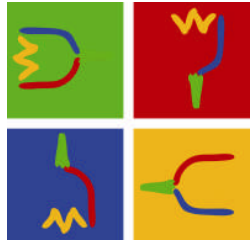


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# A Systems Approach to the Transition of Emergent Technologies into Operational Systems-*Herding the Cats, the Road to Euphoria and Planning for Success*

*Mr. Marc Austin & Dr. Donald M. York*

17 June 2008



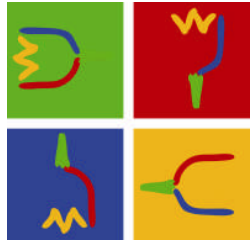
# Cause for Action



- The Information Age- Burden or Opportunity?
  - *The complexity of interconnection*
  - Data is Everywhere and Ever Increasing
  - Technologies can become Obsolete in Months
  - Systems of Systems Integration
- Government and Industry
  - Become Increasingly Efficient
  - Sustained Leadership Role



***Principles Apply to Government and Industry***



# Cause for Action



- U.S. Government

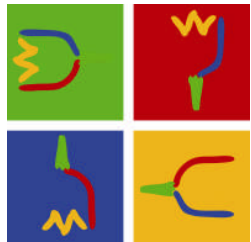
- Elevated Concern Since 1996
- 2007 – DoD Report to Congress – Need to Establish a Process to Enable a “Systematic Approach to Product Development”
- 2006 – Government Accountability (GAO) Office Report to Congress- DoD Spent \$13B on Basic, Applied and Advanced Research in U.S. – Created Innovation and Technology Transition DoD Position



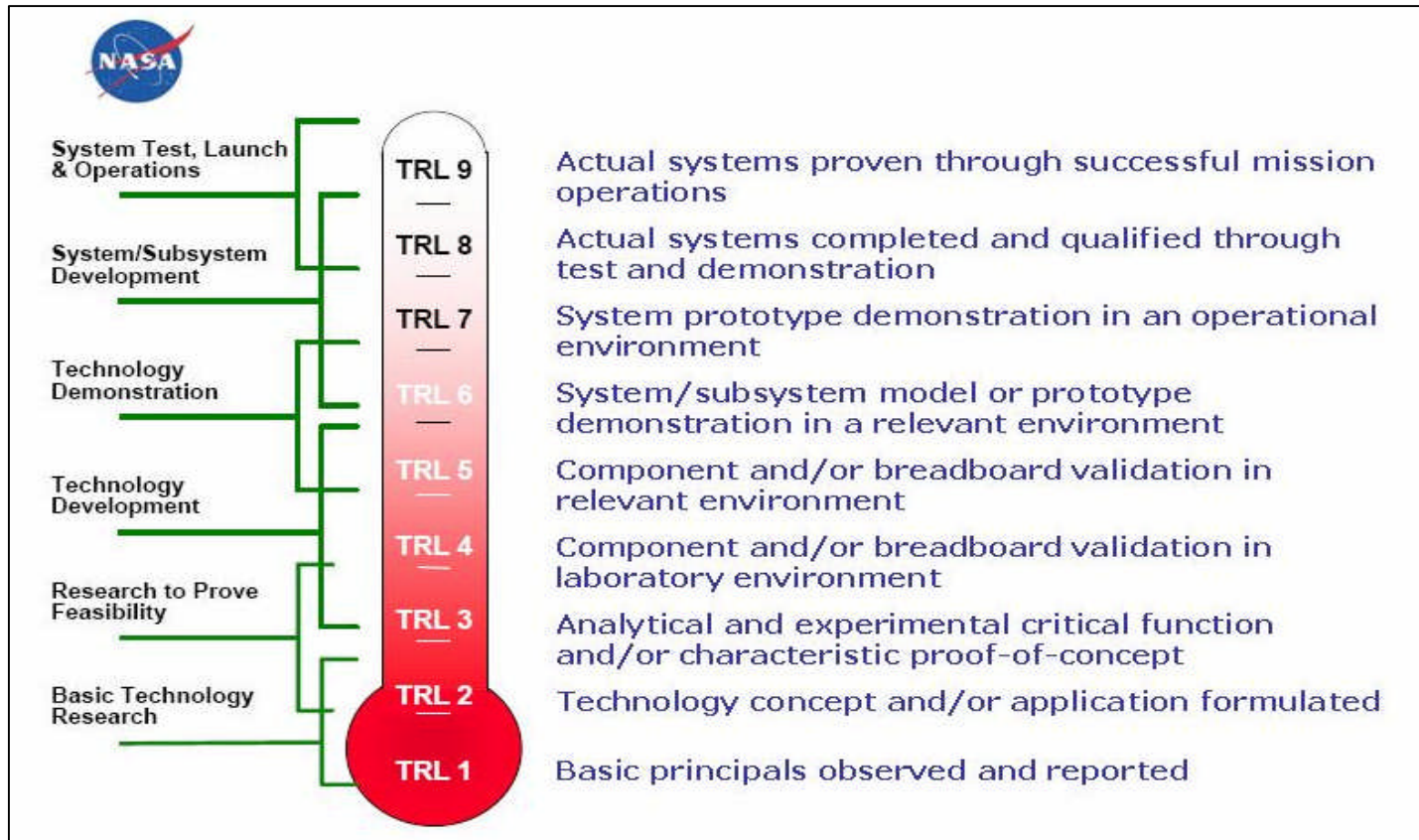
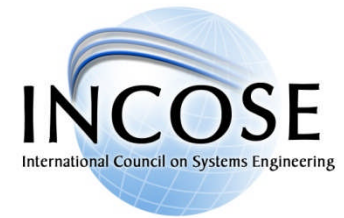
- U.S. Industry

