The Power of Integrated CPI Solutions

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Who am I

- Chief Engineer, ITSS
- SCAMPI Lead Appraiser
- (Lean) Six Sigma Black Belt
- Member, NDIA Systems Engr Steering Committee
- Member, NDIA CMMI Working Group
- Member, CMMI-SVC Advisory Group
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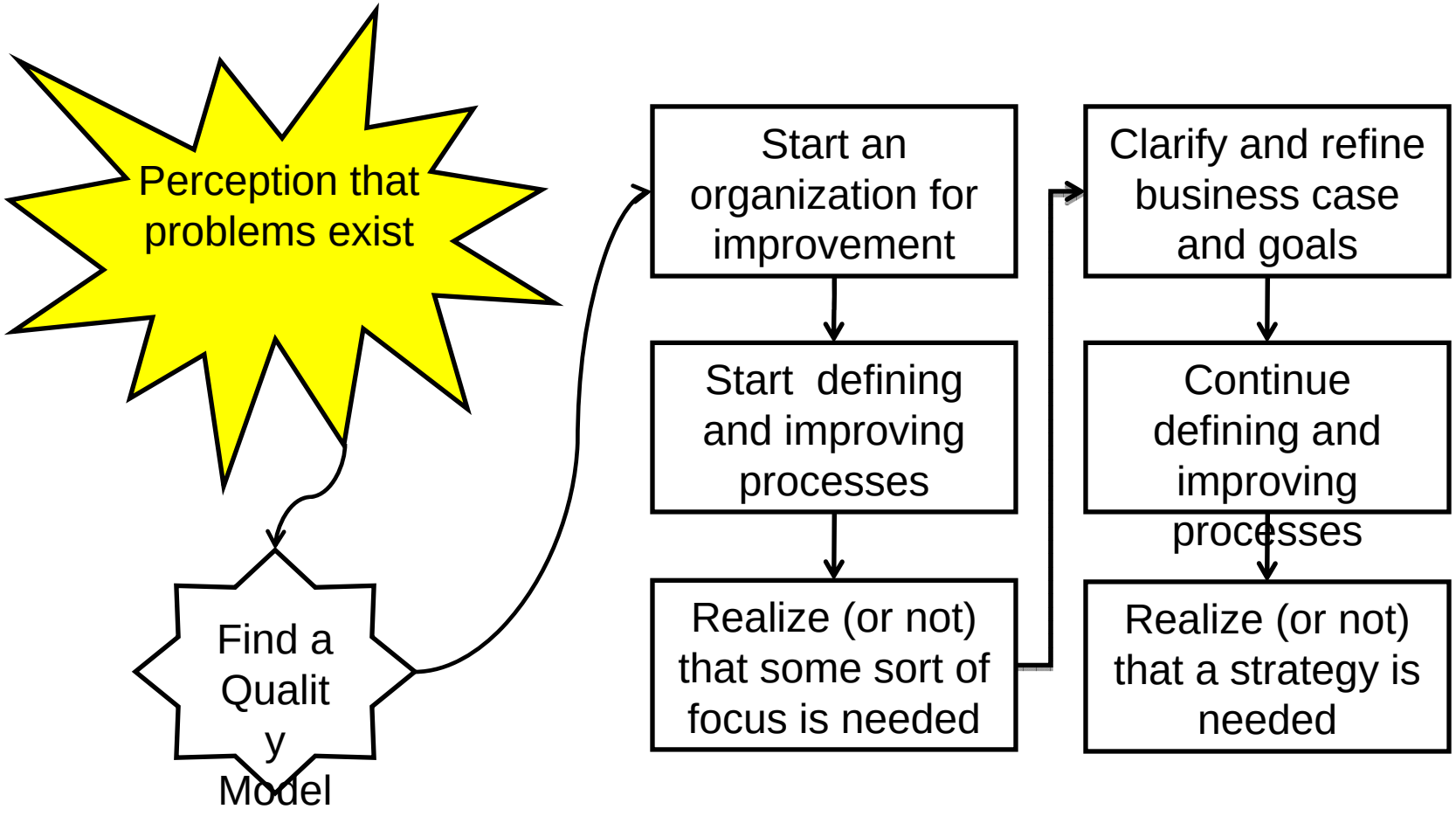
The (too often) Present State



Inefficiency, low value processes, and extended timelines for improvement

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Elements of the Desired State

- Brutally clear and concise business performance and/or quality goals
- CMMI model(s) and Process Areas reflect business case
- Strategy or approach for improvement selected or defined
- Improvement timeline is responsive to business needs
- Business leadership commits to improvement leadership
- Improvement goals met on time and within resources allocated

Setting Business Performance/Quality Goals (1 of 2)

- Use a rigorous approach to setting goals
  - Facilitated “off sites” or workshops
  - Causal analysis
  - Theory of constraints
  - Six sigma Hoshin planning
- Set a planning horizon, and refresh periodically
- Ensure business performance goals are core to business success
- Set timeframes/dates for goal accomplishment
- Use these goals to DRIVE the improvement program
- Understand that some goals will come from the bottom up

Setting Business Performance/Quality Goals (2 of 2)

