

Achieving and Sustaining Operational Excellence in Manufacturing: DuPont Approach

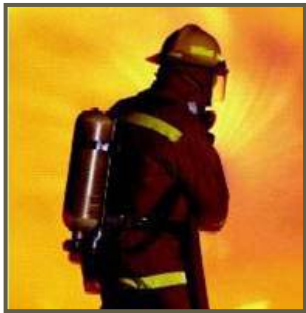


Srinivasan Ramabhadran
Global Leader
Process Safety & Risk Management Offerings
DuPont Sustainable Solutions



The miracles of science™

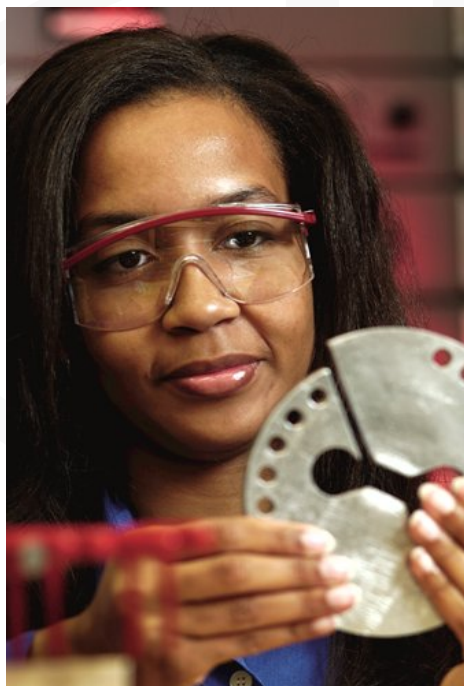
Safety is a DuPont Core Value



- Core values: Safety, ethics and respect for people and the environment
- \$32 Billion revenue with 13 business units from electronics to plastics, paints and agricultural chemicals
- Over 175 operating facilities around the world
- Worldwide reputation for industrial safety
- DuPont applies a **single PSM management system** worldwide

The Vision of DuPont

To be the world's most dynamic science company, creating **sustainable solutions** essential to a better, safer, healthier life for people everywhere.



We are a market-driven science company.

Mission: **Sustainable Growth**

The creation of shareholder and societal value while we reduce the environmental footprint* along the value chains in which we operate.

***All injuries, illnesses, incidents, waste, emissions, use of water and depletable forms of raw materials and energy.**



DuPont Sustainability Accomplishments



Goal

Achieve 5% (\$50 Million USD) annual decrease in energy use, consistent with sustainability goals

Results 1990 - 2009

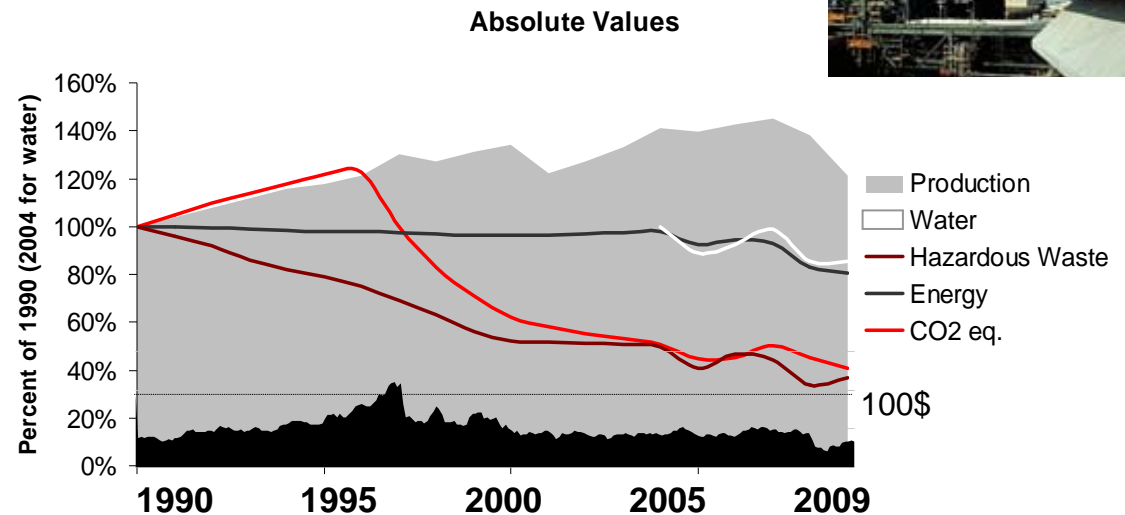
- 19% decrease in energy use
- 20% increase in production
- \$5B in cost savings

