



NORTHROP GRUMMAN

DEFINING THE FUTURE

March 24, 2004

Enterprise Transformation: Measures and Incentives

Lean Aerospace Initiative Plenary Conference

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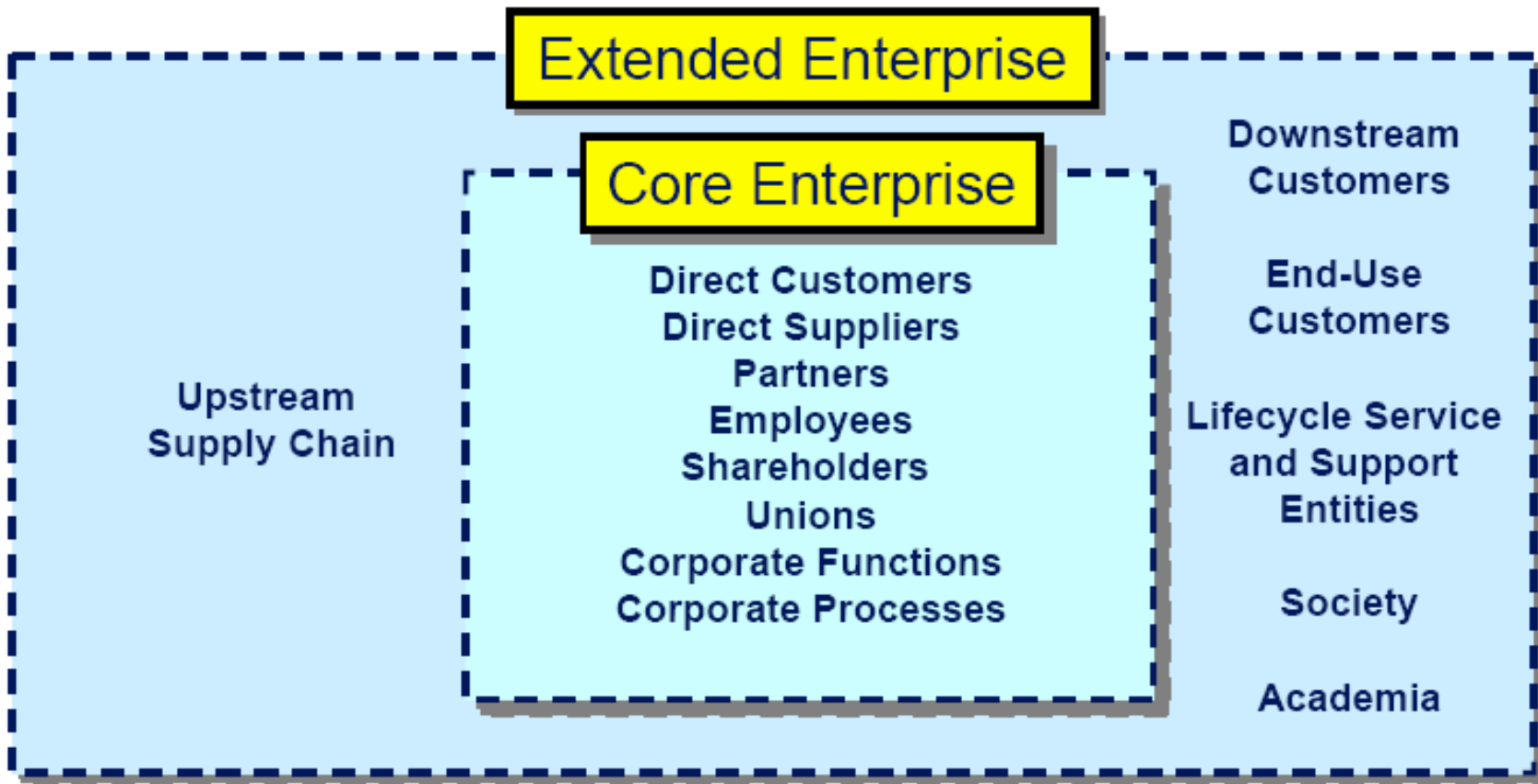


Outline

- **Why the Lean Enterprise?**
- **Transformation Measures**
- **Expected Outcomes**
- **Incentives to become a Lean Enterprise**
- **Summary**



The Enterprise





The Lean Enterprise

A Lean Enterprise efficiently creates value for its multiple stakeholders by employing Lean principles and practices in all business processes that extend through the company and its supply chain.