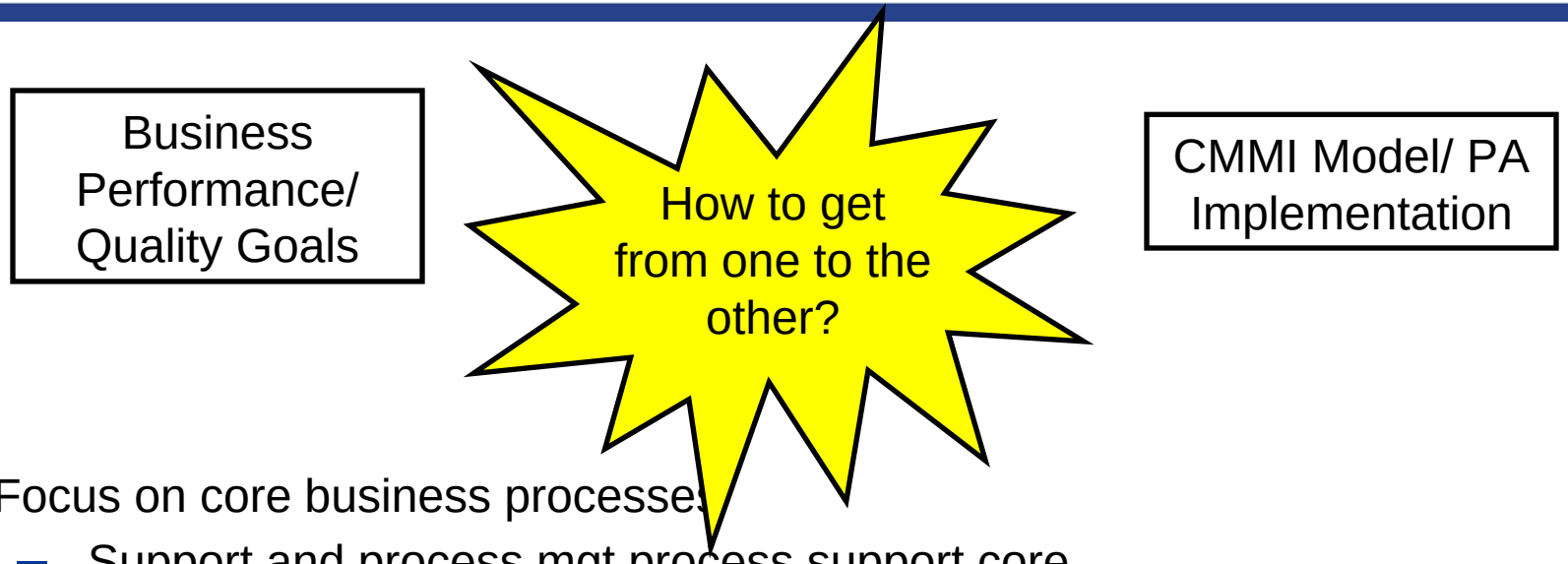
- Sample performance goals
  - Throughput/speed of core process
  - Customer satisfaction
  - Product line responsiveness to new technologies
  - Time to market
- Sample quality goals
  - Product defect goals
  - Other quality attributes
    - Reliability
    - Security
    - Accessibility
- Process management goals
  - Improvement velocity
  - Costs of improvement

If you haven't set realistic, clearly articulated goals, don't go forward

CMMI Model(s) and Process Area Selection

- Model (CMMI-DEV, -ACQ, and/or –SVC*)
  - Dependent of business domain
- Target Capability Profile
  - Business case driven
  - Maturity level can be useful
    - To provide improvement infrastructure
    - To focus on “staged” improvement plateaus for the organization
    - Valid marketing goal IF performance/quality are driving force for improvement

Strategy or Approach for Improvement (1 of 2)



- Focus on core business processes
  - Support and process mgt process support core
- Plan performance and quality improvement milestones
- Use appraisals liberally to mitigate risk, esp. of ":unknown unknowns"
- Use one or more proven tactical improvement approaches
  - Lean Value Stream Mapping
  - 6 Sigma DMAIC (Define, Measure, Analyze, Improve, Control)
  - Theory of Constraints

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Strategy or Approach for Improvement (2 of 2)

