



Challenges in Implementing Enterprise Architectures in the Semiconductor Equipment Industry

Presented by Chris Phoa
Enterprise Architecture Practitioner

External Use

Agenda

- Applied Materials Profile
- Industry Spending History
- Industry Revenue History
- Key Behaviors leading to Challenges at Applied Materials
- Strategies to address challenges
- What has some of the Strategies yielded?
- Conclusion

Applied Materials Company Profile

■ Fast Facts

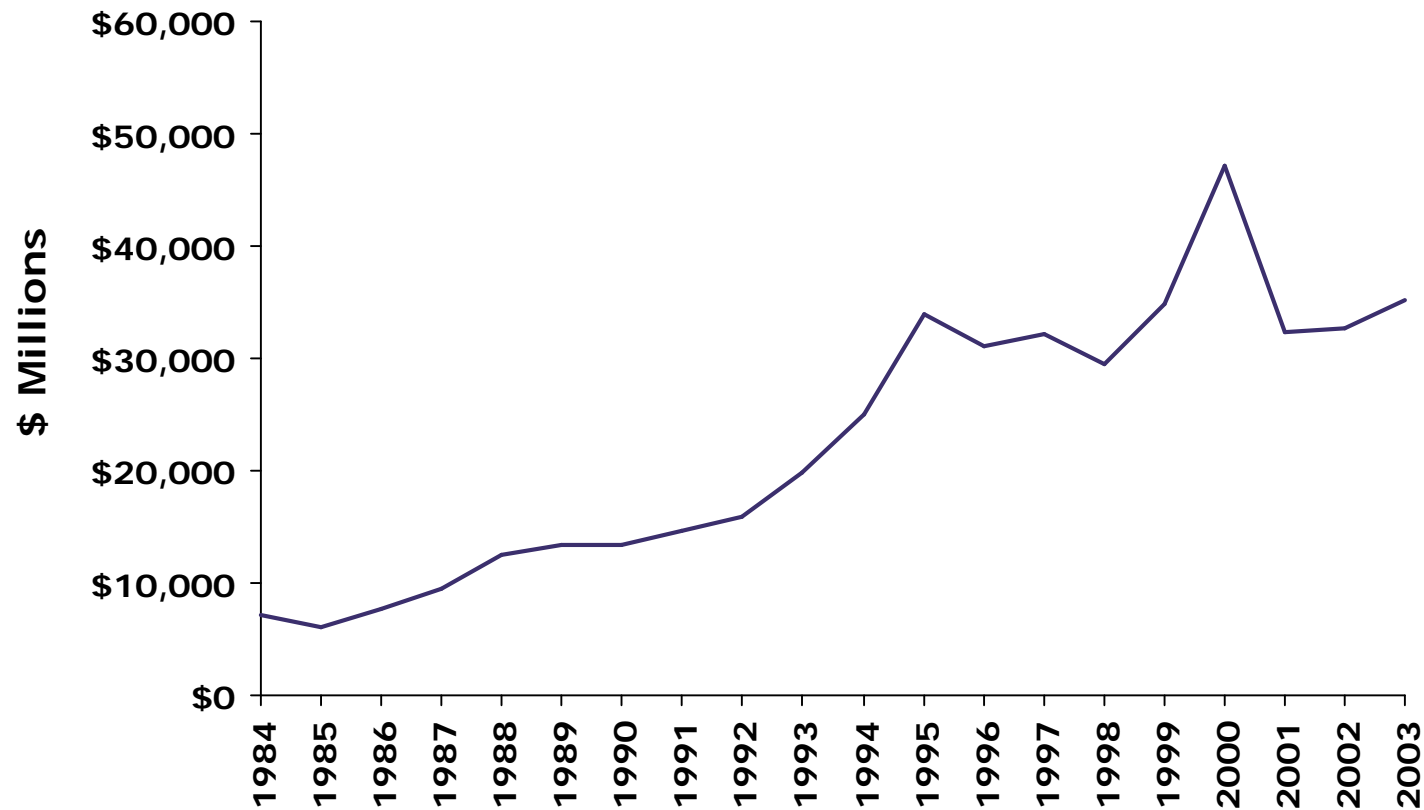
- Founded in 1967
- Our company develops, manufactures, markets and services semiconductor wafer fabrication equipment for the worldwide semiconductor industry
- Worldwide Locations
 - 14 Countries
 - Approximately 70 Sales and/or Service Locations
 - Manufacturing in North America, Europe and Israel
 - Development in North America, Asia, Europe and Israel
- 12,400 employees