Why the Lean Enterprise?

- **Lean manufacturers outperforms non-lean manufacturers (cost, time, quality - proven), now move beyond the manufacturing focus**
- **85% of enterprise costs reside outside of manufacturing, indirect and overhead costs are greater than manufacturing direct costs**
- **Most manufacturing costs are locked-in during design**
- **The Lean Enterprise focuses on value creation for both internal and external customers to improve the timeliness, cost, and quality as a result of processes, not in spite of them**
- **The Lean Enterprise will outperform a non-lean enterprise by delivering greater value with equal or fewer input resources**



Transformation Measures

- **Leading, Lagging, and Outcome**

- **Leading**

- Establishment of appropriate Training/Staffing, Lean Behaviors (Measure with LESAT), Lean Tools in use (next chart) coupled with behavior, Employee Empowerment for Continuous Improvement

**Short Term Cost
(< 1 year)**

- **Lagging**

- Cycle time reduced (increased VA%, responsiveness to customer needs)
- WIP, Inventory reduced (information and material)
- Work environment improvements (reduced workload, safer, cleaner, unambiguous management signals via open and timely communication)
- Quality improvements (lifecycle - reduced scrap/rework, zero escapes in all processes, definition of rework/scrap in design and development needed)
- Capacity improvements (productivity, floor space, asset reduction, equipment availability)
- Cash Flow Increase (I turns, sales per employee, net working capital, ROIC)

**Mid-term Gain
(1-3 years)**

- **Outcome**

- Improved Customer Satisfaction
- Improved Employee Satisfaction
- Improved Supplier Satisfaction
- Increased WEV

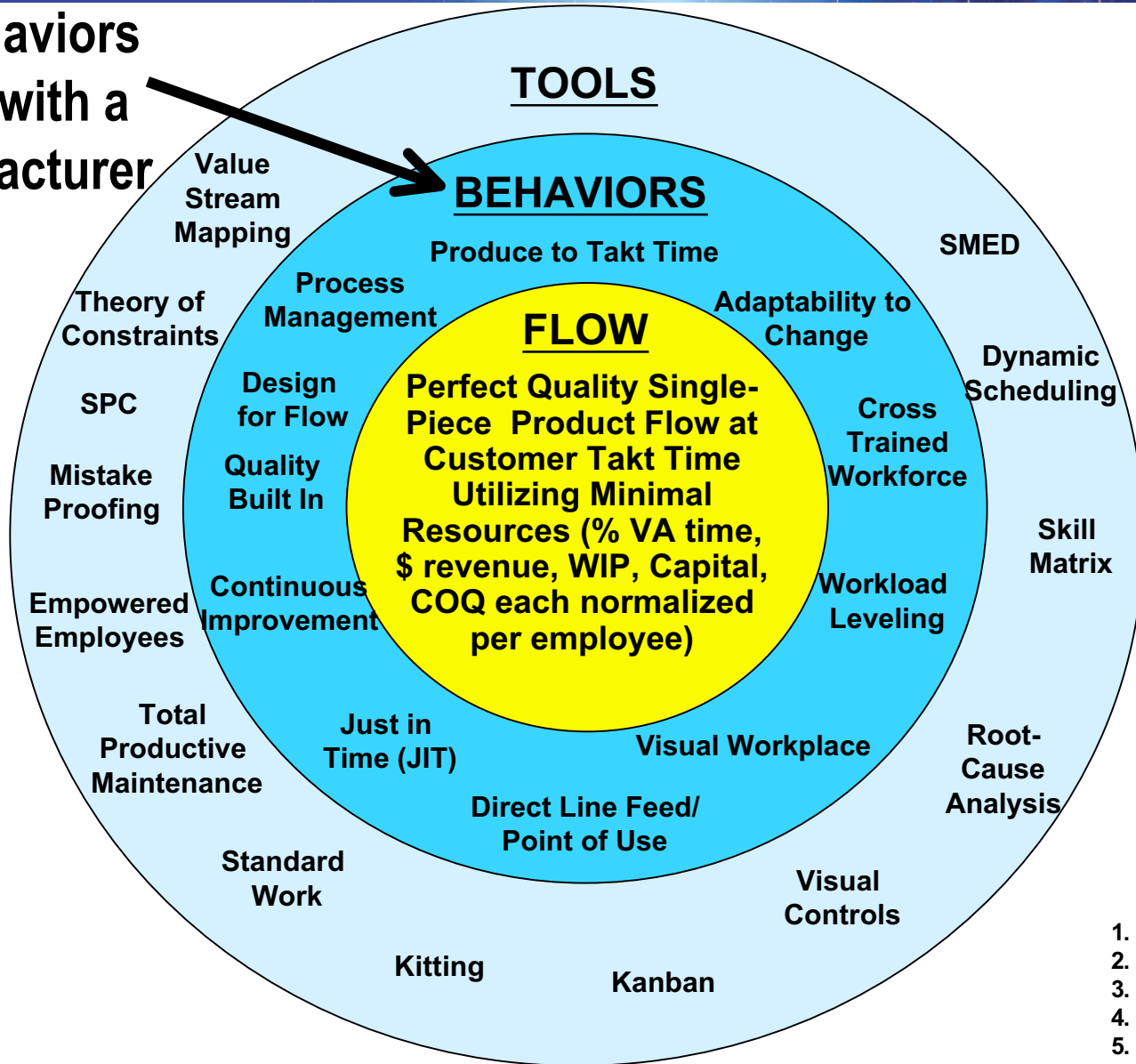
**Long Term
Competitive Advantage
(>3 years)**

