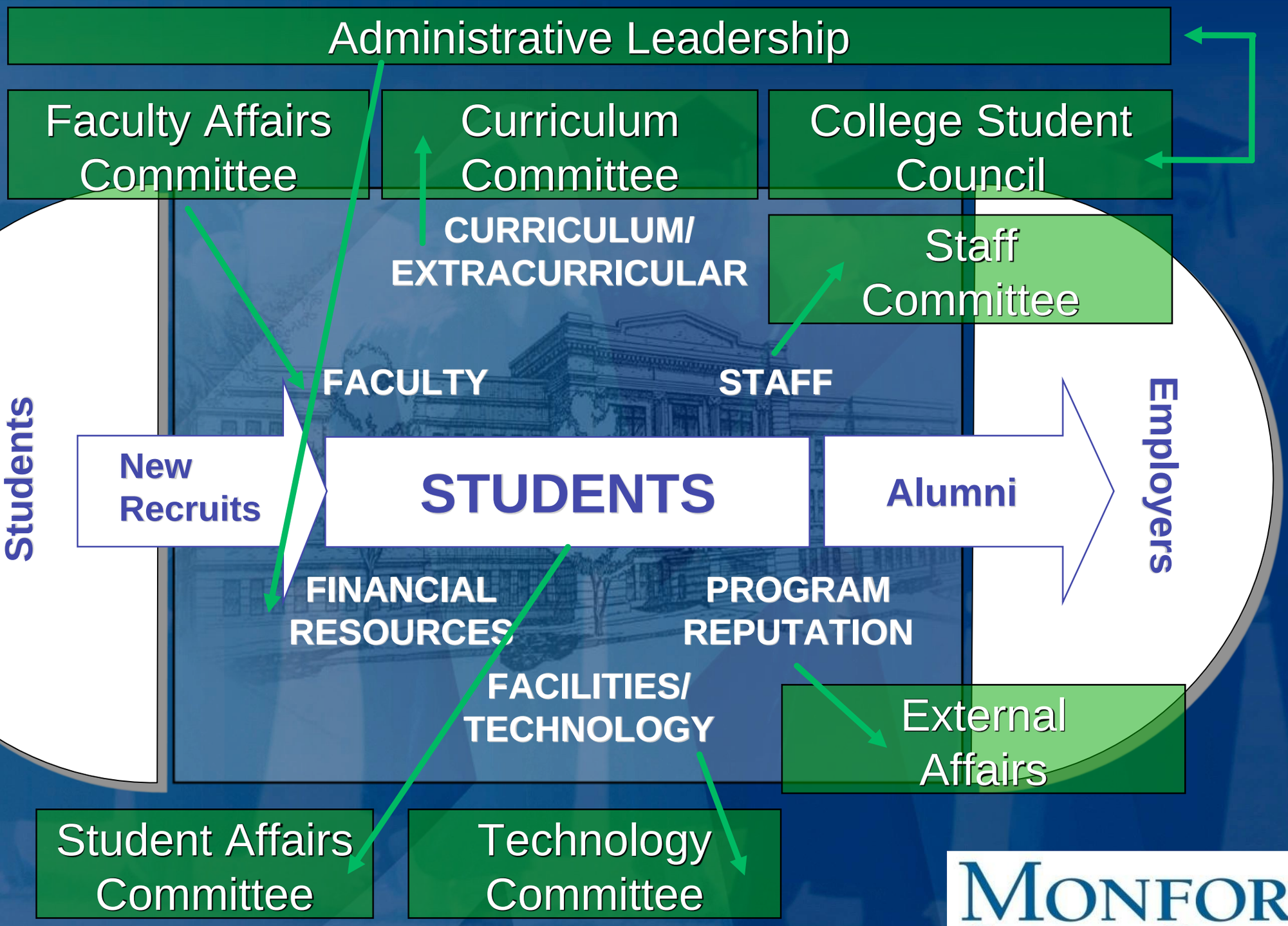
Supports Learning, Current, Matched to Industry

