Lean Success Breakout Session A: Industry-Government Infrastructure

Presented By

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Industry-Government Infrastructure

Main Presentations:

- Lean Now in Turbine Engine Development / Sustainment Process
  - Ed Kraft
- Sustaining the Lean Movement in the Global Hawk SPO
  - Ronald Jobo

Short Presentation & Discussion Lead:

- Partnering for learning: Corporate-University Alliances
  - George Roth

Lean Success Breakout Session A: Industry-Government Infrastructure

Short presentation and discussion lead

Partnering for learning: Corporate-University Alliances

George Roth
MIT Sloan School / LAI

Partnering for learning: University-Corporate Alliances

What are they?

- Multi-year, multi-project agreements to work together in important strategic and research areas
- MIT: Amgen, Merck, Ford, NTT, Merrill Lynch, DuPont, Microsoft, Hewlett Packard
- 20% of MIT's corporate research volume

How do they work?

- Top-level involvement from MIT and company
- Setting a strategic agenda
- Operational simplicity - letting organizations be creative in working with one another, small executive and operating committees
- Attaining value from multiple streams of activities
  - Research, relationships and advice from faculty, broader understanding of technical and research tends, education, hiring good students, standard setting, influence regulation and policy

What have we learned?

MIT'S corporate-university Alliances

Year started	Company	Size	Departments/fields
1994	Amgen	30M in 10 years	Biology
1997	Merck	15M in 5 years	Biology
1997	Ford	20M in 5 years	All MIT – Engineering Product Development and Environmental Policy & Science
1998	NTT	18M in 5 years	Artificial Intelligence & Computer Science Laboratory
1999	Merrill Lynch	20M in 5 years	Sloan & Engineering – Financial Engineering
1999	DuPont	35M in 5 years	Chemistry, Biology, Biomedical & Materials engineering
1999	Microsoft	25M in 5 years	All MIT – Educational innovations
2000	Hewlett Packard	25M in 5 years	All MIT – digital libraries, software

Partnering for learning: Alliance Sources of Value

Corporation	University (MIT)
Increasing positive value	
Competitive advantage and higher profitability	**Breakthrough research**, theory and publications
Shareholder **value** and new revenue	Academic **journal article**/peer reviewed publication
Impact on current product or process	Academic conference **presentation**
Advantage in **recruiting** students	**Book** or book chapter
Education, **knowledge** and **technology transfer** (**stimulating environment** for technical people)	Industry or trade **publication**
	Faculty development
Convening power of university on important social, economic and policy issues	**Education**/opportunities for faculty & funding
	Education opportunities for **students**, funding, and employment (hands-on work with top executives)
Ability to give an idea **publicity**	
Priority in **commercializing** technical developments	Education **materials** (real case studies)
Information transfer	**Information** on research, business and engineering issues and problems
Inexpensive **research**	
Association with pretigous institution, profession and individuals	**Access -** time spent with sponsor, meeting industry managers and technical people and understanding industry issues
Sense of good **stewardship** & citizenship	**Money** and funding, prestige of link with successful industrial companies
Philanthropy and donation of time and money	
Produce good research that is **not implemented**	Funding and **time spent** that doesn't lead to publications or education
Raise expectations of employees and students so that they leave	High % or time spent **reacting** to sponsors information and meeting requests
Educate and inform competitors of corporation's know-how	Good research that is not implemented because corporation **constrains** it
Implement ideas at competitors	
Increasing negative value	

Partnering for learning: Alliance Benefits at multiple levels

Level of benefit:

Societal:

industry, academia and government levels

- set industry standards
- model for global environmental stewardship
- educate future leaders
- transfer knowledge
- influence policy

Organizational:

alliance, strategic company and institute levels

- share strategies
- shape each other's futures
- co-location
- understanding of complex systemdesign principles
- greater credibility

COMPANY SPECIFIC	UNIVERSITY SPECIFIC
hiring	job opportunities
new knowledge	new research
innovative technology	industry relationships
novel business models	teachable knowledge
market opportunities	funding, access and support
competitive advantage	understanding of real world problems
improved marketplace reputation	
inventive spirit	
development of workforce	

Local/individual:

Individuals: executive, manager, faculty, staff& student levels

source of project support	funding
insight and learning	access and data
advice	feedback
consulting	impact
	consulting

Partnering for learning: University-Corporate Alliances

MIT Partnership study "best practices"

- Adherence to standard MIT policies
- Transparent governance structure that encourages faculty proposals
- Match of interests of the sponsoring company and faculty
- Realistic match of expectations with deliverables
- Leadership at executive (strategic), line (operational) and network (knowledge) roles
  - Dedicated company staff as well as significant participation by senior management
  - Committed MIT faculty and staff
- Fellowship support for graduate students and links to post doc, graduate, and undergraduate students for internships and employment

Partnering for learning: University-Corporate Alliances

What questions and focus does a partnering-for-learning focus bring to Industry-Government Infrastructure for Lean Success?