WARRANTED EQUITY VALUE (WEV)

The present value of future equity cash flows that management expects a business to generate, given: an objective (fact-based) assessment of its market economics and competitive position, and its chosen strategy over the short and long term



**Sample Behaviors
Associated with a
Lean Manufacturer**

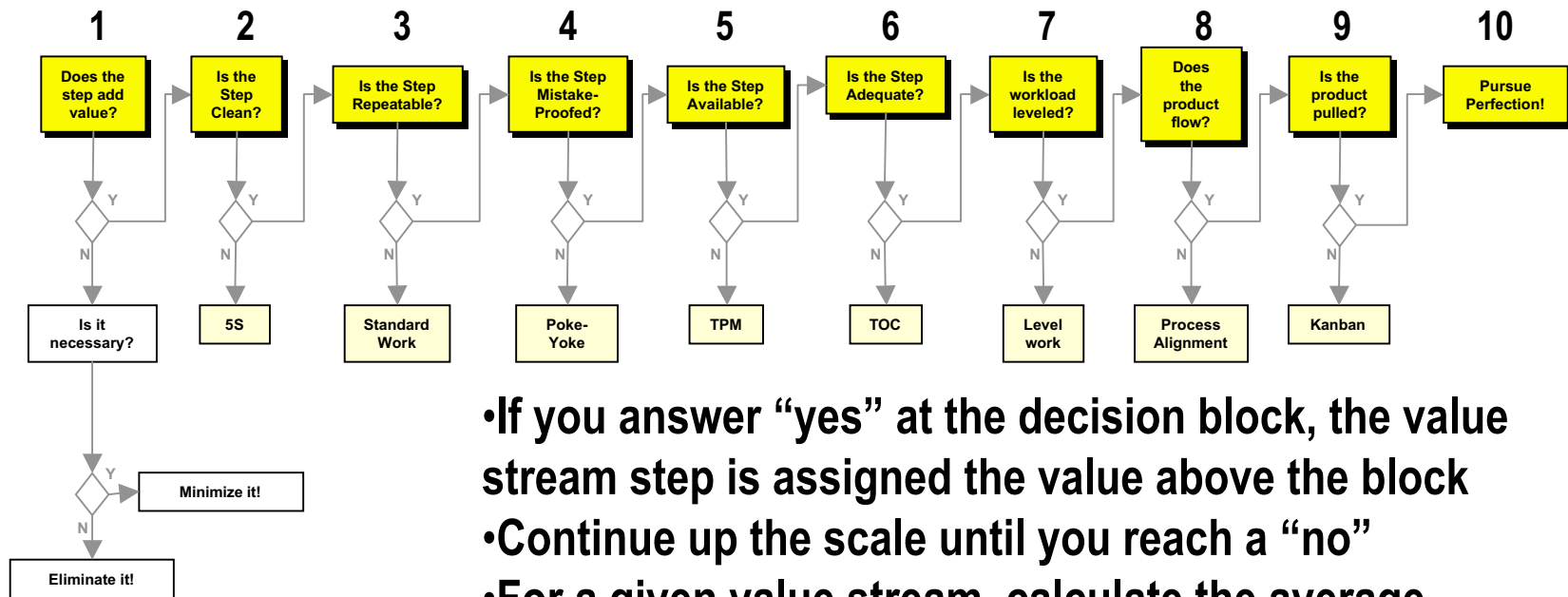


5 Lean Principles

1. Value
2. Value Stream
3. Flow
4. Pull
5. Perfection



Value Stream Maturity Scale

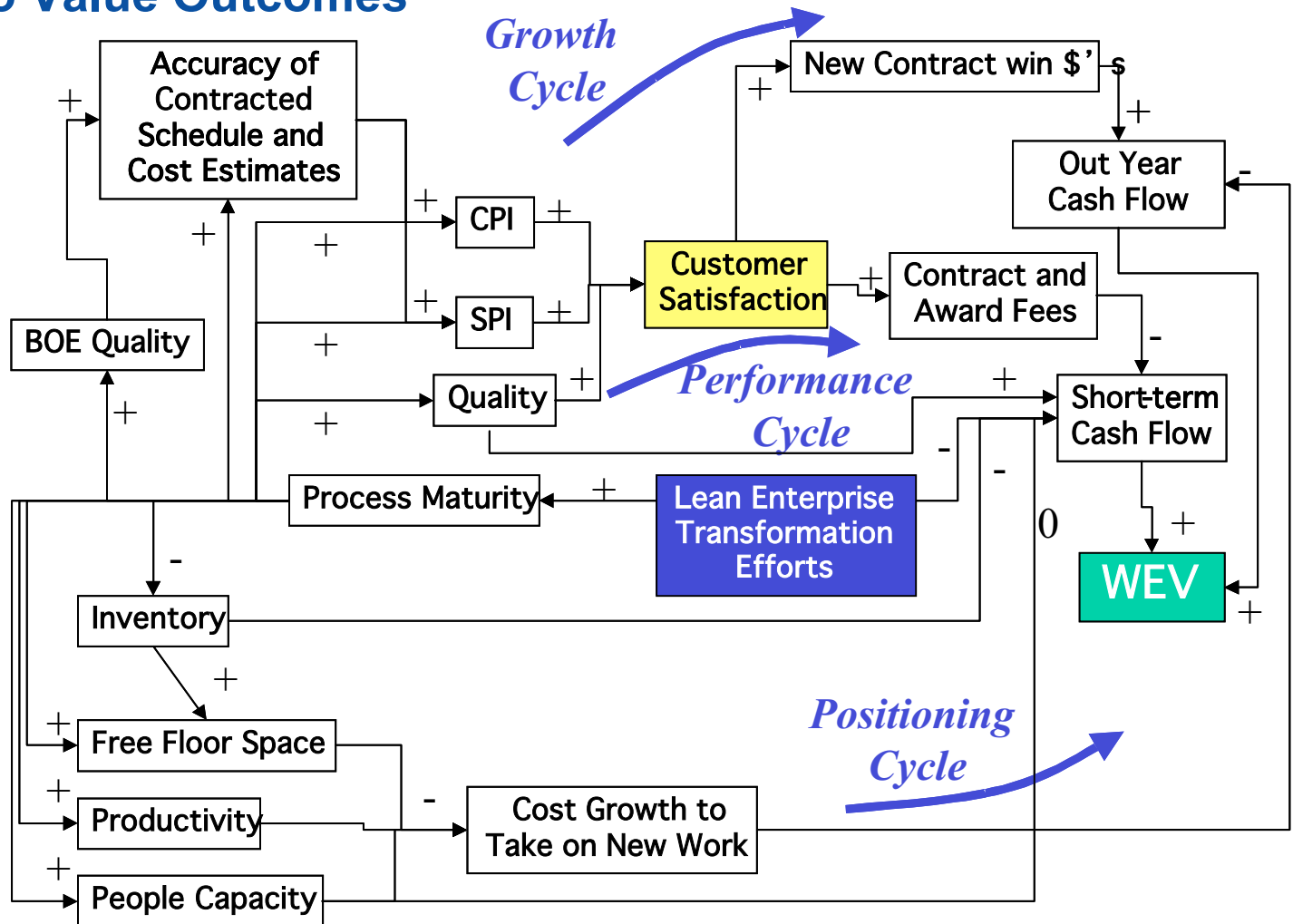


- If you answer “yes” at the decision block, the value stream step is assigned the value above the block
- Continue up the scale until you reach a “no”
- For a given value stream, calculate the average maturity of the steps = $\text{sum}(\text{step maturity})/n$
- Maturity will correlate with reduced cycle time, improved quality, and improved cost allowing for the creation of predictive relations for estimating potential gains



Expected Outcomes: Relating Lean Enterprise Transformation to Value Outcomes

- Performance, Positioning and Growth are all driven by Lean continual improvement efforts that drive process maturity
- The outcome measure of Warranted Equity Value (WEV) is increased by continual improvement efforts that improve all three strategic cycles, but with differing time scales
- Does not include new technology introduction loop or multi-stakeholder value interaction





Incentive to become a Lean Enterprise