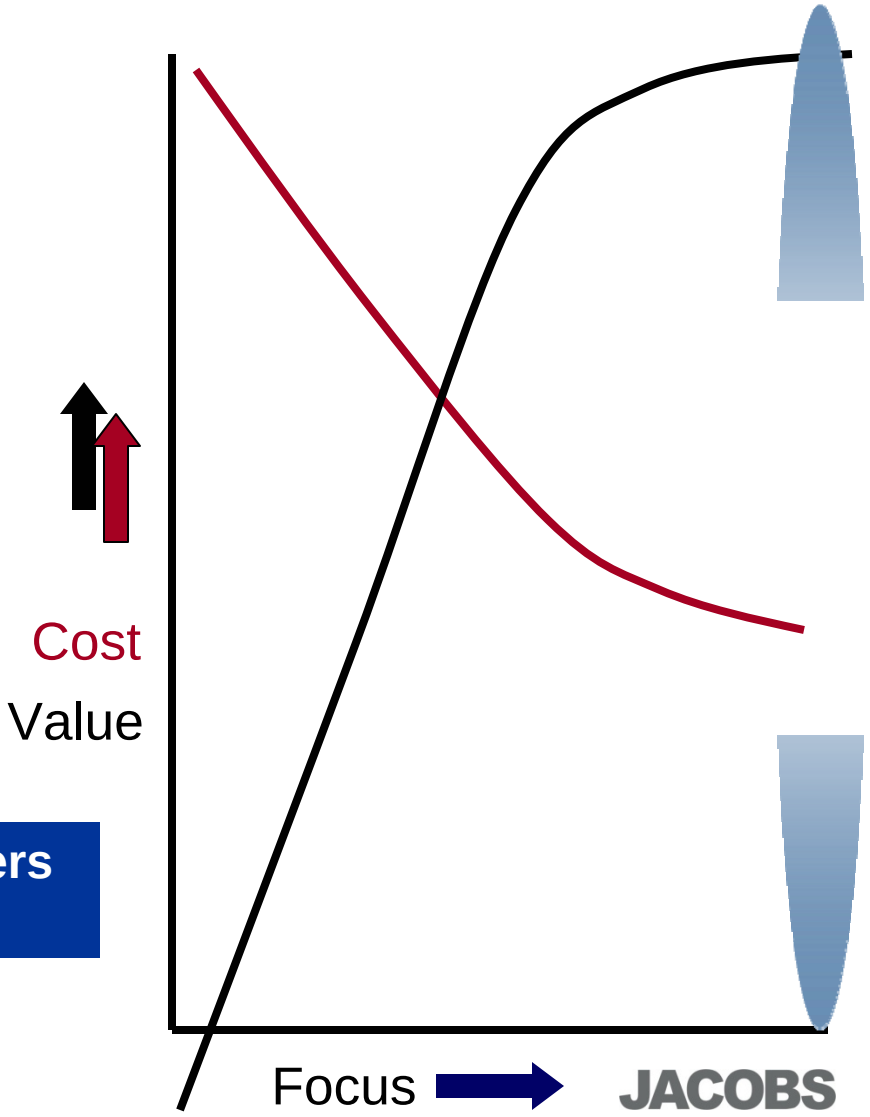
- Lean Value Stream Mapping
  - Applicable at CL1 and ML2 and up
  - Highly focused on customer value and elimination of waste
  - Supports visibility into process cadence and synchronization
  - Virtually solves “buy-in” problems
  - Supports “high velocity” improvement
- 6 Sigma DMAIC (Define, Measure, Analyze, Improve, Control)
  - Best applied to stable processes (ML/CL 3 and above)
  - Excellent set of mechanisms to implement ML/CL 4 and 5 improvements
- Theory of Constraints
  - Series of sub-optimal improvements
  - Releases “next bottlenecks’
  - Excellent for processes where throughput is a key performance factor
- Plan/do/check/act
  - Shewart cycle
  - SEI IDEAL cycle

Improvement Timeline

- "How long does it take"
  - To get to Maturity Level 2?
  - To go from Maturity Level 2 to 3?
  - Etc, etc
- How long SHOULD it take?
  - BUSINESS NEEDS should drive improvement velocity
    - Velocity = direction (goals) and speed
  - The underlying business case for improvement is often described in terms of weeks or months, not years

Value of Performance/Quality Focus

- Value of effort increase with focus and CMMI framework
- Cost decreases as focus becomes sharper
- Maximum value and minimum cost comes with maximum (appropriate) focus



Money and time are NOT the primary drivers of improvement velocity

The Case for High Velocity Improvement

- Business case for improvement
  - Technology cycles may be 1 – 3 years
  - Timeline for response to marketplace and changing customer needs may be 1 month to 1 year
  - Timeline to perform causal analysis and correct a broken process may be a day or a week
- Solutions to high velocity institutionalization
  - Lean approaches solve buy-in issues and rapid knowledge assimilation
  - Culture of continuous improvement accepts rapid, business-based change
  - Proactive change leadership
  - Focus on performance/quality is energizing
- Anecdotal evidence of fast, performance-driven implementations is emerging

The Case for Involved Leadership

- The Status Quo:
  - Leadership is “committed”
    - “Best case” : unwaveringly provides resources and support
- New paradigm (believe it or not)
  - Leadership is directly involved in the improvement effort
    - Sets/negotiates performance and quality goals
    - Actively engages in tactical improvement activities
  - QA/Process Improvement folks become facilitators
- Why?
  - Isn’t “process” just the way we do business?
  - Why shouldn’t the Leadership be directly involved?

Summary

Integrated Continuous Process Improvement

- Improvement based on performance and quality goals
- CMMI provides foundation for improvement
  - Best practices
  - Improvement infrastructure
  - Robust appraisal method
- Proactive, direct involvement of leadership
- Improvement timelines responsive to business needs
- Tactical mechanisms fully integrated with improvement strategy
  - Lean Thinking
  - Six Sigma DMAIC
  - Theory of Constraints

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