High-Quality Improving

MONFORT COLLEGE of BUSINESS
University of Northern Colorado

Malcolm Baldrige National Quality Award
2004 Award Recipient

Utilizing a *Management Control System…*



MONFORT COLLEGE of BUSINESS
University of Northern Colorado

Malcolm Baldrige National Quality Award
2004 Award Recipient

Utilizing a *Management Control System…*

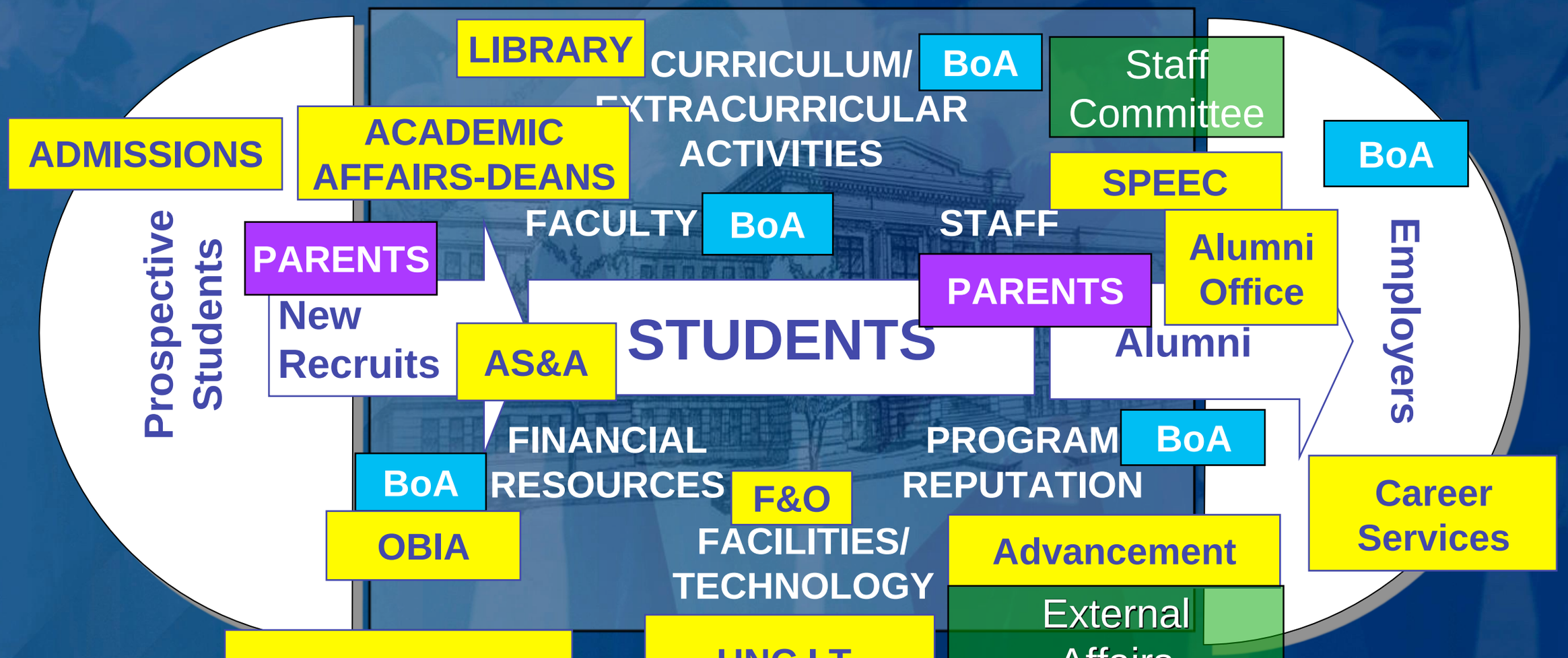
Administrative Leadership

Faculty Affairs Committee

Curriculum Committee