- Product Development Institute – 46% of Pre-Launch to Product Launch Investments don't Succeed

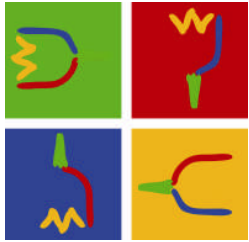
***Billions of Investment \$ at Risk!***



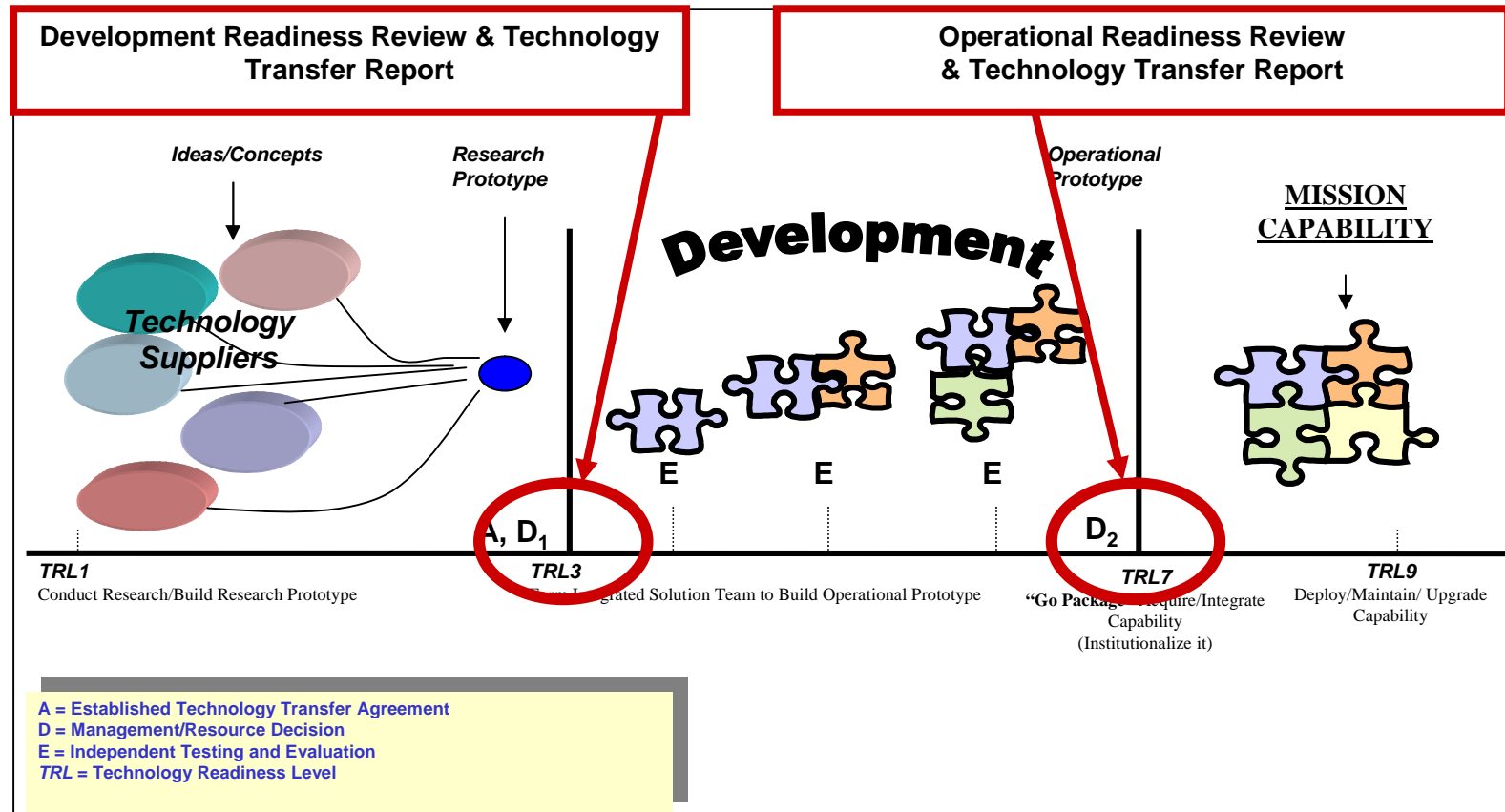
# Technology Readiness Levels (TRL's)