Applied Materials Financial Profile

- Past Four Quarters New Orders
 - \$4,598 Million
- Past Four Quarters Revenue
 - \$4,702 Million
- Gross RD&E Investment (5 years)*
 - \$4,918 Million

* Note: RD&E data prior to FY '99 does not include Etec Systems

Worldwide Semiconductor Capital Spending



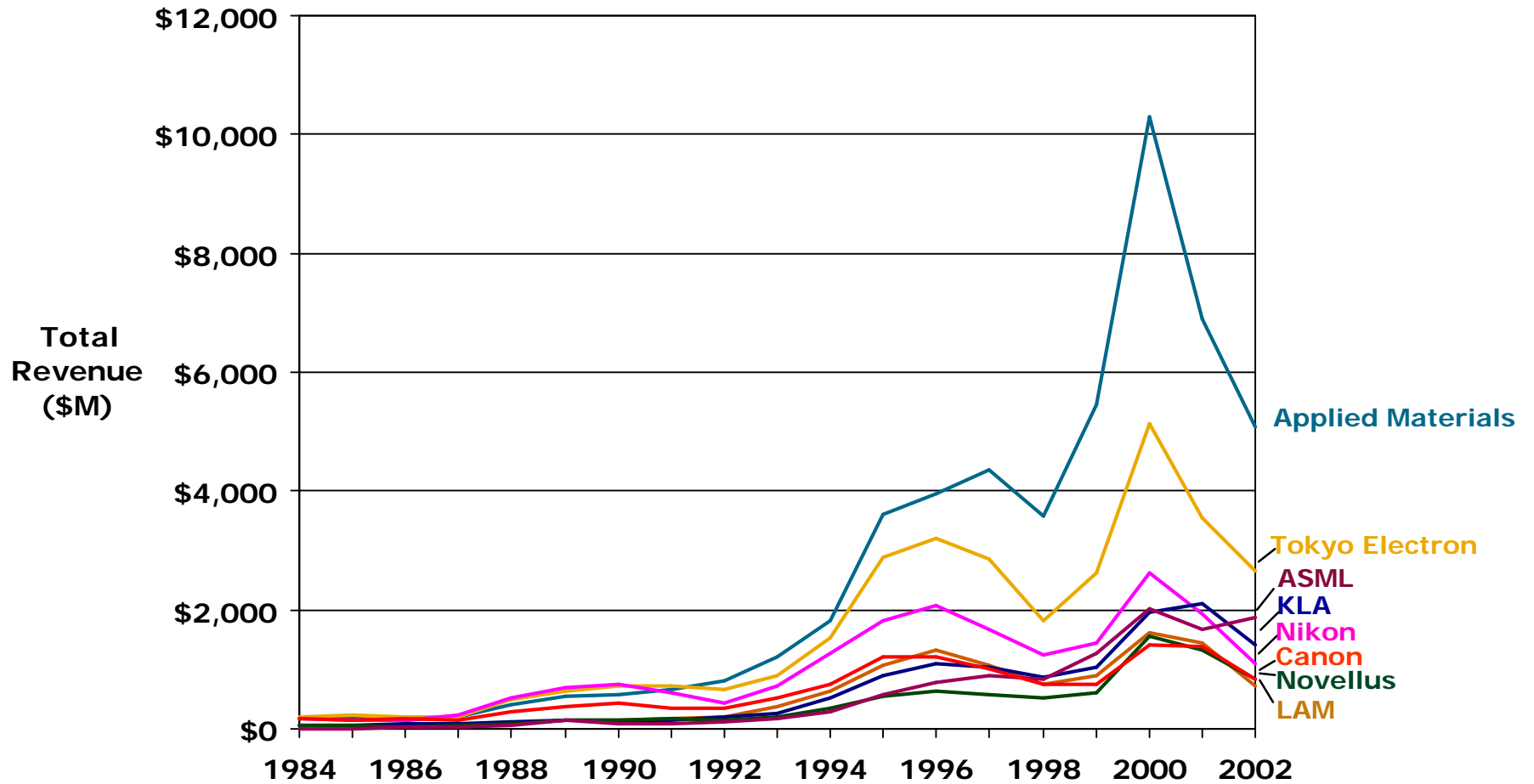
Source: Applied Materials Corporate Marketing estimates