Student Advisory Board

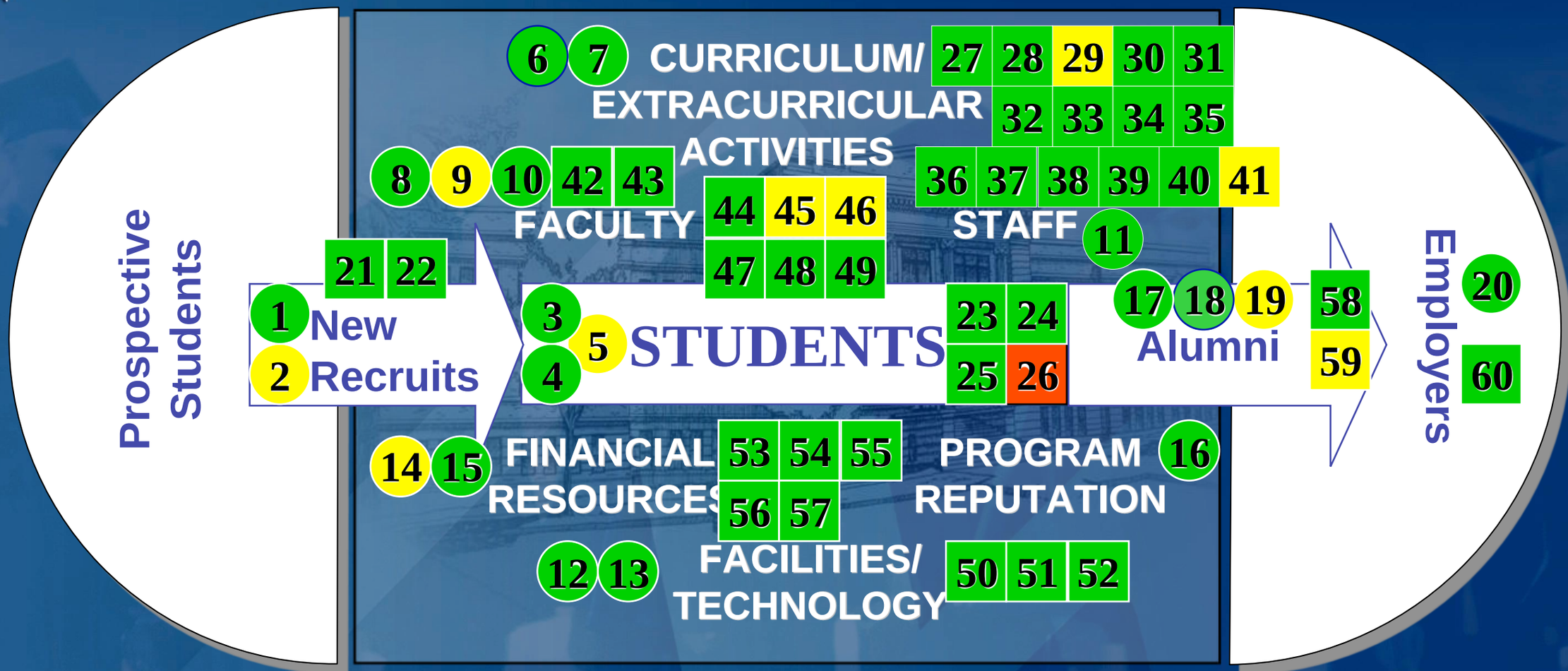
UNC Student Rep. Council



MONFORT COLLEGE of BUSINESS
University of Northern Colorado

Malcolm Baldrige National Quality Award
2004 Award Recipient

Building an Innovative Business School—Conducting an *Organizational Performance Review*



= Key Performance Indicator (improving, same/1-yr. decline, ≥2-yr. decline)

= Supporting Performance Indicator (improving, same/1-yr. decline, ≥2-yr. decline)