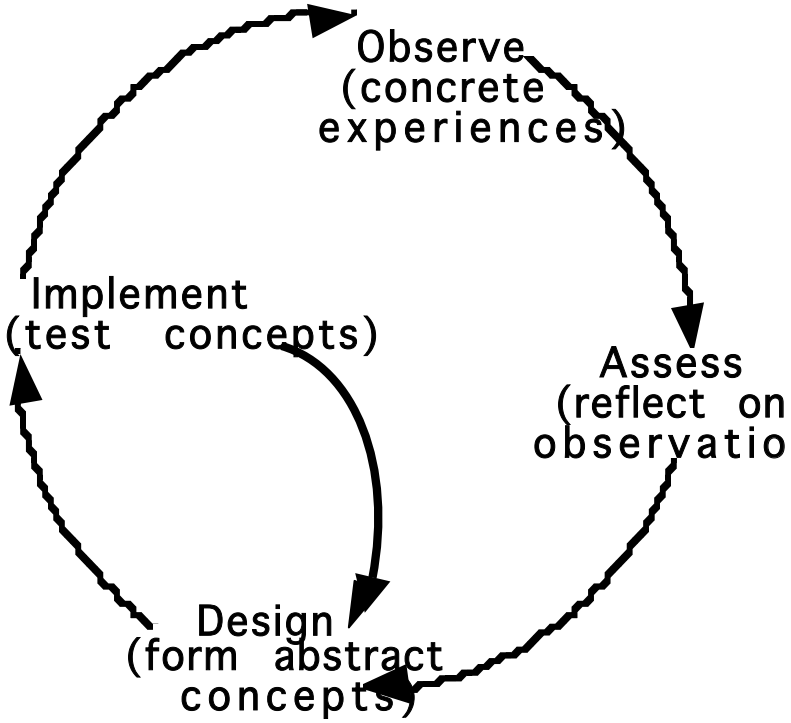
- What mechanisms are in place to facilitate learning and change?
  - Improvement in performance is main goal
  - Developing and retaining capability for continuous improvement is secondary goal
- How are different constituencies or stakeholders involved?
  - Program team, suppliers and customers
  - Management, engineering, production, acquisition, sustainment, accounting and finance
  - Executive, line and network leadership roles

Session Summary
Industry-Government Infrastructure

Common features of lean success

Lean Now Processes

- Common "best practices" for le
- Industry SMEs partnering with
- "Spotlight" on improvement eff
- Fresh and enthusiastic lean lea approaches applied "just in tim
- Broad and appropriate engager learning and subsequent imple



Content

- Multi-year technical programs involving multiple functional and organizational stakeholders – *enterprise challenges*

Conditions and process include technical and organizational complexity – require integration of behavioural and analytical approaches

Session Summary
Industry-Government Infrastructure

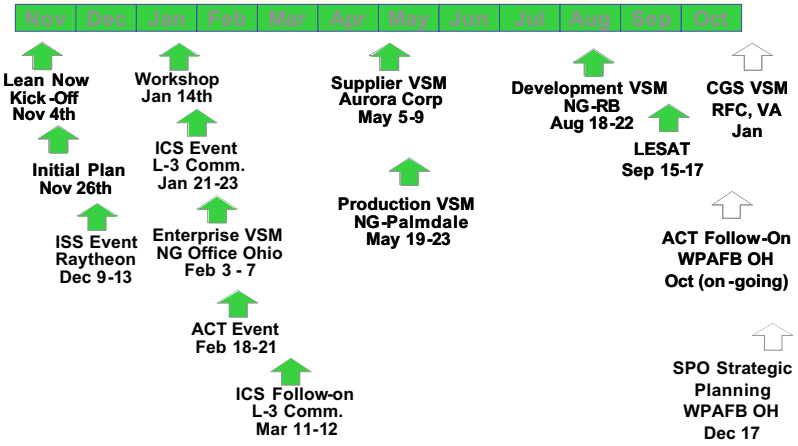
Lean Now in Turbine Engine Development / Sustainment Process

- Truly a capital "E" enterprise effort
  - Multiple programs, services and companies
- Preplanning scope of improvement effort
  - Based on overall enterprise (acquisition) with specific focus (engine testing)
  - Initiating at most senior, strategic and decision-making levels
  - Constituting team(s) with knowledgeable people and decision-makers
  - Facilitators with process knowledge and stakeholder links
- EVSMA event & follow up

Session Summary
Industry-Government Infrastructure

Sustaining the Lean Movement in the Global Hawk SPO

- Initial Lean Now Project
- Embedding "lean" in spiral development process
- Challenges of sustaining change and *continuous* improvement
- Moving beyond program to customers and suppliers – how do you promote change?



Session Questions
Industry-Government Infrastructure

1. What enables and sustains improvement and change over time?
   - Leadership?
   - Programmatic focus?
     - (Did LESAT help Global Hawk?)
   - Today's (or yesterday's) success is not a predictor of tomorrow's success, especially when conditions change
2. What inhibits learning and implementing change?
   - Not enough time? Not enough help? Walking talk?
   - Anxiety? Measurement? True Believers?
   - Governance? Diffusion? Purpose?

Strategic Framework (TTL) or capability-based model (reinforcing & balancing forces)?

Session Questions
Industry-Government Infrastructure

3. What were the surprises that were learned in gaining

- **engagement,**
- **alignment,**
- **implementing change, and**
- **sustaining improvement and change**

***across organizations*?**

4. How do you address the cost vs. return question?

- **Who has the authority to make assessments of human capital investments?**
  - **easy to measure costs**
  - **hard to determine lost revenue/improvement**
  - **passion for investment in learning**
  - **need for intersection of passion and authority**

Session Questions
Industry-Government Infrastructure

Summary of questions to presenters:

1. What enabled change?
2. What inhibited change?
3. What were surprises in gaining and maintaining change across organizations?
4. Costs of improvement program?