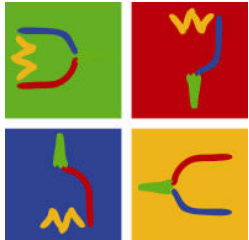


## *Are TRL's an adequate Measure of Product Maturity?*

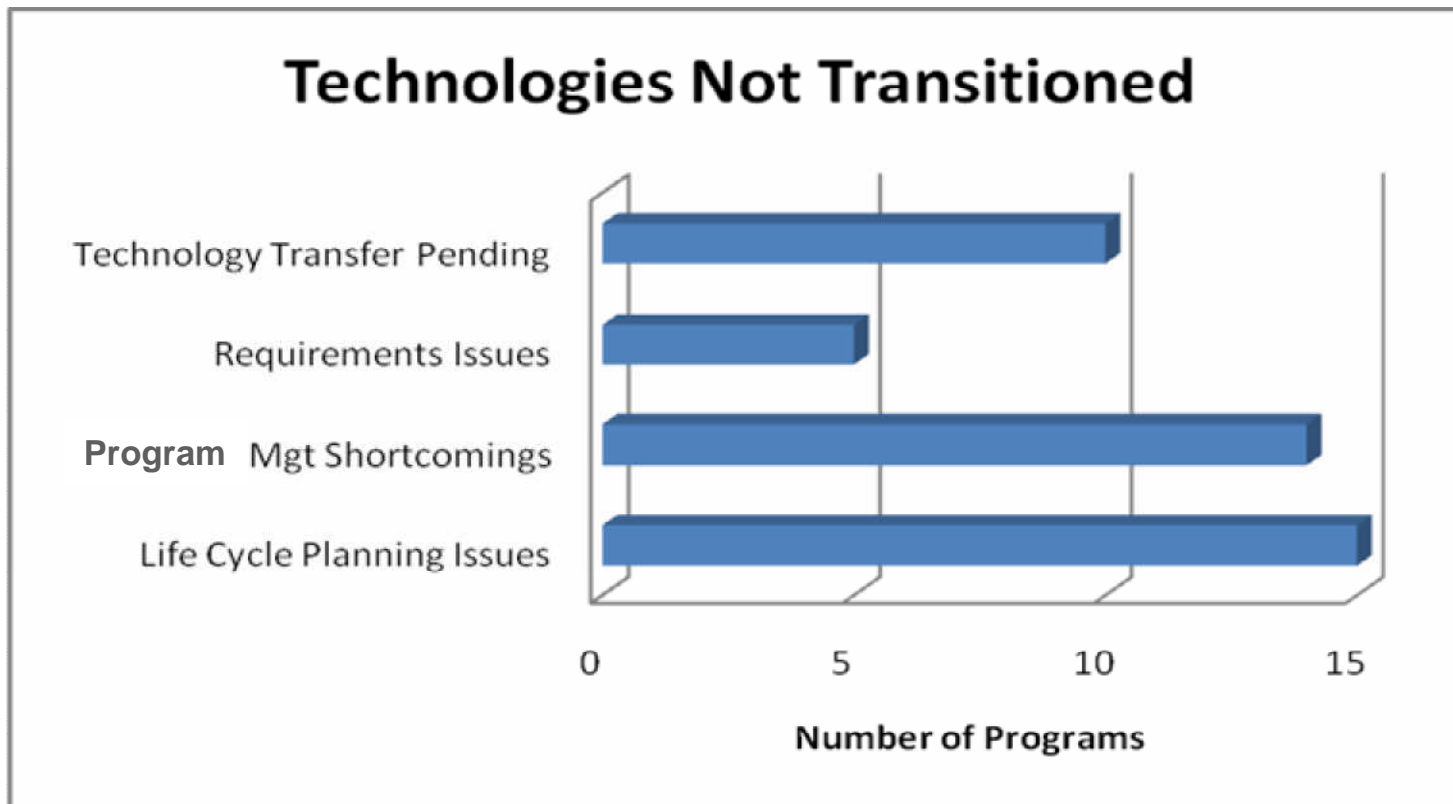


# Product Development Process

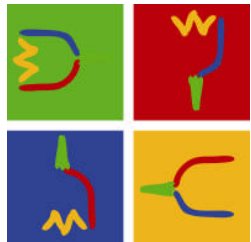




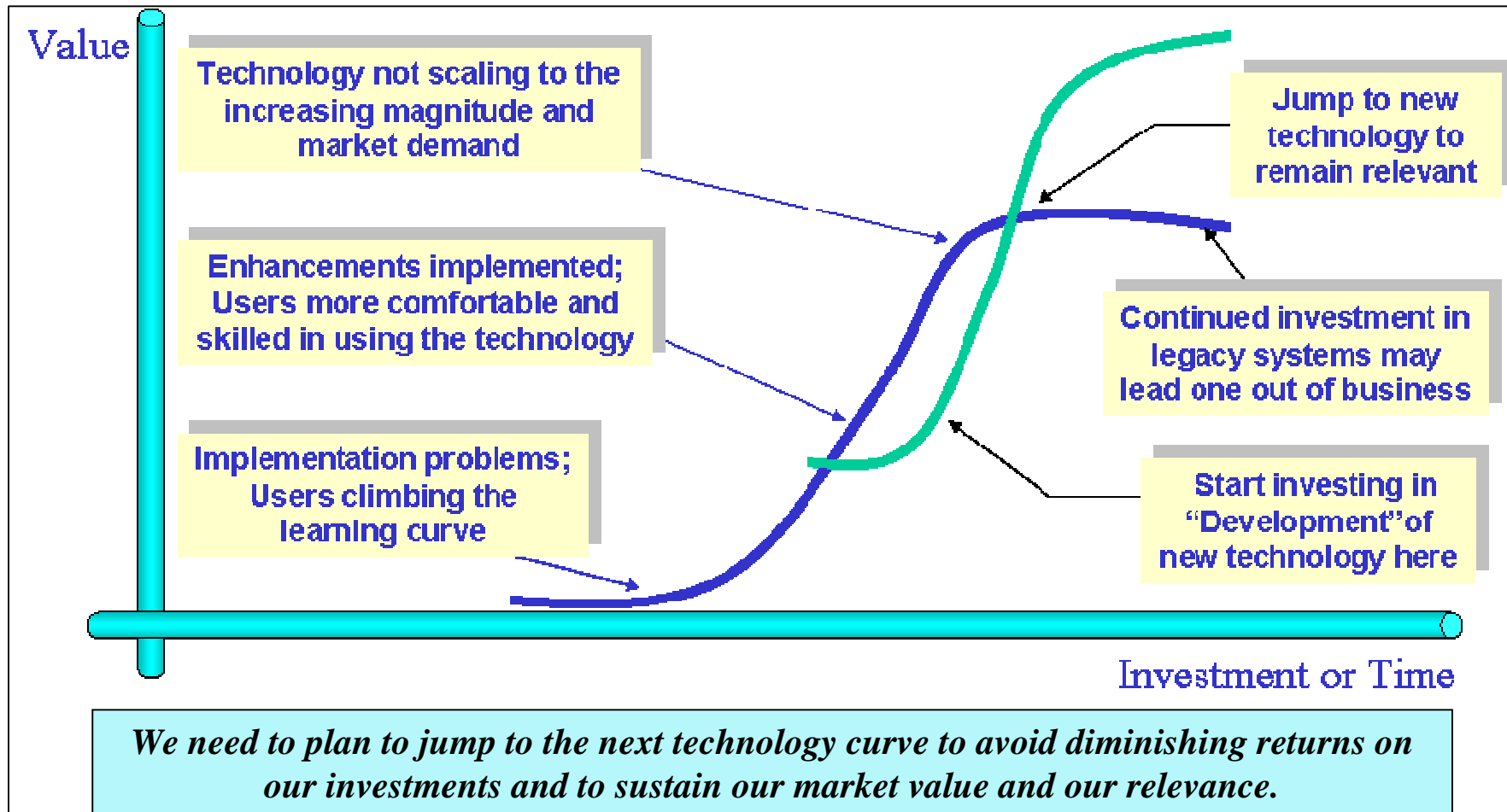
# Why Technologies Fail to Transition

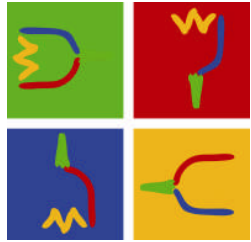


***61 Mature Technologies Studied- only 28% Successfully Transition to Operation***



# Plan for Success- “S” Curves



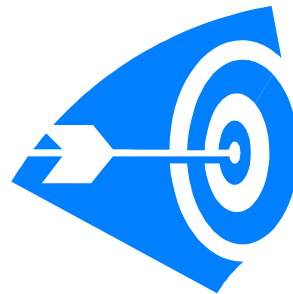


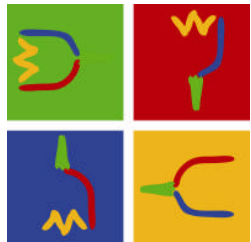
# Our Assertion



Following our Systematic, Corporate Approach will Enable Government and Industry to **be Significantly Better Prepared** to Jump to the Next “S-Curve”- in Other Words-- “Stay Relevant” or “Sustain Leadership Role”