Reduction 1990 - 2009

Air Carcinogens	92%
U.S. TRI* "Releases"	77%
Air Toxics	75%

* TRI = Toxic Release Inventory

Sources: DuPont Global Reporting Initiative (GRI) report, Yahoo Finance



Energy Efficiency Initiatives Examples

- ✓ Integrated load controls
- ✓ Utilize Vented H₂ in CB Boiler
- ✓ Improve Condensate Return
- ✓ Reduce Liquid Nitrogen Usage
- ✓ Steam Trap Maintenance
- ✓ Cooling Tower Water Temperatures
- ✓ Monitoring & Targeting
- ✓ Mindset and Behaviors...

DuPont Approach

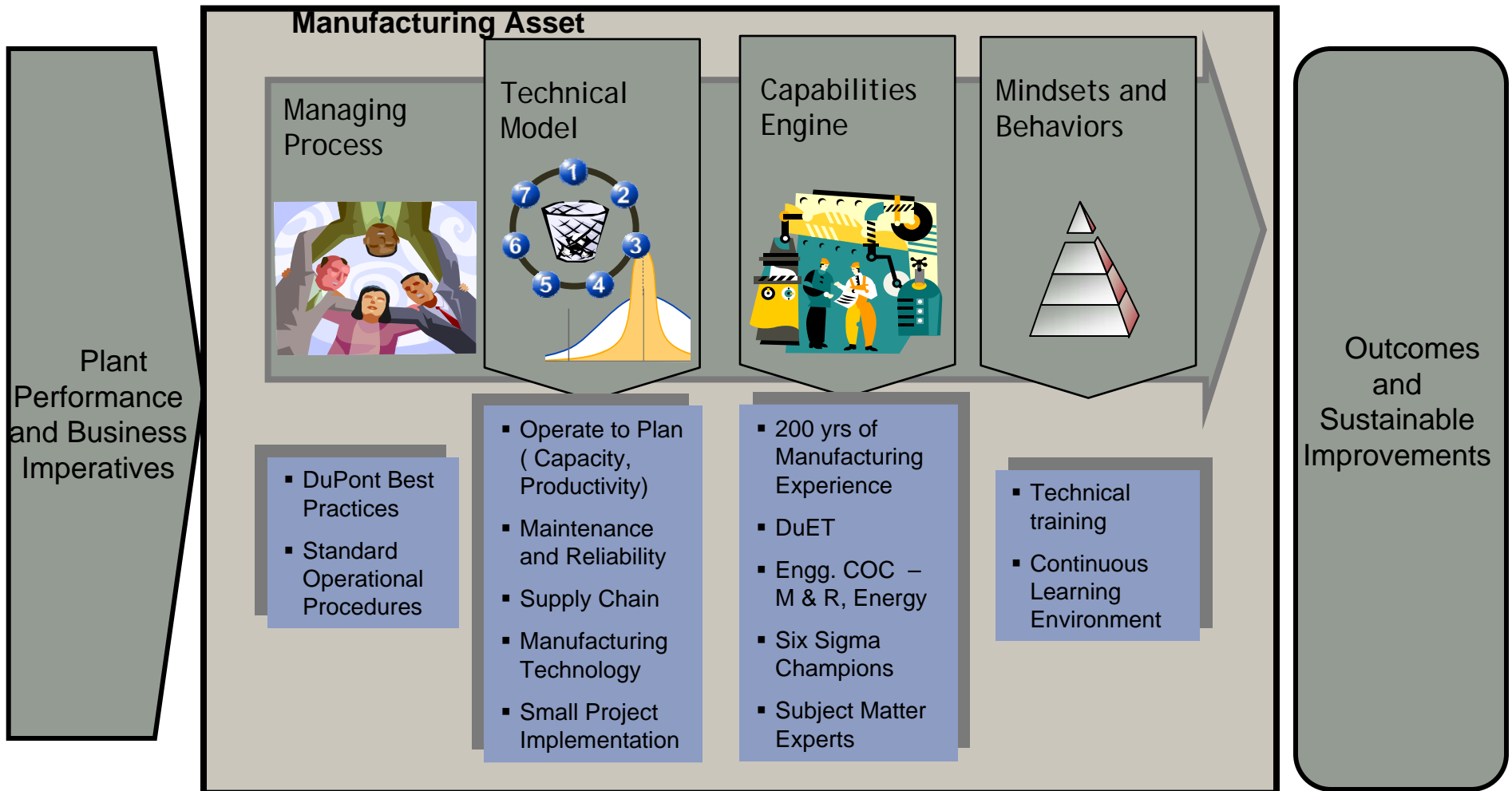
Major Shift in Leadership Thinking