- **What will drive enterprises to**
 - **Learn Lean Enterprise thinking? (external pressure, internal desire)**
 - **Transition to a Lean Enterprise? (tension - good or bad, business case)**
 - **Support/fund/staff/participate in Lean Enterprise transformation? (belief)**
 - **Act as a Lean Enterprise? (understanding)**
 - **Prevent regression to an un-lean state? (incentives/barriers)**
- **We must consider each of these questions from multiple power perspectives**
 - **Leadership Level, Management/Supervisor Level, and the Worker Level**



Incentive Categories

- **Neutral**
 - Measure only what is to be improved
- **Positive**
 - Reward the desired behavior
- **Negative**
 - Penalize the undesired behavior



Incentives

- **Incentives to learn Lean (individual/group)**
 - Directed, Encouraged, Punished
- **Incentives to act Lean (individual/group)**
 - Directed, Encouraged, Punished
- **Only a combination of both learning and acting incentives will ensure effective change occurs**
- **Incentives exist at both the individual and group levels in NG IS**
 - AOP Goals, PMP, Employee Results Sharing, Employee Involvement Recognition Awards
- **Group incentives to act Lean can be difficult if people have failed to internalize the mental model that links lean transformation to enterprise-level improvements which lead to group rewards**
- **We are not good at preventing regression, part of which is due to a lack of succession planning at all levels of employment**



