Lean Aircraft Initiative
Plenary Workshop

The Lean Enterprise Model
"A Lean Enterprise Reference Tool"

October 16, 1996

- **Review of the LEM's Development**

- **Beta Test Completion**

- **Modifications in Process for Version 1.0**

- **Release Schedule**

- **The IPT developing the LEM has remained intact**

- **The LEM Development followed the original structured process**

- **Three LEM Products were produced**
  - **as organized compilations of the LAI Research Findings**

- **Version 1.0 will contain most of the research completed in Phase 1**

The LEM is being developed at three levels of detail

• **For the Executive:** **An Enterprise Level Summary of the Principles, Overarching Practices and Metrics found to be evident in Lean Operations**

• **For Management:** **A handbook of the Principles, Practices, Metrics, Barriers, and Mitigators that capture the next level of research detail**

• **For Operations:** **An electronic data base program that provides a means to search through the complete LAI findings of principles, practices, metrics, barriers, interactions, and reference material by hierarchy of principles and practices, by sector, or by functional process**

LEANAIRCRAFT INITIATIVE

The LEM is:

- A framework for disseminating LAI research.
- A reference tool to assist in the self-assessment of leanness.
- A guide for identifying leverage points for organizational change.
- A tool to support development of new lean paradigms.

The LEM is not:

- A detailed "how-to" or "cookbook" guide.
- An exhaustive empirical validation of <u>all</u> lean practices.
- A mathematical formula for determining leanness.
- A description of "the ideal lean company".

- **Introductory Luncheon held at June '96 LAI Workshop**
    - > 30 representatives from 13 Companies & 6 Govt "Agencies"
- **Invitations sent to all Consortium Members**
    - Board members support solicited at Executive Meeting
- **Full Day Workshop held at MIT as Test Kick-off Activity**
    - Attended by 11 Industry Companies & 6 Government "Agencies"
    - Electronic & Handbook version provided to all attendees
- **Handbook sent to Focus Group Industry and Govt Leads for comment**
- **Post-Test Workshop held after Survey Data was Analyzed**
    - All feedback reviewed, clarified and/or verified
    - Essential Improvements identified and approaches discussed
    - Consensus developed on plan for Version 1.0 Release

- **Ten Industry Companies**
    - **Boeing***
    - **G E Engines***
    - **Hughes***
    - **Lockheed Martin E&M***
    - **Lockheed Martin TAC***
    - **Northrop-Grumman***
    - **Pratt & Whitney**
    - **Raytheon**
    - **Texas Instrument***
    - **Textron***
- **Government**
    - **Air Force***
    - **NASA**

Provided → **56 test application reports**

* Also attended Post-Test Beta Workshop

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- **Beta test process was extensive, intensive and valuable**