Sustainable growth is rooted in core values, driven by leadership commitment, aligned with business objectives, and embedded throughout the organization and culture.



Assets Management

Integrated Production Systems



Production Goals integrated with Sustainability Goals

Process Safety Management Defined

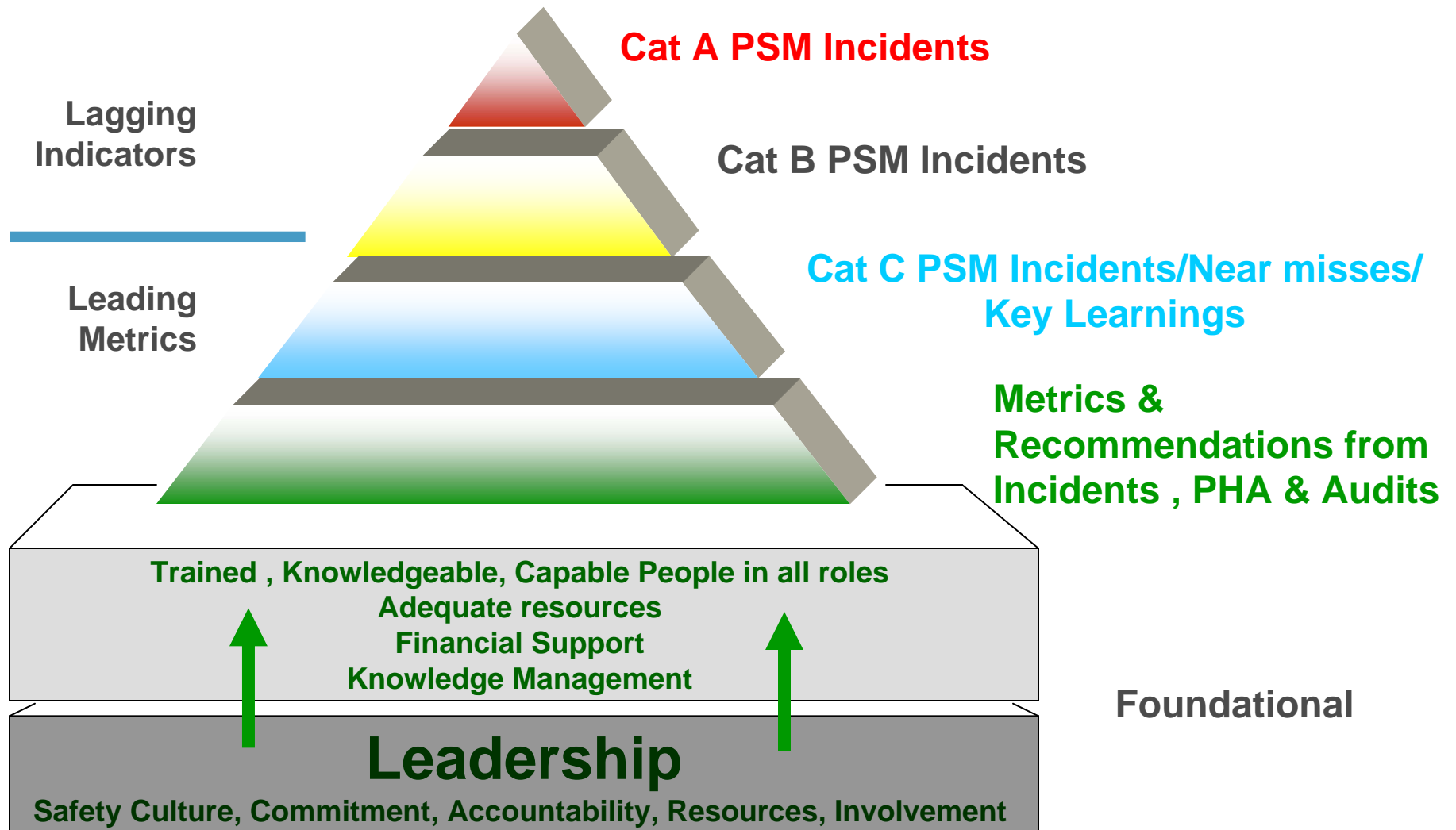
Process Safety Management is the application of management systems and controls (standards, procedures, programs, audits, evaluations) to a **manufacturing process** in a way that process hazards (risks) are identified, understood and controlled so that the process related injuries and incidents are prevented. This requires a **sustained effort by leadership** at all levels.