***ACHIEVE CONTINUOUS SUCCESS***





# Euphoria, Herd the Cats and Planning for Success

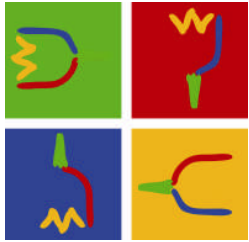


- Integration of Systems Engineering, Product Development and Corporate Portfolio Management (CPM)

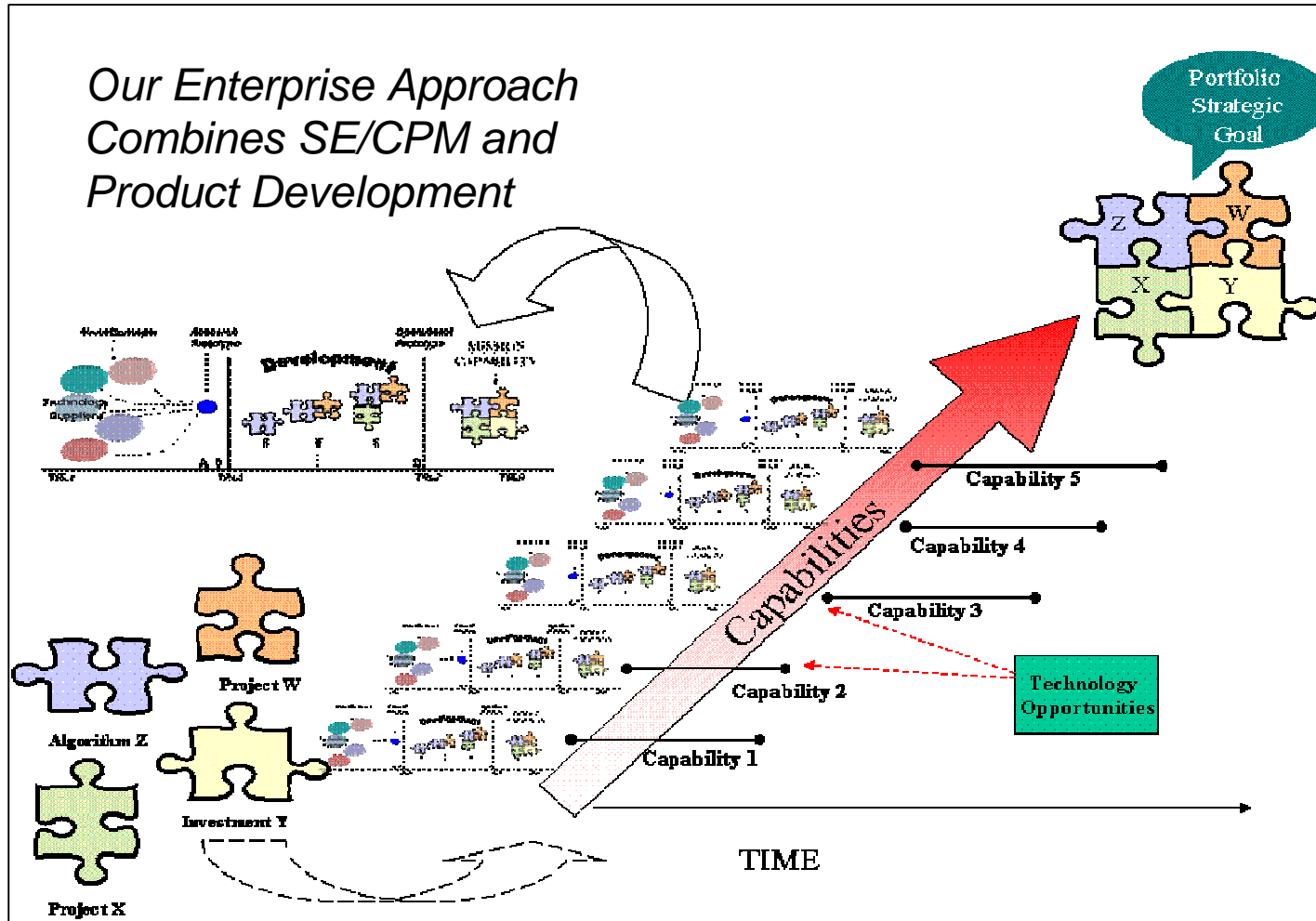
- Four Key Questions;