Fall 2004 Data

MONFORT COLLEGE of BUSINESS
University of Northern Colorado

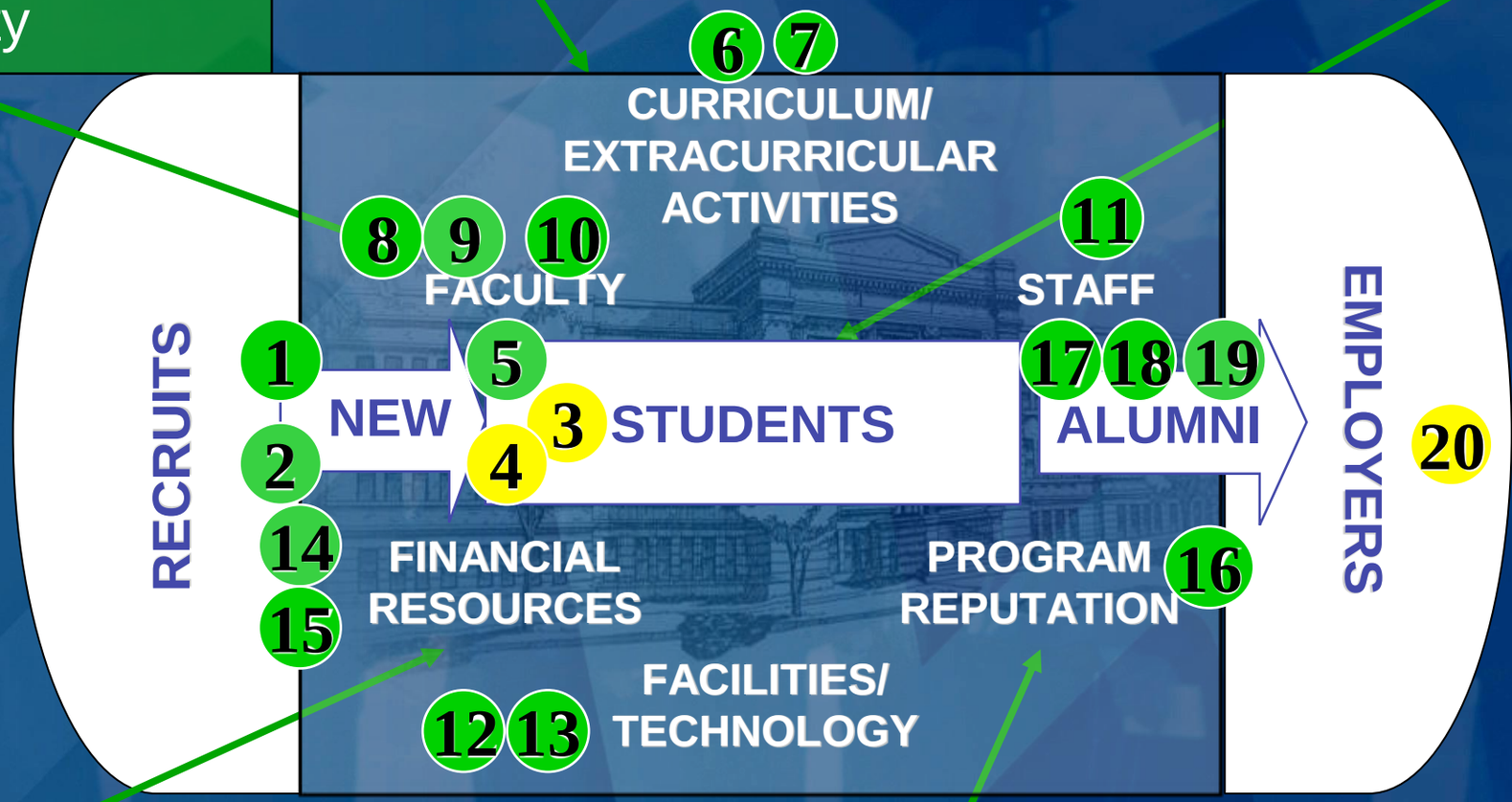
MCB Metrics Aligned with Strategy

Malcolm Baldrige National Quality Award
2004 Award Recipient

Strategic Objective #2: Maintain a High-Quality Curriculum

Strategic Objective #1: Build High-Quality Student Population

Strategic Objective #3: Maintain High-Quality Faculty



100% of KPIs align to one of five strategic objectives.