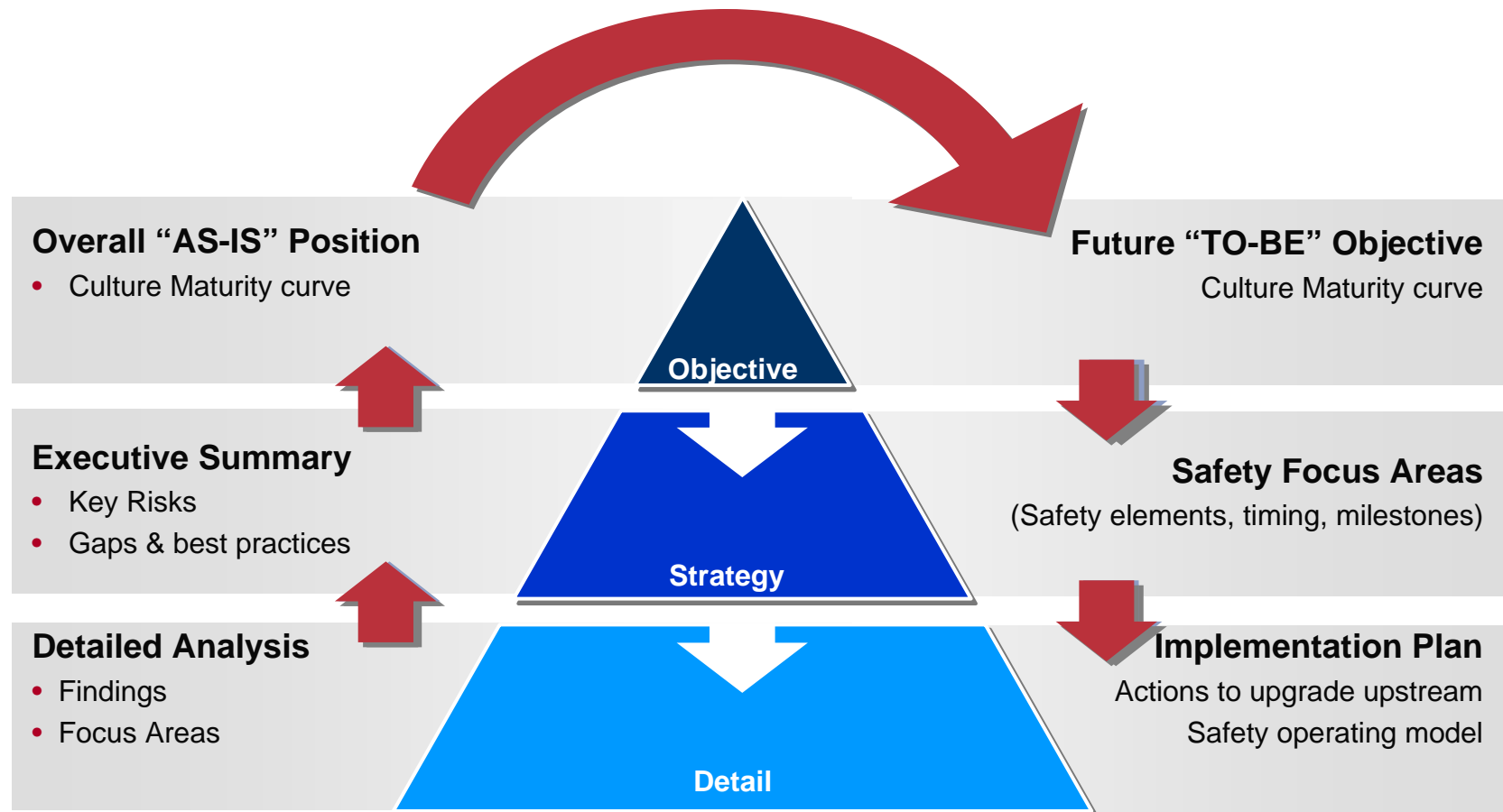
DuPont Process Safety Management Model