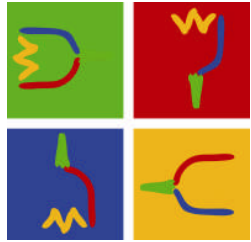
- What are we Trying to Accomplish? (Euphoria)
- What can we do now? (Herd the Cats)
- What is our Plan to get There? (the Road to Euphoria)
- How are we Doing? (Product Development/Systems Acquisition and Metrics)





# Approach for Success



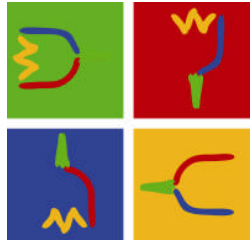


# Benefits/Features

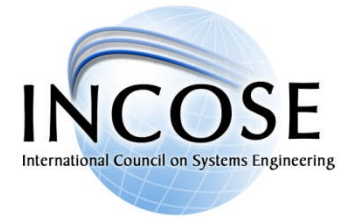


- **Enterprise View of all Investments** (Provides “Dashboard” Type Control on your Future)
- Focused Investments Towards Common Goals (Corporate Alignment)
- Includes Requirements, Architecture, Analysis of Alternatives, Life-Cycle Costing, Decision Points and Road Mapping
- Enables Total Investment/Corporate Agility
  - Identifies New Investment Opportunities
  - Identifies “Big Wins” Early on

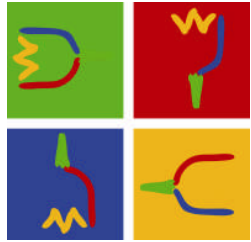




# A Successful Implementation



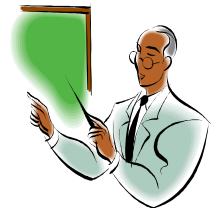
- Mission-directed research established as a technology portfolio
- A secure virtual environment in the middle (application server) tier of the computing architecture
- Maneuvered through the technology transition process
- Enterprise IT preparing to jump from the s-curve of display-back technology to that of virtualization

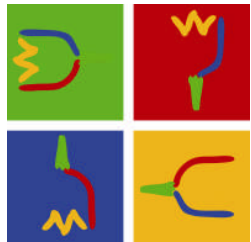


# Research Topics



- Better Product Development Metrics; Ex. System Readiness Levels and Integration Readiness Levels (SRL and IRL)
  - Current Work at Steven's Institute of Technology and Northrop Grumman
    - web site reference <http://www.systemreadinesslevel.com>
- Study – What % of New Products Result from Newly Discovered Gaps- Increased Revenue?
- Tools to implement a combined SE, CPM and Road Mapping Approach
- Investment Savings- Quantify across Resources



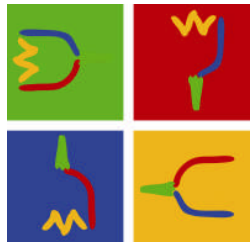


# Other Ideas



- Incorporate Portfolio Management into the principles and paradigm of Systems Engineering
  - Enables one to View all Investments from a Corporate/Enterprise Perspective
  - Enables Objective, Value Based Decisions
- Incorporate Concepts into:
  - Future DoD Acquisition Documents
  - Systems Engineering curriculum
- Audience Ideas???





# Contacts



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