Creating Meaningful Change¹

Stage 1 - Unfreezing
Resistance to Change
Education and Awareness



Stage 2 - Movement
Change Agents
Change in Behavior
Empowerment



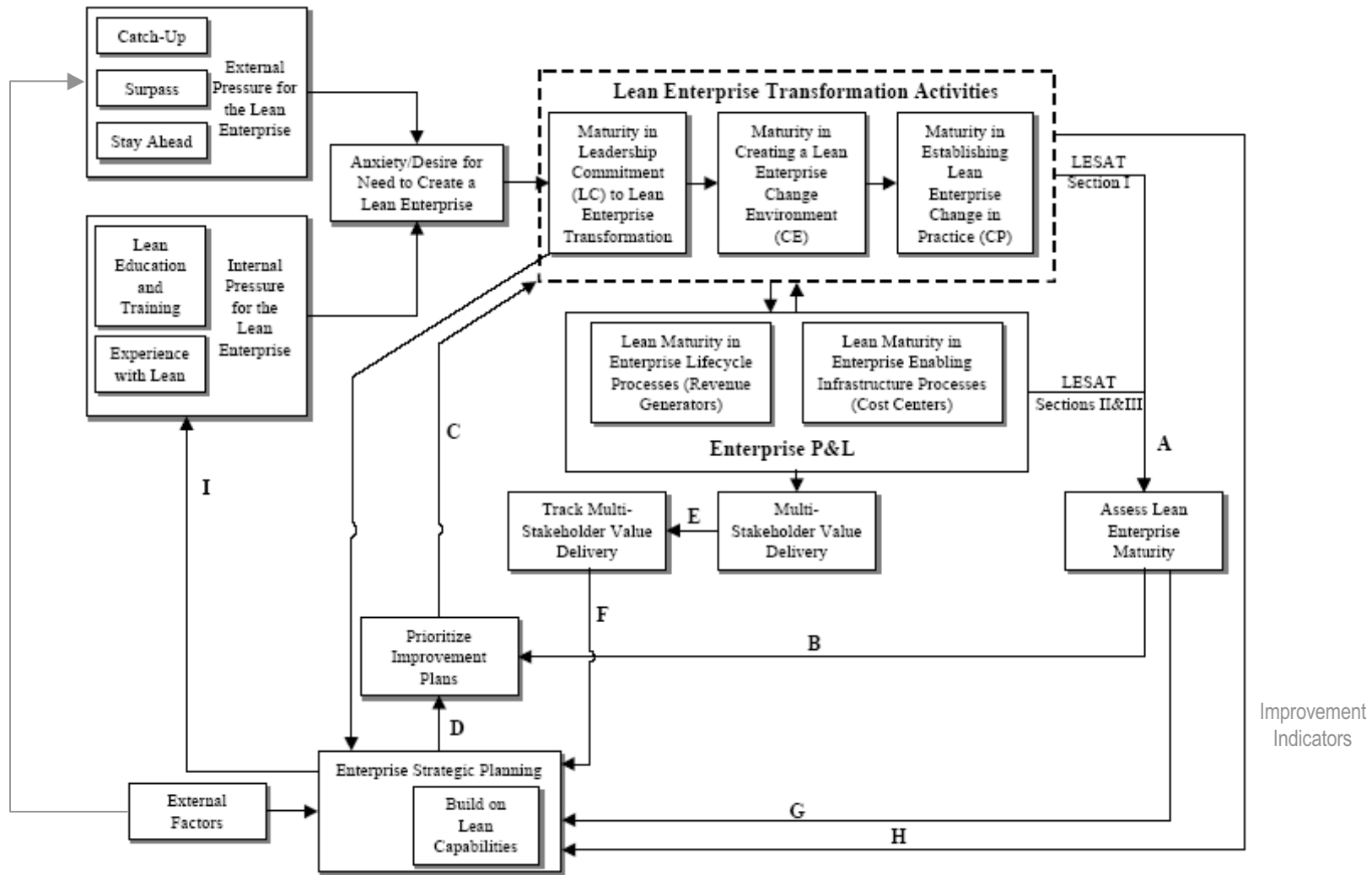
Stage 3 - Refreezing
Reinforce New Behavior
Feedback Measurement
Alignment of Rewards

- Change will occur when the desired state is viewed by the individual as a better option than the existing state (tension/comfort)
- A culture change occurs when enough individuals make the change

¹ Edgar Schein, 1999, *The Corporate Culture Survival Guide*



Lean Enterprise Transformation Feedback Model



Improvement Indicators



Summary

- **The Lean Enterprise focus addresses a greater portion of cost, time, and quality associated with delivering value to our customers and end users, as opposed to a pure manufacturing focus**
- **Transformation Measures consist of Leading, Lagging, and Outcome measures – the mental model of their interconnectivity and time constants is paramount to managing successful lean transformation**
- **Expected Outcomes include increasing customer, shareholder, employee and supplier satisfaction, which are all sources of competitive advantage**
- **Incentives to become a Lean Enterprise must**
 - Drive learning AND action
 - Address all levels of the company
 - Prevent Regression
 - Foster closed-loop improvement