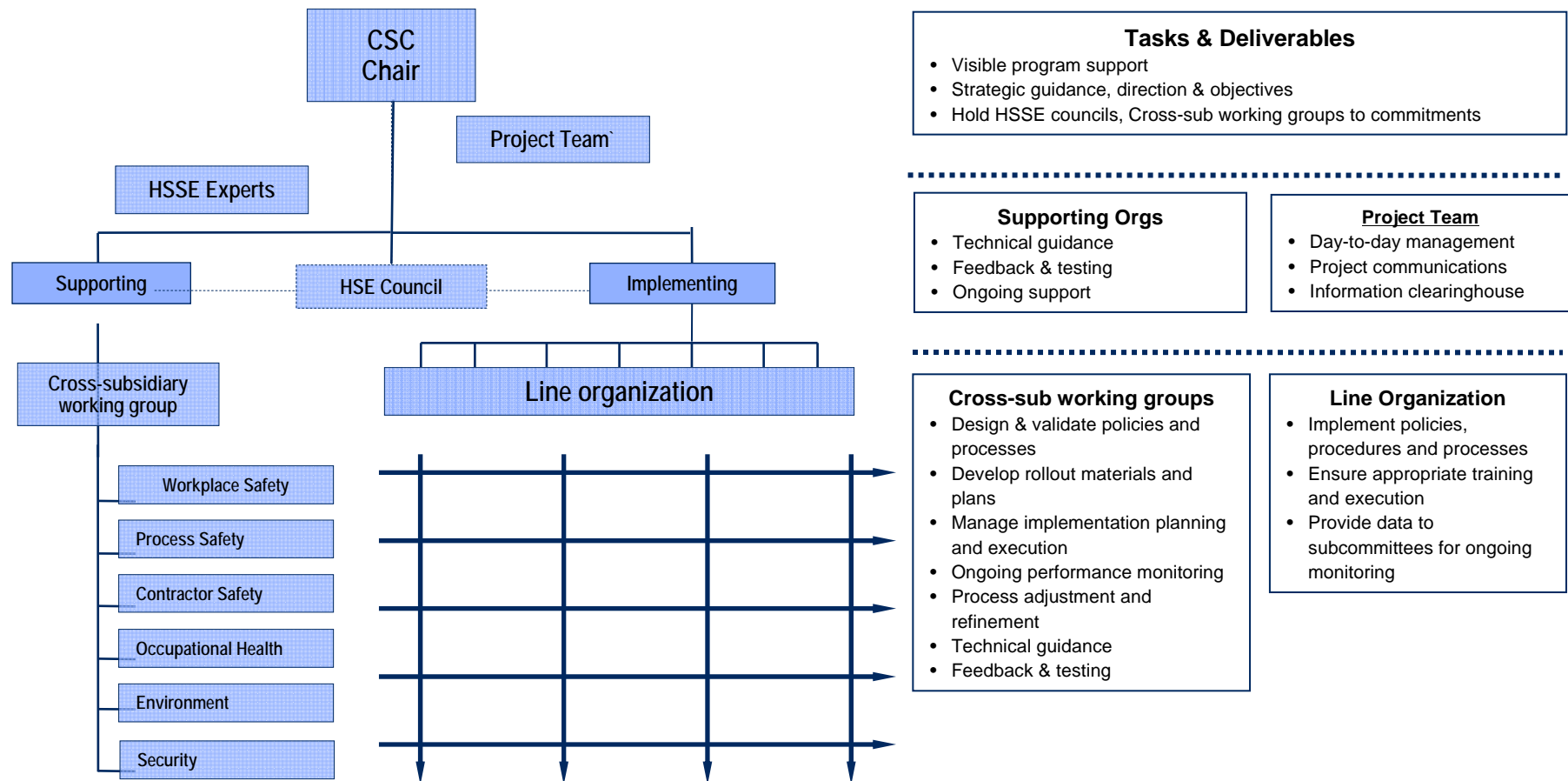
PSM Leadership Model