- **Survey response showed wide variation in "user satisfaction"**

- **Post-test Beta Workshop was crucial in clarifying issues**

- **Extent of changes required more than original two week allotted schedule**

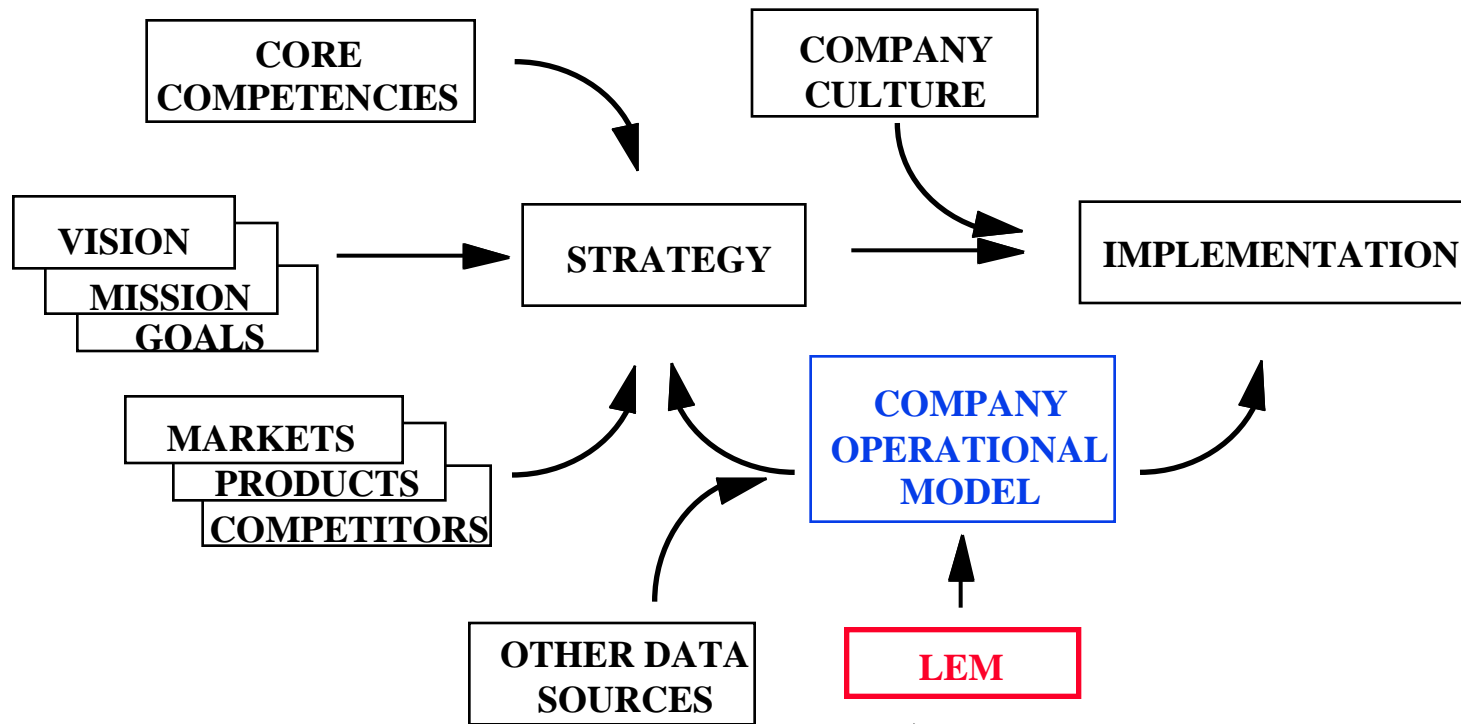- **Some issues raised are beyond the scope of the Phase 1 LEM activity**

Improvements are being implemented that address each of the critical needs identified in the beta testing

✓ • LEM's purpose and role — - Emphasis on "Reference Tool"

but in Phase 2: - Consider Video/Slide Training Guide

✓ • Front-End Introduction — – Being developed for Version 1.0

✓ • Enterprise Level Metrics — - Elimination of "repeated" metric data

but in Phase 2: – Specific effort would be required

✓ • Expansion of "Barrier" description — - Being developed for Version 1.0

✓ • Inclusion of "Supporting Practices" — - Being identified for Version 1.0

- Listing only; no metrics, barriers etc.

✓ • "Software Friendliness" Improvements — - Further changes being incorporated

- Workshop held for final changes

✓ • Additional Data Sheets — - > 20 new Data Sheets will be added

LEAN**A**IRCRAFT
INITIATIVE

Beta
*The "~~Alpha~~" evaluation revealed a continued
need to clarify the* ***objectives and use of the LEM***

CORE COMPETENCIES

COMPANY CULTURE

VISION
MISSION
GOALS

STRATEGY

IMPLEMENTATION

MARKETS
PRODUCTS
COMPETITORS

COMPANY OPERATIONAL MODEL

OTHER DATA SOURCES

LEM

*Not a substitute for the need of
each company to internalize the
principles and practices of "Lean"
in deciding its own "how-to"
of operating its enterprise !*

Further "Software Friendliness" changes will be made

- "Navigation" found difficult
  - No macro view of what data exists

- Use of "Word Viewer" awkward

- Preference for Windows standards

- Search feature is confusing

- Printing problems identified

- Glossary needs expansion

- An Outline View added to primary screen
  - Icon feature displays where data exists

- Capability to use "Word" option added

- Changes made to colors and shading

- Keyword and full text search simplified

- Ability to print all screens added

- Glossary additions under review

Another workshop held with interested Beta testers finalized software changes

- **An extensive LEM development process begun in April 1995 is near completion**
  - **Consortium members have been intimately involved in shaping the product**
  - **Available for Release at the November Executive Board**
  - **Control & Distribution policy must be settled prior to release**

- **While "not everything to everybody", the LEM has met its objectives**
  - **Three products to be released: Chart, handbook and electronic version**
  - **Version 1.0, as improved and clarified, endorsed by all Beta testers**

- **Issues remain for LAI Phase 2 activity relative to the LEM**
  - **Enterprise Level metric research**
  - **Internet access**
  - **Training supplements**
  - **Review of consortium requirements and best approach to meeting them**