Strategic Objective #4: Maintain Adequate Financial Resources

Strategic Objective #5: Build Program Reputation To Match Program Quality

Fall 2006 Data

MONFORT COLLEGE of BUSINESS
University of Northern Colorado

MCB Metrics Aligned with Strategy

Malcolm Baldrige National Quality Award
2004 Award Recipient

Strategic Objective #1: Build High-Quality Student Population

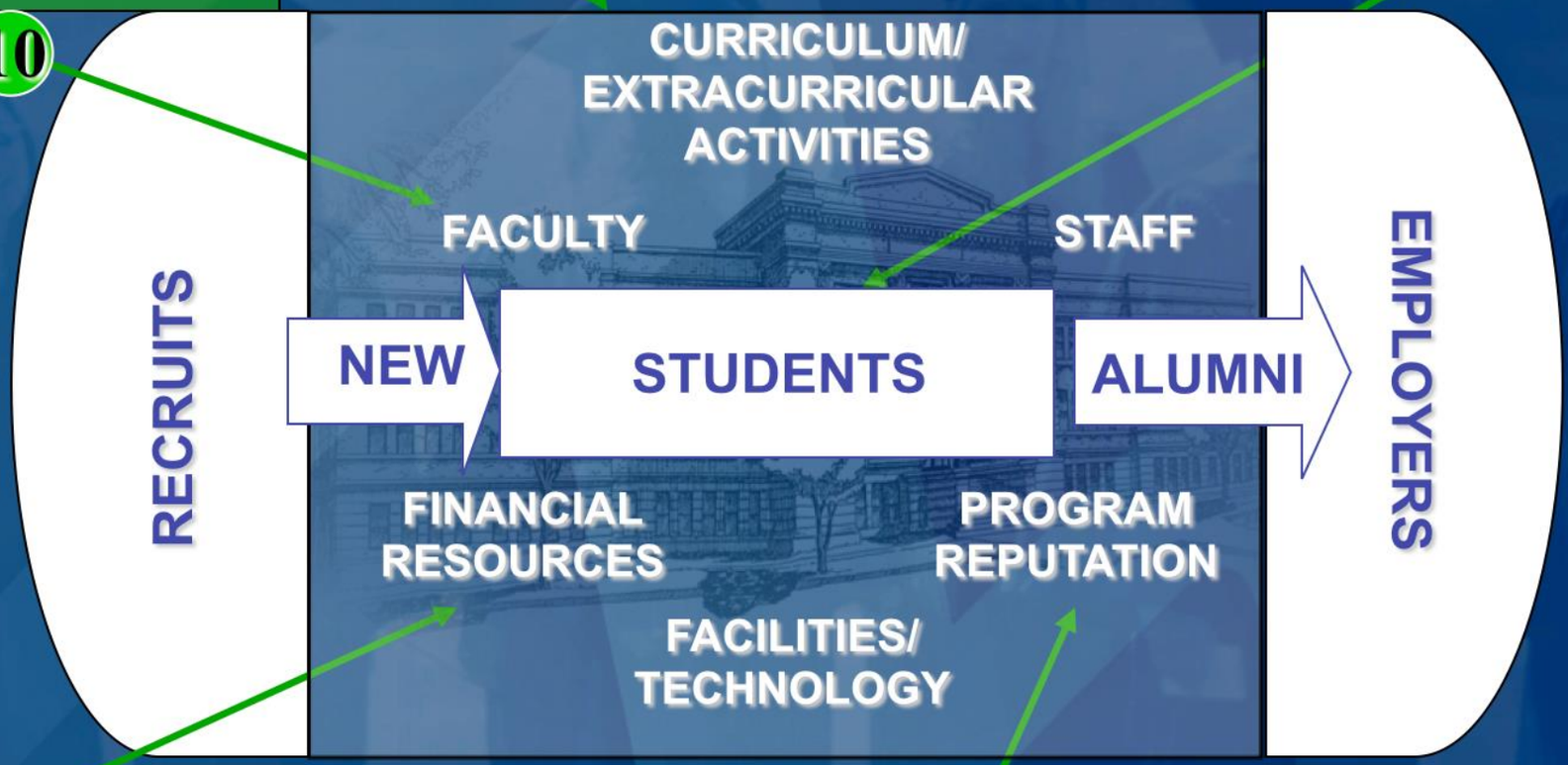
1 2 3 4 5 20

Strategic Objective #2: Maintain a High-Quality Curriculum

6 7

Strategic Objective #3: Maintain High-Quality Faculty

11 8 9 10



100% of KPIs align to one of five strategic objectives.

12 13 14 15

Strategic Objective #4: Maintain Adequate Financial Resources