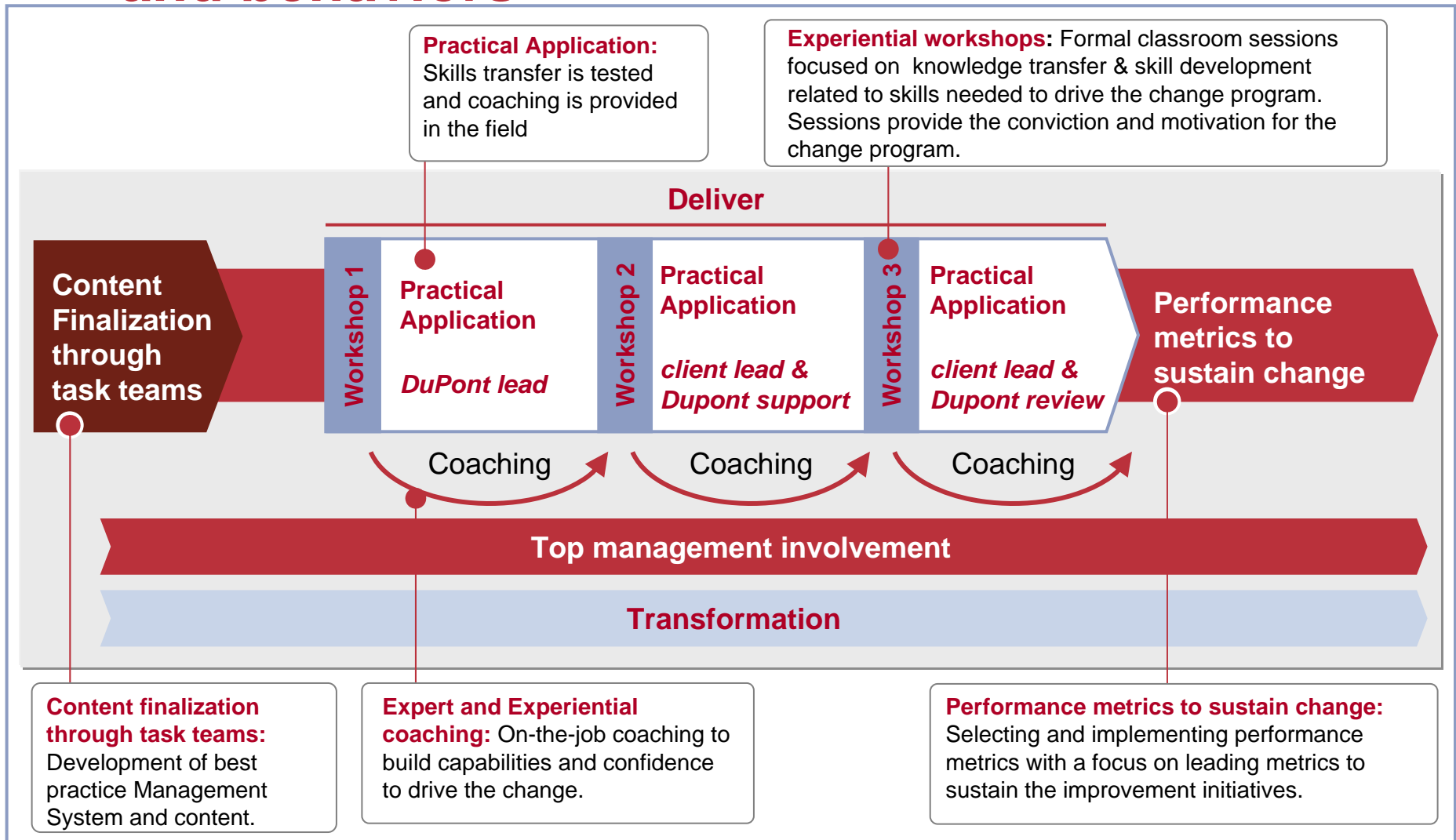
Achieving Operational Excellence: Leadership driven