09/15/03 The Open Group Presentation - 5

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Wafer Fab Equipment Company Revenue



Sources: Company Reports, VLSI Research 2/03
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Applied Materials Rapid Rise and Success has led to Key Behaviors

- “Now” or Action oriented culture
- Emphasis on Innovation and Time to Market as key to revenues

Key Behaviors Leading to Challenges

- “Now” or Action Oriented Mentality leads to:
 - Tendency towards finding “silver bullet” solutions in lieu of thorough analysis



- “Bell cow” approach



- Tendency towards solutions that can be implemented in short amount of time (30 – 90 days)



Key Behaviors Leading to Challenges

- Emphasis on Innovation and Time to Market as key to revenues leads to:
 - Entrepreneurship/internal competition encouraged to drive innovation



- Inadequate Communication (as a result of competitiveness)



- Highly de-centralized organization. Solutions tend to focus on local needs as opposed to enterprise wide.



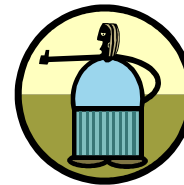
Strategies to Address Challenges

- Education

- Educate up (show business value, gain sponsorship)



- Educate sideways (earn credibility)



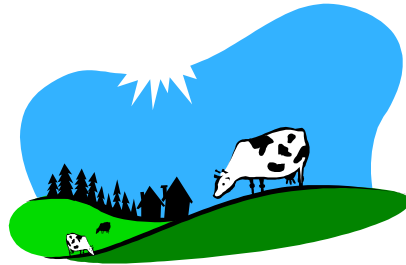
- Educate down (show big picture, forest instead of trees)



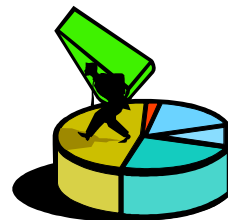
- Education through practical examples and/or actual practice (not through preaching)

Strategies to Address Challenges

- Turn some challenges into opportunities
 - Use of “bell cow” approach (to redirect the cow to greener pastures)

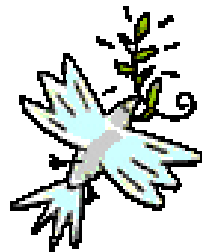


- Take an indirect approach, focus on how to divide up into winnable chunks



Strategies to Address Challenges

- Focus on internal collaboration instead of competition
 - Entrepreneurship / Internal Competition, while maybe good for product innovation, wreaks havoc for operations
 - Use of the Architecture Institution to “extend the olive branch” to various IT Silo’s, open the communication lanes, be the broker of knowledge



What have some of the Strategies Yielded?

- Created organizational momentum to further the cause of architecture
 - Formation of an Architecture Review Board
 - Formation of an extended Architecture Team
 - Forum to discuss technical issues (that otherwise never surface)
 - Only forum for technical impact analysis
- Implementing Architecture Compliance Process
 - To enable better planning for project managers
 - To free up architect time (less phone calls)
- Better communication and collaboration
 - Architecture Review Requests have risen
 - Projects have been engaging the Architecture Team earlier in their planning process



Conclusion

- Don't treat as a "sprint",



... treat more as a "marathon"



- Fulfilling the Enterprise Architecture Vision is a journey whose every step can yield business value (Terry Blevins, The Open Group)



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