16 17 18 19

Strategic Objective #5: Build Program Reputation To Match Program Quality

Fall 2006 Data

MONFORT COLLEGE of BUSINESS
University of Northern Colorado

JOHN LATHAM
LEADERSHIP + DESIGN

Alignment Matrix

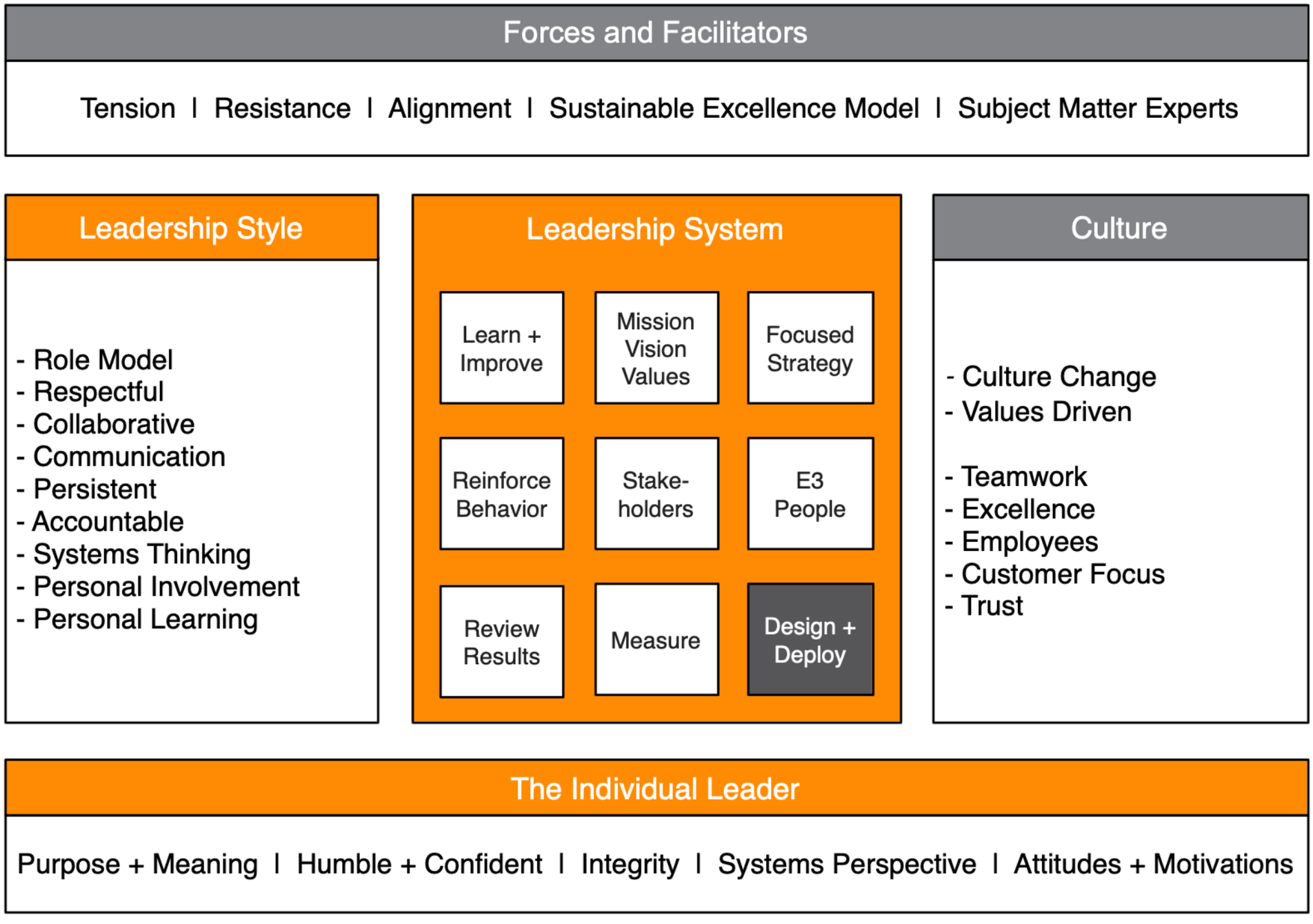
	Stakeholders	Strategy	Systems	Scorecard
Investors	Owners, Donors, & Taxpayers	Financial Goals and Action Plans	Efficient and Effective Processes	Financial Performance
Customers	Segments, Groups, Markets & Products/ Services	Customer and Market Goals and Action Plans	Value Creation Processes	Satisfaction, Dissatisfaction and Market Performance
Employees	Types (incl. Volunteers) & Demographics	Workforce Goals and Action Plans	Work Systems, Development, and Well-being	Satisfaction, Learning, Performance, and Well-being
Suppliers and Partners	Types & Segments	Supplier and Partner Goals and Action Plans	Inputs and Support to Processes	Satisfaction & Performance
Community and Public	Communities, Public, & Regulatory Environment	Community and Public Goals and Action Plans	Community Support and Safe Products, Services, & Operations	Regulatory, Legal, and Organizational Citizenship
The Natural Environment	Current and Future Generations	Goals and Action Plans	Environmentally Sound & Safe Products, Services, & Operations	Energy and Resource Use and Waste and Emissions