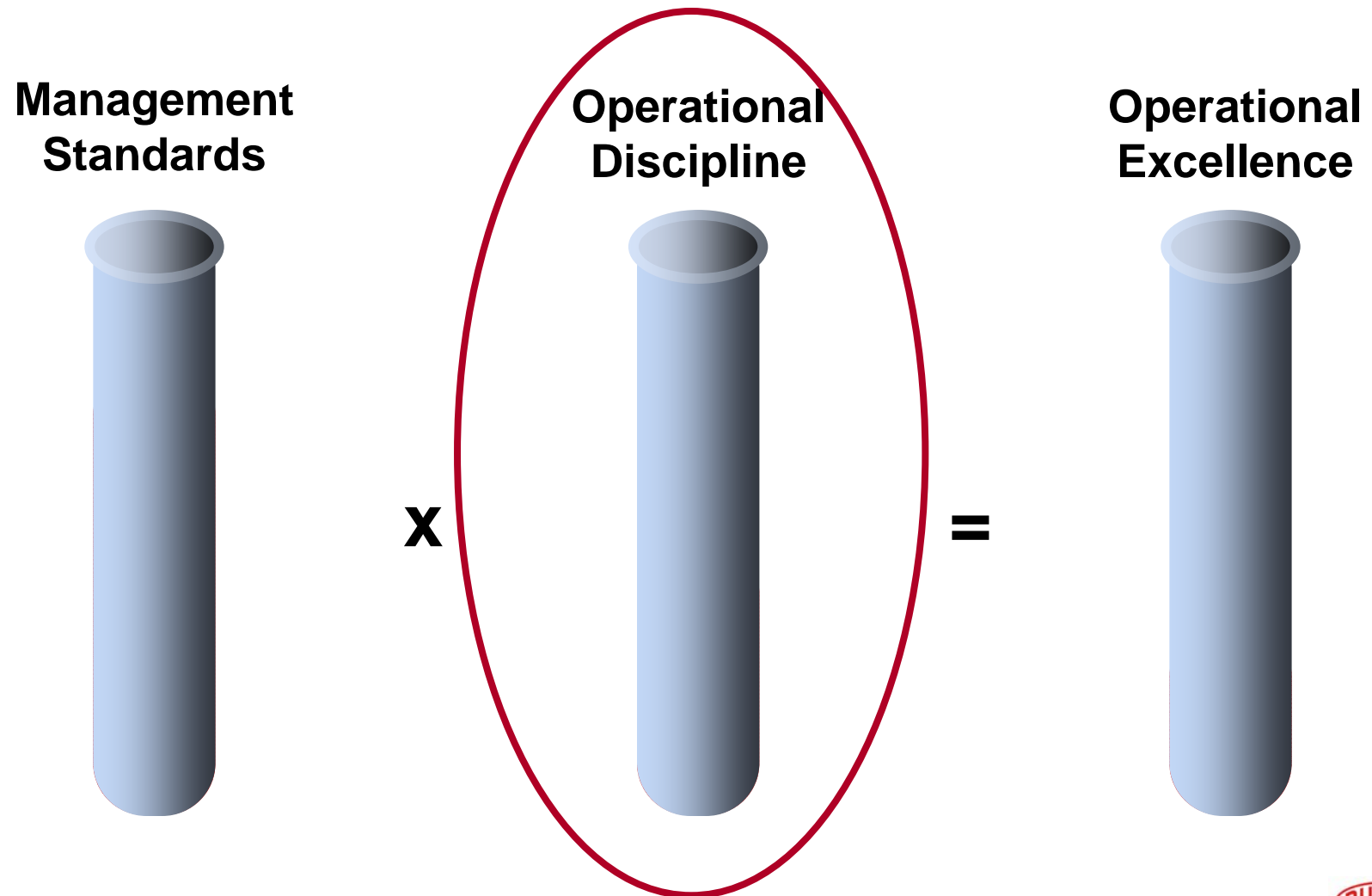
Compliance assurance: Line Accountability



Practical approach to establish new practices and behaviors



Focus on Execution is Key



Operational Discipline Characteristics



Leadership Responsibilities for Sustenance

- Leaders must have a clear vision of the ultimate goal of the company's process safety management efforts
- Leaders must set the goals and strategic objectives
- Leaders must insure sufficient, quality resources are dedicated to PSM system requirements
- Leaders must hold their line organization accountable for PSM implementation and results.
- Leaders must recognize and reward PSM accomplishments to drive continuous improvement
- Leaders must lead...felt leadership

Conclusion

- Process Safety Management is the way to deal with the most serious and challenging business risks to achieve operational excellence
- Structured and systematic managing processes and systems, high standards of performance, tracking results of key metrics and audit will help sustain operational excellence
- It provides an opportunity to prevent a catastrophic incident from occurring
- PSM. Live it. Lead it.



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www.sustainablesolutions.dupont.com