"We are what we repeatedly do. Excellence, therefore, is not an act, but a habit."

Aristotle

JOHN LATHAM
LEADERSHIP + DESIGN

Leadership System Integration



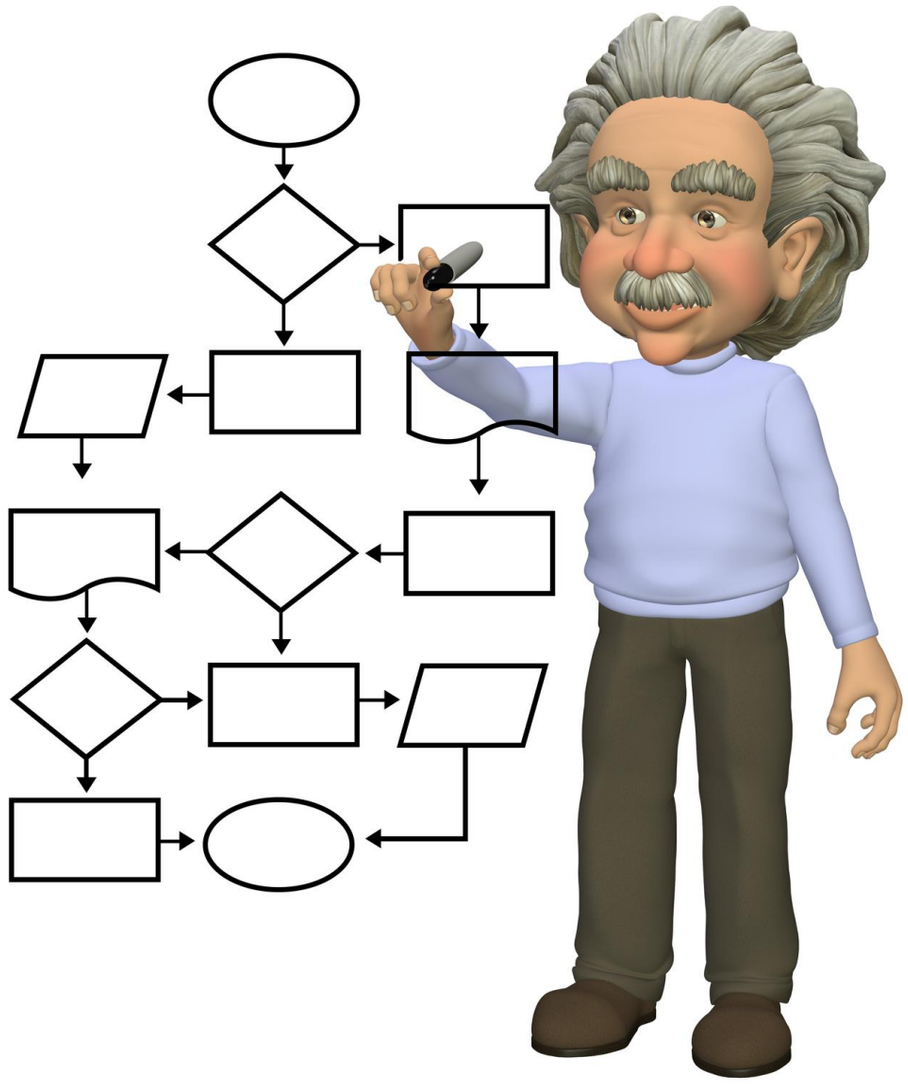
Adapted from: Latham, J. R. (2013). A framework for leading the transformation to performance excellence part I: CEO perspectives on forces, facilitators, and strategic leadership systems. *Quality Management Journal, 20*(2), 22.

Next Steps

- Develop your own system, stakeholder, scorecard, and strategy maps + alignment matrix

- Read Leadership Framework Papers (Latham 2013 a, b)

- Develop your own leadership system and integrate the four maps



JOHN LATHAM
LEADERSHIP + DESIGN

"If it exists...

It must be possible!"

Amory Lovins
Rocky Mountain Institute

References

- Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting* (1st ed.). San Francisco: Jossey-Bass.

- Deming, W. E. (1994). *The new economics: For industry, government, education* (2nd ed.). Cambridge, MA: Massachusetts Institute of Technology Center for Advanced Engineering Study (MIT CAES).

- Larson, M., Latham, J. R., Appleby, C. A., & Harshman, C. L. (2012). CEO attitudes and motivations: Are they different for high performing organizations? *Quality Management Journal, 19*(4), 15.

- Latham, J. R. (2013a). A framework for leading the transformation to performance excellence part I: CEO perspectives on forces, facilitators, and strategic leadership systems. *Quality Management Journal, 20*(2), 22.

- Latham, J. R. (2013b). A framework for leading the transformation to performance excellence part II: CEO perspectives on leadership behaviors, individual leader characteristics, and organizational culture. *Quality Management Journal, 20*(3), 22.

- Latham, J. R., & Vinyard, J. (2011). *Organization diagnosis, design and transformation: A Baldrige User's Guide* (5th ed.). Hoboken NJ: John Wiley & Sons.

- Latham, J. R., & Vinyard, J. (2010). *Baldrige user's guide: Organization diagnosis, design, and transformation* (4th ed.). Hoboken, NJ: John Wiley and Sons.

- Wayhan, V. B., Khumawala, B. M., & Balderson, E. L. (2010). An empirical test of Deming's chain reaction model. *Total Quality Management & Business Excellence, 21*(7), 17. doi: 10.1080/14783363.2010.483107

- Wu, K.-C. (1928). *Ancient Chinese political theories*. Shanghai, China: The Commercial Press, Limited.